



SCCM Midwest Chapter Presents

**3<sup>RD</sup> ANNUAL VIRTUAL  
CRITICAL CARE CONFERENCE**

**August 13<sup>th</sup>, 2022**

**Immunology & Immunotherapy in  
Critical Illness**



**Scan the QR code to register**



**OR**

**Visit <https://www.sccmmwc.org>**

# August 13, 2022

## SCCM Midwest Chapter Presents

# 3<sup>rd</sup> Annual Virtual Critical Care Conference

## *Immunology and Immunotherapy in Critical Illness*



### *Foreword*

Dear Colleagues,

The onset of the omicron variant in February 2022, coupled with a change to the virtual format of the 2022 SCCM Congress, led us to another year of the annual congress in a virtual format. In this year's congress, our focus will be "Immunology and Immunotherapy in Critical Illness." The COVID-19 pandemic and associated immunologic complications managed with unfamiliar immunotherapeutic agents were just a trigger!



Our knowledge of the pathogenesis of various critical illnesses has evolved significantly throughout the past few decades, and immune organ dysfunction is coming to the forefront of many diseases. As complicated as this topic seems, we can no longer place it on the back burner. It is not just about HIV or immunodeficiency disorders, but now it is part of most of the critical illnesses managed in the intensive care unit, including patients with trauma and cardiac surgery. Is there something beyond antibiotics, fluids, and inotropes that need to be considered while managing sepsis patients? Are all sepsis patients alike, and do they have sepsis, or do other conditions need to become part of the discussion? While prescribing nutrition or transfusing blood products, do we need to consider its impact on immune organ function? Though steroids have stood the test of time, immune checkpoint inhibitors and CAR-T cell therapy have changed the lives of patients with malignancy, autoimmune diseases, transplants etc. However, when these patients are admitted to the ICU, how do we care for them? Should the medications be held or continued? How do we understand the interaction of such conditions and presenting illnesses? Our world-renowned faculty will address all these topics in one packed day. The spectrum of speakers from different professions will be giving their perspectives, sharing their experiences, and enriching the day with interactive presentations. Don't forget to join us for the Jeopardy session to test your knowledge and cheer on our trainees!

Please take advantage of the virtual format and join us from the convenience of your home for the "3<sup>rd</sup> Annual Virtual Critical Care Conference" of the Midwest Chapter to share knowledge, interact, and network with professionals who share the common passion of caring for the critically ill. Hoping to meet your pet pals and get enticed with fabulous summer blooms from your garden at the virtual social networking event at the end of the day!

*Varsha Gharpure*

Varsha Gharpure, MD, FAAP, FCCM  
President, SCCM Midwest Chapter



**August 13, 2022**

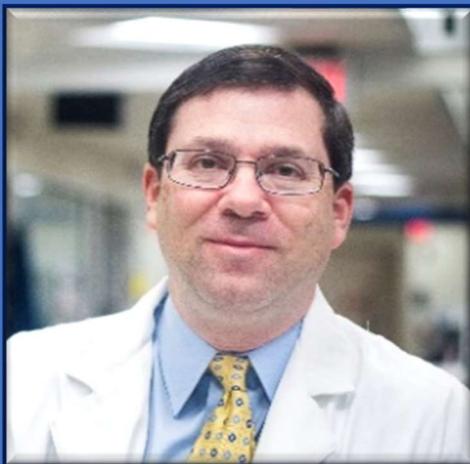
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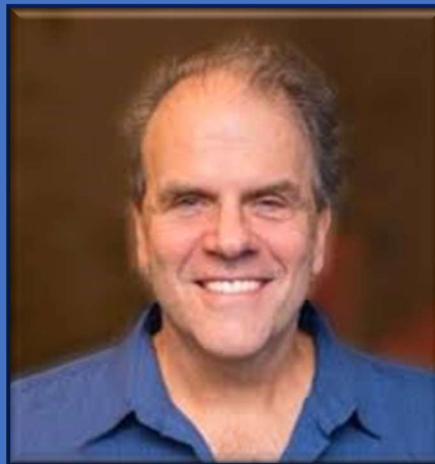
*Immunology and Immunotherapy in Critical Illness*

## FEATURED SPEAKERS

Dr Craig Coopersmith



Dr Joseph Carcillo



Dr Kenneth Remy



**To Register or Participate in Jeopardy,**

**Visit: <https://www.sccmmwc.org>**

**Abstract Submission is now Closed.**

### Registration Fee:

SCCM-Midwest Chapter Members: \$0.

Speakers, Trainees, Jeopardy, and Abstract Presenter: \$0.

Non-members: \$40.

**To Join SCCM Midwest Chapter, Visit: <https://www.sccmmwc.org/membership/>**

**Contact Us: [sccmmwc@gmail.com](mailto:sccmmwc@gmail.com)**

**University of Illinois College of Medicine at Peoria will Provide CME/CEU (Anticipated 6.75 hours).**

Scan QR code



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### SCHEDULE (CENTRAL DAYLIGHT TIME ZONE)

**08:00 – 08:15 REGISTRATION AND EXHIBIT HALL**

**08:15 – 08:30 PRESIDENT'S ADDRESS**

Welcome, Introduction, Housekeeping Remarks

*Varsha Gharpure, MD, FAAP, FCCM*

**08:30 – 09:15 PLENARY SESSION**

Immunology in Critical Illness – Past, Present, and Future

*Craig Coopersmith, MD, FACS, MCCM*

**09:15 – 10:00 KEYNOTE ADDRESS**

Personalized Immunologic Approaches for COVID-19 and Sepsis: Lessons Learned from a Pandemic

*Kenneth Remy, MD, MHSc, MSCI, FCCM*

**10:00 – 10:15 COFFEE BREAK/EXHIBIT HALL**

**10:15 – 11:15 BREAKOUT SESSIONS - 1 (SELECT 1 OUT OF 4)**

**1) Autoimmune Neurological Emergencies**

Autoimmune Encephalitis - *Romer Geocadin, MD, FNCS, FAAN, FANA*

Neuroinflammatory Disorders in the Pediatric Intensive Care Unit - *Grace Gombolay, MD*

**2) Immunological Emergencies in Transplant Recipients**

Care of the Lung Transplant Patient in the Intensive Care Unit - A Focus on Immunology

*Adil Sheikh, MD*

Heart Transplant Emergencies and Changing Landscape of Immunological Surveillance of Rejection

*Roopa Rao, MBBS, FACC*

**3) Severe Acute Respiratory Syndrome Coronavirus-2 Infection**

Immune Dysregulation in SARS-CoV2-associated Disease in Children

*Nina Brodsky, MD*

Dysregulated Immune Response in Acute Covid 19 Infection: Pathophysiology and Management

*Praveen Sudhindra, MD*

**4) Impact of Nutrition on Immune Response in Critical Illness**

*Jackie Hermanson, MS, RD, LDN; Ann Cotton, MS, RD, CNSC*

**11:15 – 12:00 LECTURE**

**CAR-T Cell Therapy and Immune Checkpoint Inhibitors in the Intensive Care Unit**

How to Survive a CAR Crash – Management of the ICU CAR-T Cell Therapy Patient

*Anne Rain Brown, PharmD, BCCCP, FCCM*

Management of Immune Checkpoint Inhibitor Toxicity in the Critically Ill Patient

*Joshua Arnold, PharmD, BCPS, BCCCP*

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**12:00 – 12:30 POSTER PRESENTATIONS**

**12:30 – 13:00 LUNCH & EXHIBIT HALL**

**13:00 – 14:00 BREAKOUT SESSIONS - 2 (SELECT 1 OUT OF 4)**

1) Immune-Mediated Transfusion Reactions

*Jennifer Muszynski, MD, MPH, FCCM; Yunchuan Delores Mo, MD, MSc*

2) The Immunologic Response to Traumatic Injury and Transfusion

*Timothy Plackett, DO, MPH, FACS; Joseph Posluszny, MD*

3) Extracorporeal Clearance Therapies

Therapeutic Plasma Exchange in the Critically Ill Patient with Inflammation

*Nicole Zantek, MD, PhD*

CRRT-Based Therapies for Immune-Mediated and Inflammatory Diseases in Critically Ill Patients

*Tara Neumayr, MD*

4) Cardiopulmonary Bypass and Ischemia-Reperfusion Injury

Inflammation and Pediatric Cardiac Surgery: Too Much of a Good Thing?

*Alexis Benscoter, DO*

Management of Inflammatory Response and Ischemia Reperfusion Injury after Pediatric

Cardiopulmonary Bypass - *Chawki El-zein, MD, FACS*

**14:00 – 14:45 BREAKOUT SESSIONS - 3 (SELECT 1 OUT OF 2)**

1) Myocarditis: New Paradigms in Diagnosis, Management, and Treatment

*Kory Levine, MD, PhD*

2) A Multi-disciplinary Team Approach to Pediatric Immune Dysregulation: Challenges, Successes, and Lessons Learned - *Lindsey Swigart, MSN, RN, CPNP-AC*

**14:45 – 15:00 COFFEE BREAK & EXHIBIT HALL**

**15:00 – 15:45 STAR RESEARCH PRESENTATIONS**

**15:45 – 16:30 KEYNOTE ADDRESS**

Sepsis Induced Multiple Organ Failure Immuno-Phenotypes

*Joseph Carcillo, MD*

**16:30 – 17:00 CRITICAL CARE JEOPARDY**

**17:00 – 17:30 SCCM MIDWEST CHAPTER ELECTION RESULTS, INTRODUCTION OF NEW OFFICERS, AND SOCIAL NETWORKING**

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### **Speakers & Sessions' Objectives**

#### **PRESIDENT'S ADDRESS**

Welcome, Introduction, Housekeeping Remarks



**Varsha Gharpure, MD, FAAP, FCCM**

Pediatric Intensivist, Advocate Children's Hospital, Park Ridge, IL  
Research Medical Director, Center for Child and Family Research,  
Advocate Aurora Research Institute, IL and WI  
Clinical Associate Professor of Pediatrics,  
Rosalind Franklin University of Medicine and Science, IL

#### **PLENARY SESSION**

**Immunology in Critical Illness – Past, Present, and Future**



**Craig Coopersmith, MD, FACS, MCCM**

Professor of Surgery, Vice Chair of Research, and Surgical Critical Care Fellowship Program Director,  
Department of Surgery, Emory University School of Medicine, GA  
Faculty: Immunology and Molecular Pathogenesis Program, Graduate Division of Biological and  
Biomedical Sciences, Laney Graduate School, Emory University, GA  
Director for critical care serious communicable disease unit, Emory University, GA  
Director, Emory Critical Care Center, GA  
Adjunct professor of Critical Care Medicine, Zhongnan Hospital of Wuhan University, China

Upon completion of this activity, learners should be able to

1. Understand history of immunology as it relates to critical illness.
2. Understand current state of immunology in the ICU.
3. Understand how the immune system might be targeted in the future in critically ill patients.

#### **KEYNOTE ADDRESS**

**Personalized Immunologic Approaches for COVID-19 and Sepsis: Lessons Learned from a Pandemic**



**Kenneth Remy, MD, MHSc, MSCI, FCCM**

Associate Professor

Departments of Internal Medicine, Pediatrics, Pathology, and Biochemistry in the Divisions of Pulmonary  
Critical Care Medicine and Pediatric Critical Care Medicine  
Director of the Division of Pulmonary Critical Care Medicine Basic Science and Translational Critical Care  
Research and Co-Director for Clinical, Basic Science, and Translational Critical Care Research in the  
Division of Pediatric Critical Care Medicine, Case Western Reserve University, OH

Upon completion of this activity, learners should be able to

1. Evaluate immune consequences of COVID-19 disease.
2. Understand potential challenges for treatment of COVID and Sepsis.
3. Explore potential methods on treatments of these immune consequences in COVID and Sepsis.

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### BREAKOUT SESSIONS - 1 (SELECT 1 OUT OF 4)

#### 1. Autoimmune Neurological Emergencies

##### Autoimmune Encephalitis



**Romer Geocadin, MD, FNCS, FAAN, FANA**

Professor, Department of Neurology and  
Department of Anesthesiology-Critical Care  
Medicine

Professor, Department of Neurological Surgery  
and Joint Appointment in the Department of  
Medicine, Johns Hopkins University School of  
Medicine, Baltimore, MD

Co-Director Johns Hopkins Encephalitis Center

1. Provide an update on the diagnosis of autoimmune encephalitis in the ICU.
2. Provide updates on critical care management of autoimmune encephalitis.

##### Neuroinflammatory Disorders in the Pediatric Intensive Care Unit



**Grace Gombolay, MD**

Assistant Professor of Pediatrics, Division of  
Neurology, Emory University School of  
Medicine

Director, Pediatric Neuroimmunology and  
Multiple Sclerosis Clinic, Division of Neurology,  
Children's Healthcare of Atlanta, GA

1. Describe the diagnostic evaluation and management for PICU patients with suspected neuroinflammation.
2. Describe distinguishing features between different neuroinflammatory diagnoses in children including ADEM, multiple sclerosis, anti-MOG associated disorder, transverse myelitis, and acute flaccid myelitis

#### 2. Immunological Emergencies in Transplant Recipients

##### Care of the Lung Transplant Patient in the ICU - A Focus on Immunology



**Adil Sheikh, MD**

Assistant Professor of Clinical Medicine  
Lung transplant and Adult ECMO program  
Division of Pulmonary, Critical Care, Sleep,  
and Occupational Medicine,  
Indiana University School of Medicine

1. Immunologic mechanisms for lung allograft failure:
  - in the post-op setting
  - acute/ hyper-acute rejection
  - chronic rejection
2. Clinical impact of rejection.
3. Primer on approach to management .

##### Heart Transplant Emergencies & Changing Landscape of Immunological Surveillance of Rejection



**Roopa Rao, MBBS, FACC**

Director, Congestive Heart Failure Program  
Indiana University Health Population Health  
Initiative

Assistant Professor of Clinical Medicine  
Indiana University School of Medicine  
Methodist Hospital, IN

1. Identifying heart transplant rejection emergencies.
2. Management overview.
3. Changing landscape of immunological surveillance in transplant patients.

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### 3. Severe Acute Respiratory Syndrome Coronavirus-2 Infection

#### Immune Dysregulation in SARS-CoV2-associated Disease in Children



**Nina Brodsky, MD**  
Instructor, Department of Pediatrics,  
Yale University School of Medicine, CT

1. Understand unique features and pathology of SARS-CoV2 in children.
2. Discuss immune pathology of SARS-CoV2 associated Multisystem Inflammatory Syndrome in Children (MIS-C)

#### Dysregulated immune response in Acute COVID-19 Infection: Pathophysiology and management



**Praveen Sudhindra, MD**  
Director,  
Critical Care Medicine UnityPoint Health, IL  
Clinical Assistant Professor of Medicine,  
UICOMP, IL

1. Learn about the role of host immune response in severe Covid 19 infection.
2. Understand the mechanisms of action of immunomodulatory medicines used in the treatment of severe Covid 19 infection.
3. Learn about the various treatments used and their indications in severe Covid 19 infection.

### 4. Impact of Nutrition on Immune Response in Critical Illness

#### Impact of nutrition on immune response in critical illness



**Jackie Hermanson, MS, RD, LDN**  
Dietician, Advocate Children's Hospital, IL

1. Identify and discuss the role of nutrients specific to the immune response.
2. Understand the effects of pediatric malnutrition in relation to the immune response and outcomes.
3. Describe nutrition support strategies for the pediatric patient that may help to improve the immune response in the critical care setting.

#### Impact of nutrition on immune response in critical illness



**Ann Cotton, MS, RD, CNSC**  
Clinical Dietician Specialist in Critical Care,  
Indiana University School of Medicine

1. Identify specific nutrients that impact immune system function.
2. Describe the effect of chronic versus acute malnutrition on immune function.
3. Discuss feeding strategies in the critical care setting that may improve immune response and related outcome measures.

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### LECTURE

#### CAR-T Cell Therapy and Immune Checkpoint Inhibitors in the Intensive Care Unit

##### How to Survive a CAR Crash – Management of the ICU CAR-T Cell Therapy Patient



**Anne Rain Brown, PharmD, BCCCP, FCCM**  
Clinical Pharmacy Specialist-Critical  
Care/Nutrition Support  
University of Texas MD Anderson Cancer  
Center, TX

1. Differentiate toxicities amongst CAR-T cell products.
2. Select appropriate treatment for patients experiencing CAR-T related cytokine release syndrome or neurotoxicity.

##### Management of Immune Checkpoint Inhibitor Toxicity in the Critically Ill Patient



**Joshua Arnold, PharmD, BCPS, BCCCP**  
Critical Care Pharmacist  
Ohio State University Wexner Medical Center,  
OH

1. Identify toxicities associated with immune checkpoint inhibitor therapy.
2. Describe appropriate strategies for the treatment of immune checkpoint inhibitor toxicity.

### BREAKOUT SESSIONS - 2 (SELECT 1 OUT OF 4)

#### 1. Immune Mediated Transfusion Reactions

##### Transfusion immunology for the critically ill patient



**Jennifer Muszynski, MD, MPH, FCCM**  
Associate Professor of Pediatrics  
Division of Critical Care Medicine  
Nationwide Children's Hospital  
The Ohio State University College of Medicine  
Center for Clinical and Translational Research  
Abigail Wexner Research Institute at Nationwide  
Children's Hospital, OH

1. Review immune-mediated transfusion reactions.
2. Outline potentially inflammatory and immune suppressive effects of blood product transfusion.
3. Place immunomodulatory effects of blood products in the context of the complex immunologic landscape of the critically ill patient.

##### Immune Mediated Transfusion Reactions



**Yunchuan Delores Mo, MD, MSc**  
Transfusion Medicine Associate Medical  
Director, Clinical Laboratory Support Services  
Medical Director, Laboratory Medicine and  
Hematology, Children's National Hospital, DC

1. Describe different types of immune-mediated transfusion reactions, including etiology, diagnosis, and management.

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### 2. The Immunologic Response to Traumatic Injury and Transfusion

#### The Immunologic Response to Traumatic Injury



**Timothy Plackett, DO, MPH; FACS**  
Clinical Associate, Division of Trauma, AMEDD Military-Civilian Trauma Team Training Program, University of Chicago, IL

1. To describe the early immunologic response to severe traumatic injury.
2. To describe the risk factors for an abnormal immunologic response following severe traumatic injury.
3. To describe immune modulating therapies to improve patient outcomes following severe traumatic injury.

#### The Immunologic Response to Traumatic Injury



**Joseph Posluszny, MD**  
Assistant Professor of Surgery (Trauma and Critical Care) Northwestern Medicine, Feinberg School of Medicine, IL

1. Understand the immunologic changes that occur following a traumatic injury.
2. Understand the impact of blood product transfusion on immune function and the effect on outcomes.

### 3. Extracorporeal Clearance Therapies

#### Therapeutic Plasma Exchange in the Critically Ill Patient with inflammation



**Nicole Zantek, MD, PhD**  
Medical Director, Special Coagulation Laboratory, Division of Transfusion Medicine, Department of Laboratory Medicine and Pathology, University of Minnesota, MN

1. Review the patient and procedure factors that should be considered in patients undergoing apheresis.
2. Discuss the use of therapeutic plasma exchange in the management of inflammatory states, such as autoimmune disorders, sepsis, and multiorgan failure.

#### CRRT-Based Therapies for Immune-Mediated and Inflammatory Diseases in Critically Ill Patients



**Tara Neumayr, MD**  
Assistant Professor of Pediatrics, Nephrology, and Critical Care Medicine Washington University in St. Louis, St. Louis, MO

1. Identify available modalities for extracorporeal immune and inflammatory modulation on CRRT platforms.
2. Identify the technical requirements, mechanisms, strengths, and limitations of the available modalities.
3. Analyze current published data on clinical use of available modalities.
4. Analyze the most pressing needs in research and technology development to optimize implementation of CRRT-based extracorporeal modalities of immune and inflammatory modulation.

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### 4. Cardiopulmonary Bypass and Ischemia-Reperfusion Injury

#### Inflammation and Pediatric Cardiac Surgery: Too much of a good thing?



**Alexis Benscoter, DO**  
Assistant Professor,  
Department of Pediatrics,  
Division of Cardiology, Cincinnati Children's  
Hospital Medical Center, OH

1. Review inflammatory response to CPB
  - Early phase Contact activation and biomarkers of inflammation
  - Late phase: Ischemia-reperfusion
2. Role of inflammation on outcomes .

#### Management of Inflammatory Response and Ischemia Reperfusion Injury After Pediatric Cardiopulmonary Bypass



**Chawki El-zein, MD, FACS**  
Clinical Professor of Surgery,  
Pediatric Cardiothoracic Surgery,  
University of Illinois at Chicago,  
Advocate Children's Hospital, IL

1. Discuss the different management options available to decrease morbidity and mortality from cardiopulmonary bypass induced inflammatory reaction and ischemia reperfusion injury after pediatric cardiac surgery.

### **BREAKOUT SESSIONS - 3 (SELECT 1 OUT OF 2)**

#### **1. Myocarditis: New Paradigms in Diagnosis, Management, and Treatment**



**Kory Lavine, MD, PhD**  
Associate Professor, Cardiovascular Division,  
Center for Heart Failure and Transplantation  
Center for Cardiovascular Research,  
Director Cardiovascular Precision Medicine  
Research Initiative, Washington University  
School of Medicine St Louis, MO

1. Describe clinical presentations and etiologies of myocarditis.
2. Understand strategies for diagnosis.
3. Discuss options for hemodynamic and electrical support.
4. Understand the role of imaging and endomyocardial biopsy in selecting disease specific therapeutics.

#### **2. A Multi-disciplinary Team Approach to Pediatric Immune Dysregulation: Challenges, Successes, and Lessons Learned**



**Lindsey Swigart, MSN, RN, CPNP-AC**  
PrIIME Nurse Practitioner and Clinical  
Coordinator, Pediatric Critical Care ,  
Ann and Robert H. Lurie Children's Hospital  
of Chicago, IL

1. Describe the initial motivation for and process of our approach to creating a multi-disciplinary immune dysregulation clinical service at Lurie Children's.
2. Share data regarding the utilization and outcomes of the clinical service.
3. Describe APP role in immune dysregulation patient care.
4. Highlight successes and challenges encountered by the clinical team to help inform others interested in similar efforts.

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## KEYNOTE ADDRESS

### Sepsis Induced Multiple Organ Failure Immuno-Phenotypes



**Joseph Carcillo, MD**

Professor of Critical Care Medicine and Pediatrics  
Children's Hospital of Pittsburgh, PA  
University of Pittsburgh Medical Center, PA

Upon completion of this activity, learners should be able to

1. Define and understand Immunoparalysis,
2. Define and understand Thrombocytopenia Associated Multiple Organ Failure,
3. Define and understand Sequential Liver Failure Associated Multiple Organ Failure
4. Define and understand Macrophage Activation Syndrome

## CRITICAL CARE JEOPARDY



**Moderator**

**Padmaraj Duvvuri, MD, MS**

Advanced Heart Failure and Transplant Cardiologist, Critical Care Medicine.  
OSF Saint Francis Medical Center, IL

Visit <https://www.sccmmwc.org> to participate in Jeopardy

**Scan the QR code to register**



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