

18th Annual Safar Symposium

FUTURE VISIONS
for
**Neuroprotection
Neuroanesthesia &
Neurorehabilitation**



40th Peter and Eva Safar Lecture
for the Sciences and Humanities

Ed Boyden, PhD

Massachusetts Institute of Technology

**Tools for analyzing and
repairing the brain**

Wednesday May 19, 2021 | 8 am to 4:30 pm | Virtual

Thursday May 20, 2021 | 9 am to 12:30 pm | Virtual

Schedule of Events

Wednesday, May 19, 2021

Future Visions for Neuroprotection, Neuroanesthesia & Neurorehabilitation

- 8 am-11:30 am Scientific lectures
- 11:30 am Awards presentation
- 12 pm-1 pm 40th Peter & Eva Safar Annual Lectureship in Medical Sciences and Humanities

Multi-Departmental Trainees' Research Day

- 2 pm-3:45 pm Trainees' abstract presentations
- 4:00 pm Awards presentation

Thursday, May 20, 2021

WISER Simulation Lecture Session: Challenges in Maintaining Simulation Excellence

- 9 am-12:30 pm Simulation presentations

Safar Symposium Planning Committee

The 18th Annual Safar Symposium is hosted by Patrick M. Kochanek, MD, MCCM, director of the Safar Center for Resuscitation Research, and Aman Mahajan, MD, PhD, MBA, chair of the Department of Anesthesiology and Perioperative Medicine. Committee members are:

Christa Brown, MA
Clifton W. Callaway, MD, PhD
Robert S.B. Clark, MD
C. Edward Dixon, PhD
Anthony E. Kline, PhD

Patrick M. Kochanek, MD
John O'Donnell, DrPH, CRNA
Paul E. Phrampus, MD
Amy K. Wagner, MD
Yan Xu, PhD

Peter & Eva Safar Lectureship

The lectureship honors the late Peter Safar, MD, and his wife Eva for their professional and personal contribution to the scientific community. His pioneering efforts and accomplishments in emergency medicine, critical care medicine, resuscitation research, and disaster re-animatology have saved countless lives and gained international recognition.

In 1961, Peter founded and served as chair of the Department of Anesthesiology and Critical Care Medicine of the University of Pittsburgh School of Medicine, where he was the Distinguished Professor of Resuscitation Medicine for 24 years. He founded and served as the director of the International Resuscitation Research Center at the University of Pittsburgh. In recognition of Peter Safar's contributions to the field of resuscitation science, the Center was renamed the Safar Center for Resuscitation Research by his successor. In 1980, the Peter and Eva Safar Lectureship was established by Peter M. Winter, MD, chair of the Department of Anesthesiology and Critical Care Medicine from 1979 to 1996.



Past Lecturers

**Nobel Prize winners*

| | | | |
|------------------|---------------------------------|------------------|------------------------------|
| 1 st | John J. Bonica, MD | 21 st | John B. Anderson |
| 2 nd | John W. Severinghaus, MD | 22 nd | Michal Schwartz, PhD |
| 3 rd | Nicholas M. Green, MD | 23 rd | Lyn Yaffe, MD |
| 4 th | *Hans A. Bethe, PhD | 24 th | Edward Lowenstein, MD |
| 5 th | James E. Eckenhoff, MD | 25 th | James C. Grotta, MD |
| 6 th | Victor F. Weisskopf, PhD | 26 th | Anthony Atala, MD |
| 7 th | Otto K. Mayrhofer, MD | 27 th | David M. Gaba, MD |
| 8 th | Ake N. Grenvik, MD, PhD | 28 th | John W. Olney, MD |
| 9 th | Edmond I. Eger II, MD | 29 th | Fritz Sterz, MD |
| 10 th | Freeman J. Dyson | 30 th | Frank Shann, MD |
| 11 th | John Francis Nunn, MB, ChB, PhD | 31 st | Hugo Van Aken, MD, PhD, FRCA |
| 12 th | Thomas Fredric Hornbein, MD | 32 nd | Gabriel G. Haddad, MD |
| 13 th | Yung Shieh, MD | 33 rd | John T. Povlishock, PhD |
| 14 th | John G. Wade, MD | 34 th | Gerald F. Gebhart, PhD |
| 15 th | S. William A. Gunn, MD, MS | 35 th | Hans Friberg, MD, PhD |
| 16 th | Henrik H. Bendixen, MD | 36 th | J. Marc Simard, MD, PhD |
| 17 th | Marcus E. Raichle, MD | 37 th | Donna M. Ferriero, MS, MSC |
| 18 th | Donald P. Wolf, PhD | 38 th | Lewis S. Nelson, MD |
| 19 th | *Bernard Lown, MD | 39 th | David G. Nichols, MD, MBA |
| 20 th | Bo Siesjö, MD, PhD | 40 th | Ed Boyden, PhD |

Program: Wednesday, May 19

Future Visions for Neuroprotection, Neuroanesthesia & Neurorehabilitation

- Moderators: **Clifton W. Callaway, MD, PhD**
Professor and Executive Vice Chair, Department of
Emergency Medicine
Ronald D. Stewart Endowed Chair of Emergency
Medicine Research, University of Pittsburgh
- Ericka Fink, MD, MS, FCCM**
Associate Professor, Critical Care Medicine, Pediatrics,
and Clinical and Translational Science
UPMC Children’s Hospital of Pittsburgh
- 8:00 – 8:15 ***Opening Comments***
 Patrick M. Kochanek, MD, MCCM
Grenvik Professor and Vice Chair
Department of Critical Care Medicine
Director, Safar Center for Resuscitation Research
University of Pittsburgh School of Medicine
- 8:15 – 8:35 **Mark E. Schurdak, PhD**
Director of Operations, University of Pittsburgh Drug
Discovery Institute
Associate Professor, Computational and Systems
Biology, University of Pittsburgh
***Application of Quantitative Systems Pharmacology to
Identify Novel Targets and Therapeutic Approaches
for Traumatic Brain Injury***
- 8:35 – 8:45 DISCUSSION
- 8:45 – 9:05 **Emanuela Keller, MD**
Professor of Medicine, Intensive Care and Emergency
Medicine, Neurocritical Care
University Hospital of Zurich, Switzerland
***Future Visions for Neuromonitoring in
Neurocritical Care***
- 9:05 – 9:15 DISCUSSION

- 9:15 – 9:35 **Jonathan Elmer, MD, MS**
Assistant Professor, Emergency Medicine, Critical Care
Medicine, and Neurology
University of Pittsburgh School of Medicine
***Big Data and Continuous EEG Monitoring after
Cardiac Arrest***
- 9:35 – 9:45 DISCUSSION
- 9:45 – 10:00 BREAK #1
- 10:00 – 10:20 **Sapna R. Kudchadkar, MD, PhD, FCCM**
Associate Professor, Anesthesiology and Critical Care
Medicine, Pediatrics, and PM&R
Associate Vice Chair for Research
Johns Hopkins University School of Medicine
The Future for Rehabilitation in Neurocritical Care
- 10:20 – 10:30 DISCUSSION
- 10:30 – 10:50 **Neil Munjal, MD**
NIH T32 Post-Doctoral Scholar, Pediatric Critical Care
Medicine, UPMC Children’s Hospital of Pittsburgh
***Machine Learning Predicting Mortality and Morbidity
in Children with Neurological Injury in the Pediatric
Intensive Care Unit***
- 10:50 – 11:00 DISCUSSION
- 11:00 – 11:20 **Adam R. Ferguson, MS, PhD**
Director of Data Science Brain and Spinal Injury Center
Associate Professor, Department of Neurological
Surgery, Weill Institute for Neuroscience
University of California, San Francisco
***Leveraging Data Science for Discovery and
Translation in Traumatic Brain Injury***
- 11:20 – 11:30 DISCUSSION

- 11:30 – 11:45 **Patrick M. Kochanek, MD, MCCM**
Presentation of the:
 Nancy Caroline Fellow Award
 S. William Stezoski Award for Technician Excellence
Morning Session Closing Remarks
- 11:45 – 12:00 BREAK #2

40th Peter & Eva Safar Annual Lectureship in Medical Sciences & Humanities

- 12:00 – 1:00 **Ed Boyden, PhD**
Professor, Brain and Cognitive Sciences, Media Arts
and Sciences, and Biological Engineering
Massachusetts Institute of Technology
Y. Eva Tan Professor in Neurotechnology
McGovern Institute and HHMI
Tools for Analyzing and Repairing the Brain
- 1:00 – 2:00 LUNCH BREAK

Multi-Departmental Trainees' Research Day

- 2:00 – 2:05 ***Opening Comments***
Patrick M. Kochanek, MD, MCCM
Grenvik Professor and Vice Chair
Department of Critical Care Medicine
Director, Safar Center for Resuscitation Research
University of Pittsburgh School of Medicine
- 2:05 – 2:15 **Move to Breakout Rooms**
- 2:15 – 3:45 **Trainee Presentations**
- 4:00 **Patrick M. Kochanek, MD, MCCM**
Presentation of Awards

Symposium Speaker Profiles

Ed Boyden, PhD



Dr. Ed Boyden leads the Synthetic Neurobiology Group, which develops tools for analyzing and repairing complex biological systems—such as the brain—and applies the tools systematically to reveal ground truth principles of biological function as well as to repair these systems.

He uses technologies that include expansion microscopy, which enables complex biological systems to be imaged with nanoscale precision; optogenetic tools, which enable the activation and silencing of neural activity with light; and robotic methods for directed evolution that are yielding new synthetic biology reagents for dynamic imaging of physiological signals, such as neural voltage. He also uses novel methods of noninvasive focal brain stimulation along with new methods of nanofabrication that use shrinking of patterned materials to create nanostructures with ordinary lab equipment.

Dr. Boyden is co-director of the MIT Center for Neurobiological Engineering that aims to develop new tools to accelerate neuroscience progress. He has given TED talks, delivered lectures at the World Economic Forum, and co-founded four startup companies.

A 2018 Investigator of the Howard Hughes Medical Institute, he has received numerous awards and recognitions for his groundbreaking work. In 2019 alone, he was elected a member of the National Academy of Sciences and received the Croonian Medal, the Lennart Nilsson Award, the Warren Alpert Foundation Prize, and the Rumford Prize.

His brain-science related awards include the Canada Gairdner International Award, the Breakthrough Prize in Life Sciences, the BBVA Foundation Frontiers of Knowledge Award, the Carnegie Prize in Mind and Brain Sciences, the Jacob Heskell Gabbay Award, and the Grete Lundbeck Brain Prize.

Earlier in his career, he was the recipient of the NIH Director's Pioneer Award, received the NIH Director's Transformative Research Award on three occasions, and the Perl/UNC Neuroscience Prize. He was named to the World Economic Forum Young Scientist list and to the Technology Review World's "Top 35 Innovators under Age 35" list in 2006. He is also an elected member of the American Academy of Arts and Sciences, the

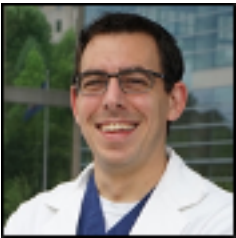
National Academy of Inventors, and the American Institute for Medical and Biological Engineering.

Dr. Boyden received his PhD in neurosciences from Stanford University as a Hertz Fellow. He discovered that the molecular mechanisms used to store a memory are determined by the content to be learned. In parallel to his PhD, he co-invented optogenetic control of neurons, which is now used throughout neuroscience.

Starting college at age 14, he studied chemistry at the Texas Academy of Math and Science at the University of North Texas, where he worked on origins of life chemistry. At MIT he graduate at 19 with three degrees in electrical engineering, computer science, and physics while working on quantum computing in Neil Gershenfeld's group. He has contributed to over 160 peer-reviewed papers and 190 granted patents and has given over 500 invited talks on his group's work.

Long-term, Dr. Boyden hopes that his work on understanding how the brain generates the mind will help provide a deeper understanding of the human condition. And perhaps, in the future, help humanity achieve a more enlightened state.

Jonathan Elmer, MD, MS



Dr. Jonathan Elmer is assistant professor of Emergency Medicine, Critical Care Medicine and Neurology at the University of Pittsburgh School of Medicine. His research focuses on improving outcomes of cardiac arrest survivors. Dr. Elmer's work centers on knowledge creation in three domains: elucidating the effect of neurocritical care and its delivery systems on patient outcomes; advancing the science of neurological

prognostication and post-arrest risk stratification; and developing robust methods for analysis of continuous, correlated physiological and electroencephalographic data. Clinically, he attends in the neurovascular and neurotrauma intensive care units and on the Post-Cardiac Arrest Service at UPMC Presbyterian Hospital.

Adam R. Ferguson, MS, PhD



Dr. Adam Ferguson is an associate professor in the Brain and Spinal Injury Center at the University of California San Francisco and the Zuckerberg San Francisco General Hospital, and jointly appointed principal investigator at the San Francisco VA Healthcare System. His interests span basic neuroscience to large-scale clinical data science and precision medicine. He directs a translational data-science research team as well as a bench-based

neuroscience laboratory focused on neurotrauma. Dr. Ferguson serves as founding principal investigator and co-director of multicenter cloud-based open data commons efforts for spinal cord injury (odc-sci.org) and traumatic brain injury (odc-tbi.org). He also serves as principal data scientist in the VA Gordon Mansfield Spinal Cord Injury Consortium, a federated translational modeling project; and is a core member of large-scale clinical precision medicine research projects known as Transforming Research And Clinical Knowledge for TBI (TRACK-TBI) and SCI (TRACK-SCI). Together these data assets of more than 10,000 individuals represent multiple species tracked on over 20,000 biological/clinical variables + genomics + high-resolution imaging. He has substantial experience leveraging cloud technologies for neuroscience data management and analytics to support new discoveries in both basic neurobiology and clinical science. He has authored over 150 peer-reviewed papers and has served as PI on numerous federal grants and awards.

Emanuela Keller, MD



Dr. Emanuela Keller is an associate professor for intensive care at the University of Zurich, where she heads the Neurointensive Care Unit at the University Hospital of Zurich. After graduating from the University of Zurich, she undertook research fellowships at the Institute of Physiology University of Zurich and later on in cardiology at Hammersmith Hospital London. She completed her clinical training in internal medicine and

intensive care medicine in Zurich. After another research fellowship at the neurocritical care unit of the Department of Neurology at the Heidelberg University Hospital, Dr. Keller worked to extend and professionalize the neurosurgical intensive care unit at University Hospital Zurich. In 2015 and 2018, Dr. Keller participated in the fellowships ELAM (Executive Leadership in Academic Medicine) at Drexel University and in the Clinical

Informatics Board Review Course of the American Medical Informatics Association for training in academic leadership and health informatics. Her research is focused on new methods to estimate cerebral hemodynamics and oxygenation by applying optical spectroscopy and clinical research informatics. This work has resulted in numerous publications and lectures as well as more than US\$7 million third-party funding during her academic career. She has received several patents for her inventions, and founded a spin-off company for the industrialization of newly invented neuromonitoring devices, which was awarded the EUREKA Innovation Award by the European Union in 2016.

Sapna Kudchadkar, MD, PhD, FCCM



Dr. Sapna Kudchadkar is an associate professor of Anesthesiology and Critical Care Medicine, Pediatrics, and Physical Medicine and Rehabilitation at the Johns Hopkins Hospital. She received her BA in Biochemistry and French at Washington University and MD at the University of Chicago. She completed residencies in Pediatrics and Anesthesiology, followed by fellowships in Pediatric Critical Care and Pediatric Anesthesiology

at Johns Hopkins. After clinical training, she completed a PhD in Clinical Investigation at the Johns Hopkins University Bloomberg School of Public Health where she was awarded the Sommer Scholar Award for PhD candidates who “exemplify scientific excellence, energy, ambition, political acumen and a determination to change the world” through public health research. Her clinical and research focus is functional outcomes after pediatric critical illness and major surgery and the interplay of sedation optimization, sleep promotion, delirium prevention, and early mobilization in pediatric ICU care. She is the founder and director of the Johns Hopkins PICU Up! Program, which has been implemented in pediatric ICUs internationally. Dr. Kudchadkar is the lead PI for the Prevalence of Acute Rehabilitation for Kids in the PICU (PARK-PICU) study, which includes more than 200 international sites. At Johns Hopkins, is the associate vice chair for Research in Anesthesiology and CCM and the director of Pediatric Critical Care Research. She is a senior associate editor of the journal *Pediatric Critical Care Medicine*.

Neil Munjal, MD



Dr. Neil Munjal is a dual-trained pediatric intensivist and child neurologist and is currently completing an NIH T32 post-doctoral scholarship at the Safar Center for Resuscitation Research at the University of Pittsburgh. With a background in computer science, Dr. Munjal's clinical interest is in the applications of machine learning to ICU medicine, specifically high-resolution predictive modeling, decision support, and causal inference.

Mark E. Schurdak, PhD



Dr. Mark Schurdak is director of Operations at the University of Pittsburgh Drug Discovery Institute (UPDDI), and associate professor of Computational and Systems Biology. He has a PhD in pharmacology from Baylor College of Medicine, and over 20 years of experience in the development and implementation of assays for high-throughput screening (HTS), high-content screening, and hit-to-lead (HtL) campaigns in the biotech and large

pharmaceutical companies. While in the Neuroscience Department at Abbott Laboratories, Dr. Schurdak led efforts to identify novel therapeutic targets and drugs for pain management, developing and implementing HTS and HtL screening campaign for numerous projects. Over the last nine years at the UPDDI, he has been developing Quantitative Systems Pharmacology (QSP), an approach to drug discovery that integrates clinical, computational and experimental analyses to gain a comprehensive understanding of disease pathology with which to inform effective therapeutic approaches for disease management, and also has been leading the application of QSP to neurodegenerative diseases including Huntington's Disease, Alzheimer's Disease and traumatic brain injury.

Program: Thursday, May 20

WISER Simulation Lecture Session: Challenges in Maintaining Simulation Excellence

Moderators:

Christa Brown, MA

Director, Educational Development, Winter Institute
for Simulation, Education and Research
University of Pittsburgh

John O'Donnell, DrPh, CRNA

Professor and Chair, Department of Nurse Anesthesia
Director, Nurse Anesthesia Program
University of Pittsburgh School of Nursing
Senior Associate Director, Winter Institute for
Simulation and Education Research

9:00

Welcome

Patrick M. Kochanek, MD, MCCM

Grenvik Professor and Vice Chair, Department of Critical
Care Medicine, Director, Safar Center for Resuscitation
Research, University of Pittsburgh School of Medicine

9:05 – 9:20

John O'Donnell, DrPh, CRNA

Professor and Chair, Department of Nurse Anesthesia
University of Pittsburgh

Getting WISER During a Pandemic

9:20 – 9:30

DISCUSSION

9:30 – 9:50

Joseph Liu, CHSE, MD

Associated Professor
Vice Director of Emergency Department
Peking Union Medical College Hospital, China
***iTEACHER: Faculty Development Project on
Emergency Residency Training in China***

9:50 – 10:00

DISCUSSION

- 10:00 – 10:20 **Usapan Surabenjawong, MD**
Department of Emergency Medicine
Faculty of Medicine, Siriraj Hospital, Mahidol University
The COVID Challenges and the New Normal in Thai Simulation
- 10:20 -10:30 DISCUSSION
- 10:30 – 10:45 BREAK
- 10:45 – 11:05 **Janice C. Palaganas, PhD, APRN, ANEF, FNAP, FAAN, FSSH**
Chief Executive Officer, The Institute for
Interprofessional Innovations
Assistant Professor of Anaesthesia, Massachusetts
General Hospital, Department of Anesthesia, Critical
Care, & Pain Medicine, Harvard Medical School
***Whaddarya? Cultural Considerations in Simulation
and Interprofessional Education***
- 11:05 – 11:15 DISCUSSION
- 11:15 – 11:35 **Robert Armstrong, MS**
Executive Director, Sentara Center for Simulation and
Immersive Learning, Eastern Virginia Medical School
Leaning into the Future
- 11:35 – 11:45 DISCUSSION
- 11:45 – 12:05 **Jannet Lee-Jayaram, MD, CHSE**
Associate Director, SimTiki Simulation Center
Assistant Professor of Pediatrics
University of Hawaii, John A Burns School of Medicine
Facilitator Training on Demand
- 12:05 – 12:15 DISCUSSION

12:15 – 12:30

Morning Wrap Up / Highlights

Paul Phrampus, MD

Medical Director, Wolff Center at UPMC

Medical Director, Patient Safety for

UPMC Health System

Director, Winter Institute for Simulation, Education
and Research

Professor, Emergency Medicine and Anesthesiology

University of Pittsburgh and UPMC

Closing Comments

Patrick M. Kochanek, MD, MCCM

Grenvik Professor and Vice Chair

Department of Critical Care Medicine

Director, Safar Center for Resuscitation Research

University of Pittsburgh School of Medicine

Simulation Speaker Profiles

Robert Armstrong, MS



Robert Armstrong is passionate about leveraging modeling and simulation technologies to improve patient safety and outcomes. He serves as an assistant professor within the School of Health Professions and as executive director of the Sentara Center for Simulation and Immersive Learning at Eastern Virginia Medical School (EVMS) in Norfolk, Virginia. He is also the program director for the National Center for Collaboration

in Medical Modeling and Simulation, and EVMS director of Corporate Relations. Bob served as the president of the Society for Simulation in Healthcare in 2020. He is a graduate of the U.S. Naval Academy and Naval Postgraduate School, retiring from the U.S. Marine Corps as a Lieutenant Colonel in 2005.

Jannet Lee-Jayaram, MD, CHSE



Dr. Jannet Lee-Jayaram is the associate director of the SimTiki Simulation Center at the University of Hawaii John A Burns School of Medicine and a Certified Healthcare Simulation Educator. She has been teaching using simulation with Pediatric Advanced Life Support since 2005, has designed and facilitated pediatric simulation for medical students, residents and interprofessional hospital staff both in the classroom

and in-situ. She worked with her director and staff to prepare SimTiki for the Society for Simulation's certification in research, teaching/education, assessment, and fellowship programs. She is a course director for the faculty simulation educational methods course, a facilitator internationally and locally for faculty development courses, and is the associate director for the international fellowship in simulation-based education at SimTiki. As a learning community mentor for the medical school, Dr. Lee-Jayaram has developed novel simulation curricula for the students, along with facilitator training and faculty development for the faculty mentors. She is a pediatric emergency medicine physician at the Kapiolani Medical Center for Women and Children and is Chair of the Code Blue Committee and manages quarterly in-situ mock codes.

Joseph Liu, MD, CHSE



Dr. Joseph Liu is an Emergency Medicine physician at Peking Union Medical College Hospital (PUMCH), which is one of the best hospitals in China. He is the assistant director of the Emergency Department and directs the Emergency Medicine residency training program. He is also an associated professor of Peking Union Medical College. Dr. Liu is the vice director of the Education Department and the Simulation Training Center at

PUMCH. The American Heart Association training site, which is one important parts of the simulation training center, was founded in 2009.

John O'Donnell, DrPH, CRNA



Dr. John O'Donnell is professor and chair of the Department of Nurse Anesthesia and has been director of the Nurse Anesthesia Program at the University of Pittsburgh for the past 27 years. He is also the senior associate director of the Winter Institute for Simulation, Education and Research (WISER), one of the best known, fully accredited interprofessional simulation centers in the world. Dr. O'Donnell was inducted as one of the first

CRNAs to be a fellow of the Society for Simulation in Healthcare in 2019 and was elected treasurer of this 4500-member interprofessional society in 2020. He has served in multiple positions on the State and National levels of the AANA, was recently elected to the Board of Directors of the Council on Accreditation of Nurse Education Program and was the AANA National Program Director of the Year in 2006. He was honored with the University of Pittsburgh Chancellor's Distinguished Teaching Award in 2012 and named *Pittsburgh Magazine's* Nurse Educator of Year in 2017. Dr. O'Donnell has more than 100 publications to his credit and has received more than \$3.5 million in research and training grants across his career. He is currently working with a team of engineers on a new augmented reality simulator called BodyExplorer™ and has formed Lumis Corp. in order to bring this new device to market.

Janice Palaganas, BSN, MSN, PhD



Dr. Janice Palaganas is a simulationist, behavioral scientist, humanitarian, patient safety advocate, academician and clinician. She has held many roles over the last two decades including clinical positions, hospital and university administrator, educator, researcher, mentor, and consultant. Her current affiliations are with Massachusetts General Hospital (MGH) Institute of Health Professions at Harvard Medical School in the Department

of Anesthesia, Critical Care, and Pain Medicine, and the Center for Medical Simulation (CMS).

Dr. Palaganas has developed a passion in teamwork from her background as an emergency nurse, trauma nurse practitioner, director of emergency and critical care services, and faculty for schools of medicine, nursing, allied health, management, and emergency medicine. As a behavioral scientist and former clinician and administrator, her interest is centered on healthcare simulation-based and practice-based simulation as a

platform for interprofessional education (IPE). She has served as a member of the National Academy of Medicine's (Institute of Medicine) report on measuring the impact of IPE on practice. Her primary role is to develop educators in an IPE setting. She has led many prominent instructor courses, educating educators in simulation and IPE globally and has developed many online environments including CMS's interprofessional virtual campus as the principal investigator of a Josiah Macy Jr. Foundation grant. She has shaped the fields of simulation and IPE, led the development of the Society for Simulation's (SSH) Accreditation and Certification Program, edited two textbooks in simulation, authored several chapters in simulation and IPE, seminal articles and field-changing research including the national study for high-stakes assessment using simulation.

In addition, she chairs the Credentialing Commission of SSH overseeing Accreditation, Certification, Academy of Fellows, Dictionary, and Code of Ethics. She is a fellow for the Academy of Nurse Educators, American Academy of Nursing, National Academy of Practice and was part of the inaugural group of the Academy of Fellows for Simulation in Healthcare. She is co-podcaster on "DJ Simulationistas...sup?" and "SimFails." She has been an invited keynote speaker and visiting professor in 30 countries and directs the first PhD in Health Professions Education focused on Healthcare Simulation at MGH.

Paul Phrampus, MD



Dr. Paul Phrampus is the director of the Peter M. Winter Institute for Simulation, Education and Research (WISER). He is a professor in the Departments of Emergency Medicine and Anesthesiology of the University of Pittsburgh School of Medicine. Dr. Phrampus is the medical director for Patient Safety of the UPMC Health System and is an active member of the Quality Patient Care Committee of the UPMC Board of Directors. He

is a fellow of the Society for Simulation in Healthcare and a Certified Professional in Patient Safety.

Dr. Phrampus has overseen the expansion of WISER capabilities by developing a distributive management model for the WISER main campus as well as the satellite centers deployed throughout the UPMC Health System. He is a past president of the Society for Simulation in Healthcare and a member of the University of Pittsburgh's Academy of Master Educators. He has been active in education for many years and won

numerous awards as a faculty educator. He seeks to increase the efficiency and effectiveness of learning and developing methods to improve the safety and quality of healthcare delivery.

His international education endeavors have included academic institutions and hospitals in Australia, Costa Rica, Chile, China, Germany, India, Indonesia, Israel, Italy, Japan, Malaysia, Mexico, Norway, Philippines, Saudi Arabia, South Korea, Singapore, and Thailand. He has extensive experience with computer systems and electronics, interests that he developed during his seven years of service in the United States Navy.

Usapan Surabenjawong, MD



Dr. Usapan Surabenjawong is an Emergency Medicine physician at the Siriraj Hospital at Mahidol University in Salaya, Thailand. In 2016, she was a research fellow for simulation at WISER. She is the course director of the integrating airway workshop and simulation-based program for 5th and 6th year medical students and a committee member of the Thai Simulation Society.

The Safar Center for Resuscitation Research gratefully
acknowledges the support of our sponsors:

Dr. Ake N. Grenvik Endowed Chair in Critical Care Medicine
Department of Anesthesiology & Perioperative Medicine
Department of Critical Care Medicine
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