ECMO COURSE

Organized by the APSA Surgical Critical Care Committee

Committee Chair: Dr. Julie Monteagudo
Committee Vice Chair: Dr. Brian Gray

May 5th, 2:00 PM – 6:00 PM

Maximum Enrollment: 42 participants
Minimum Enrollment: 28 participants

Registration Fee
Attending: $450
Trainee/Student: $250

Location
Chicago Sheraton Riverwalk, Chicago, IL USA
In-person only, virtual attendance is not available.

Target Audience
This course is designed for pediatric surgical trainees, critical care trainees, and pediatric surgeons seeking concentrated, practical training in ECMO management.

Course Format
Multi-station, hands-on simulation, and case-based learning
(6 small-group stations + 1 concluding group simulation)

Course Overview
After a brief introduction, participants rotate through six small-group stations led by expert faculty, followed by a culminating large-group simulation exercise. The curriculum focuses on cannulation and decannulation strategies, neonatal access, ECMO circuit troubleshooting, anticoagulation management, and ECPR principles. The course emphasizes interactive problem solving, hands-on simulation, and concise case-based discussion.

Station 1 — Case-Based: Decannulation Strategies

Learning Objectives

- Discuss weaning strategies for VA and VV ECMO
- Review approaches to clamp trials (VA > VV)
- Understand vascular reconstruction options for peripheral VA decannulation

Curriculum

Case-based review of decannulation readiness, weaning, trialing, and reconstruction.

Station 2 — Simulation: Neonatal Cannulation

Learning Objectives

- Approach to open VA and VV cannulation
- Approach to percutaneous VV in neonates and the role of echo/fluoroscopy

Curriculum

Hands-on neonatal cannulation practice with guided ultrasound and technical coaching.

Station 3 — Simulation: Circuit Construction, Bridge Building & Troubleshooting

Learning Objectives

- Describe ECMO circuit assembly
- Indications and techniques for building bridges
- Identification and management of common circuit issues
- Introduction to hybrid ECMO modes, VV-A, VA-V

Curriculum

Hands on, pump operation, bridge creation, and troubleshooting drills.

Station 4 —Case-Based: Femoral Cannulation

Learning Objectives

- Cannulation in sepsis
- Indications and technique for distal perfusion cannulas
- Heparin vs Bivalirudin protocols (handout)

Curriculum

Focused discussion of cannulation decision-making in complex pathologies.

Station 5 — Simulation: VV ECMO Troubleshooting & Emergencies

Learning Objectives

- Management of desaturation on VV ECMO
- Cannula positioning and repositioning strategies

Curriculum

Rapid-cycle troubleshooting scenarios and imaging-guided problem solving.

Station 6 — Case-Based: ECMO-CPR (ECPR)

Learning Objectives

- ECPR candidacy
- Key controversies in pediatric ECPR
- Cadence and choreography of the ECPR response

Curriculum

Structured case review with emphasis on timing, coordination, and team dynamics.

Final Session — Mega-Station / Integrated Simulation ("Bringing It Home")

Learning Objectives

- Integrate knowledge from all stations into a full-case ECMO scenario
- Demonstrate collaborative problem solving in a high-stakes situation

Curriculum

Six sub-scenarios requiring each group to apply skills from their earlier stations; debrief as a unified team.