



Message from the President

In the early hours of this morning, we placed a young woman on ECMO for COVID-19 myocarditis. A woman who had caught COVID-19 once before and received mRNA vaccination four times.

Just like me. Perhaps just like you.

Now she is on ECMO with no effective left ventricular ejection while I sit here writing. She is half my age. It's not fair. The pandemic is down but not out.

Yet ECMO gives her a chance, without which she would already be dead, and this reminds me of how far we've come in the last few years. The COVID-19 pandemic demonstrated both the role of ECMO in dealing with emerging infectious diseases and the importance of ELSO, rapidly curating vital data on critically ill patients.

At the time of writing, the ELSO Registry contains details on 198,422 patients who were supported on ECMO, 16,714 of them for COVID-19. This was only possible because of all the work that you - the ECMO community - do, collecting individual center data so that all of us can come together and deepen our understanding of when and how we should best use ECMO.

As national and global fault lines crack open and threaten our dreams of a halcyon future, I am strengthened by the thought that we in the ECMO community can transcend these societal fractures through a common goal: An ardent desire to heal our patients, irrespective of their background or creed. Long may this unite us.

Graeme MacLaren, President, ELSO



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Committee Roundup

Registry Committee

New Changes to the ELSO Registry

The April updates to the ELSO Registry brings some long-awaited changes that ELSO is excited to announce. 2023 brings a number of exceptionally meaningful upgrades to the Cardiac Addenda and main ELSO Registry. These upgrades include:

- Full update of the Cardiac Addenda to better characterize adult cardiac ECLS in addition to congenital heart disease
- Neonatal respiratory diagnosis selection tool, which guides the user through a self-selecting pathway of clinical indications, populating the most appropriate ICD-10 codes as primary indications and sub-categorizations.
- Retirement of the Severity Score Addendum
- Addition of a separate cannulation tab to detail changes made to cannulas during the course of an ECLS run

New ELSO Registry reports was released this month – this will be our first look at 2022 data.

<https://www.else.org/registry/datadefinitions,forms,instructions.aspx>

Conferences Committee

Registration is now open for the 34th Annual ELSO Conference!!

The Conference Committee is working on an exciting program for everyone with updates on latest research, state of the science in ARDS, Artificial Intelligence in ECMO, ECPR, research funding, debates and much more.

Hands-on Simulation Course: Step 2 Offering - September 27, 2023

- Adult ECMO Step 2 Certification Course
- Neo Peds ECMO Step 2 Certification Course

Pre-Conference "*ECMO Management and Physiology*" - September 28, 2023

Conference "*Inspiring Innovation*" - September 29 - October 1, 2023

Highlights:

- State of the Art in ECPR
- Life after ECMO
- What's hot in device development
- State of the Science in ARDS
- New this year: Transitioning from ECMO in Advanced Cardiopulmonary Disease - ELSO / ISHLT joint session





Event: SEECMO Conference

Location: Gainesville, Florida

Dates: May 19-21, 2023

Registration Information: <https://seecmo2023.cme.ufl.edu/register/>

Event: 34th Annual ELSO Conference

Location: Seattle, Washington

Dates: September 28 - October 1, 2023

Registration is now open!

ELSOConference@elso.org

Event: AP ELSO Conference

Location: Seoul, South Korea

Dates: November 2-4, 2023

Registration Information: <http://apelso2023.org/>

As a reminder, AP ELSO and LATAM ELSO conferences alternate years; LATAM ELSO will be in Buenos Aires, Argentina in 2024.

The latest information on ELSO & Collaborative Meetings can be found [here](#).

Education Committee/ELSO Academy

ELSO – Adult ECMO Certification (E-AEC) Exam

ELSO has outlined standardized educational criteria and launched an online application process via ELSO Academy for ECMO clinicians who have demonstrated satisfactory completion of criteria listed on our website. This journey is designed to be inclusive of the entire ECMO interprofessional team. Certification is valid for three years; upon which time a renewal can be pursued to maintain certification. For additional information, please visit:

<https://www.elso.org/Education/certificationexam.aspx>

ELSO Center Certification

ELSO has developed a Center Certification Task Force that includes global representation. This task force held their first meeting in March, with Dr. Bartlett, himself, very involved in the process. Please check our website for updates as they become available.

ELSO Foundations

ELSO Foundations: Adult ECMO Training Course is a self-paced ECMO course consisting of 53 modules, covering over 80 learning objectives which are anchored in the foundational concepts that will allow practitioners to develop, strengthen, and refine clinical skills related to ECMO patient care skills. ELSO is pleased to announce the **Spanish translation** is available now!

Registration: <https://www.elso.org/ecmo-education/elso-ecmo-academy.aspx>



ELSO Training Courses

On April 4th, ELSO held it's first **Virtual Neonatal and Pediatric ECMO Training Course** for 2023. There were over 120 students in attendance.

The ELSO Neonatal and Pediatric ECMO Training Course was designed to provide individual practitioners up-to-date standards of practice & evidence-based recommendations to optimize clinical decision making that are rooted in the foundations of ECMO clinical management.

Completion of the course does comply with Step 1 requirements for the ELSO – Neonatal & Pediatrics ECMO Certification Exam (E-NPEC) to be launch in the next 8-12 months! This exam is being designed to reflect a global standard in foundational ECMO education for neonatal and pediatric practitioners.

ELSO is pleased to announce the ECMO Adult Simulation Courses were held at the new ELSO Education/Simulation Center in Ann Arbor, MI on April, 12-13, 2023 and April 14-15, 2023.

This is a major milestone for ELSO and we could not be happier to have a space to train and educate our ECMO providers. We thank you for all of your support and could not have done it without you!





REGISTER NOW >



Upcoming ELSO Training Courses

We will be announcing more new courses soon. Don't miss anything by checking [here](#).

Event: ECMO Cannulation Workshop (1-Day Workshop)

Date: June 9th, 2023 (Session 1) and June 10, 2023 (Session 2)

Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA

Event: ELSO Extracorporeal Membranous Oxygenation (ECMO) Adult Simulation Course

Dates: November, 8-9, 2023 (Session 1) November 10-11, 2023 (Session 2)

Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA

The Award of Excellence Committee



The Award of Excellence Committee are reviewing 2024 applications and centers will be notified in July regarding results.

For questions regarding your application contact: Award@elso.org

ELSO Publications

ELSO has great publications available - with more on the way!

- The new ELSO Red Book - 6th Edition
- ECMO Specialist Training Manual - 4th Edition (5th Edition in development)
- ECPR and Resuscitative ECMO
- Neonatal and Pediatric ECMO Simulation Scenarios - developed in partnership with IPSS
- A Korean translation of the ELSO Red Book - 5th Edition
- Spanish translations of the ELSO Red Book - 4th Edition and ECMO Specialist Training Manual - 4th Edition

We will soon be releasing a new monograph:

- Post-Cardiotomy ECLS and other Temporary Mechanical Circulatory Supports in Adult Patients, with Roberto Lorusso as Senior Editor and a robust team of international authors.

Please check our publications website for the full list: <https://www.elso.org/Publications.aspx>



Nominations & Membership Committee

ELSO Communities

As a global nonprofit organization, we wanted to be able to provide a communication tool that was accessible on cell phones, an app that was globally available (or close), free, and had encryption technology for secure messaging. We selected WhatsApp as the platform for ELSO Communities for these reasons. It is not perfect, but a good way to start.



To join a community, download WhatsApp on your phone. Enter the link(s) below for the communities you would like to join. You should be able to join from there. These are designed to be a support for our members that want to connect, collaborate, and support each other on a topic.



New ECLS Program: <https://chat.whatsapp.com/HER8SYR5NwfBPlmLaYqEnE>



Adult Cardiac: <https://chat.whatsapp.com/GMLS4xcwmUX1yIlxKQN6kB>



Adult Respiratory: <https://chat.whatsapp.com/EUlug1fGt1pHqtcF7djHA4>



Coordinators: <https://chat.whatsapp.com/IYEs9mKaeRc6Ab5dv2FIPp>



Platinum Mentors: <https://chat.whatsapp.com/DJTbMVjzH6v3fyy9QRYKUA>



Neo/Peds ECMO: <https://chat.whatsapp.com/LNG9O8RqB715X8lzuZOFjy>

FELSO nominations are now open until June 30, 2023

The ELSO community can now make nominations for induction to FELSO, the honorary designation recognizing extraordinary contributions to the art and science of ECLS. Applications will receive consideration by the FELSO Nominations Committee. Please see the application below for more information. Self-nominations will not be accepted.

[FELSO Nomination Form 2023](#)

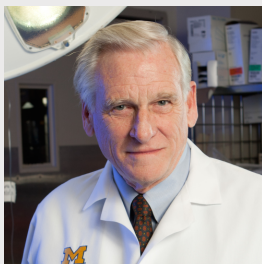
For more information please email FELSO@elso.org

Research Committee

Applications for ELSO Research Grants for 2024 to open on June 1st. Please check the website for more details as they become available. [Apply here.](#)

For questions on grants please email ELSOResearchGrants@elso.org

Bedside with Bartlett



Robert Bartlett, MD

*Founder, Board of Directors Emeritus,
ELSO Professor Emeritus of Surgery
University of Michigan*

This case represents the progressive hourly dilemma between heart resuscitation and brain resuscitation which occurs often in ECPR cases, and the inherent ethical dilemmas that accompany these situations.

A 14-year-old boy has been on ECMO for cardiac arrest following approximately one hour of no circulation aside from CPR.

Day three: cardiac status is improving poor left ventricular function with pulsatility at 50% cardiac output ECMO flow (2 L per minute). Lungs are clear. Decreasing the flow results in hypotension and left ventricular distention on Echo.

Brain status is minimal: no cortical function, there is a corneal reflex but no dolls eyes, some cough reflex, no response to auditory stimuli, general edema on CT scan.

What should you do? Heart function will probably improve to allow coming off ECMO in a few days. Brain function is very unlikely to recover to any normal status. We all know of patients who recover totally from deep coma after weeks or months but the chance of this happening in this patient is small. We do not have a data bank to make any prediction about Brain recovery although much of this information is in the ELSO registry and we should analyze it. For this particular patient, today is an important window. If we decide to terminate ECMO because of presumably permanent severe brain damage, turning off ECMO will accomplish that. If we have done a good job of discussing all the possibilities with the family during the case, they should be prepared for this option. The goal of ECMO in ECPR is only about brain function, not cardiac function.

Day 7: ECMO was not turned off on day three and ECMO was removed on day five with good cardiac function. The patient is now on a ventilator at rest settings. Pupils respond very sluggishly. There is occasional ineffective breathing effort when the PaCO₂ is greater than 55. EEG shows extensive diffuse slowing with occasional burst suppression pattern.

What should you do? We have created this terrible situation for ourselves and for the family. Now we wish we had taken advantage of the ECMO window at three days. However, this is a fairly common problem in ICUs. What are our responsibilities to the patient and the family? The options are partly ethical and partly legal. The patient does not meet criteria for brain death so simply turning off life support for organ donation or causing cardiac arrest is not an option. Turning off life support because the patient has an untreatable medical condition, and any further treatment is futile, is the best option. Your hospital should have a full protocol describing the methods. If the kidneys and liver have recovered to the point of good function, donation after cardiac death protocol is a possibility. If the family or others on the team object to withdrawing life support your hospital should have a protocol to address that situation. Should a court become involved, you may be told to continue all treatment.

What can you do at your institution to navigate these issues? Please send your recommendations to newsletter@elso.org.

Patient Story: Melissa Laney's Story



Melissa seeing her son for the first time in 45 days, outside, on ECMO

Melissa Laney, a 34 year old female, is an ECMO survivor and a double lung transplant recipient. She is a mom to a son she adores, enjoys painting and church work, and works in the office at a public school in her home town of Cochran, GA.

Melissa was unvaccinated and diagnosed with COVID-19 on 8/6/2021. On 8/11/2021 she was admitted to Dodge County Hospital and intubated on 8/15/2021. After proning trials did not improve her respiratory status we, Northside Hospital Gwinnett, were contacted for potential ECMO. Due to weather constraints she was not able to be transported until the next day. On 8/21/2021 she arrived at our facility with oxygen saturation in the low 60's. We made the decision to cannulate her for VV ECMO.

Melissa had a tracheostomy on 8/25/2021 and began sitting on the side of the bed the next day. Melissa's course was complicated by multiple pneumothoraxes with chest tube placements.

On 9/13/2021 she had a large hemothorax that drained 1.5L after chest tube placement. On 9/14/2021 she was evaluated and accepted to a lung transplant center, but due to bed availability, she needed to stay at our hospital until a transplant bed became available. The lung transplant center also wanted her up and walking prior to transfer.

Melissa had major bouts of depression during this time and was losing her will to continue. Northside Hospital Gwinnett team made the decision to try Ketamine infusions for her, which turned her state of mind around and gave her the will to fight to once again see her son and return home. On 9/21/2021, due to very low tidal volumes on the vent, we made the decision to place her on a trach collar, thus making her much more comfortable than being on the ventilator.

While still waiting for a transplant bed, the team began reaching out to other hospitals for the possibility of acceptance for a transplant as this was the only chance of survival. On 9/29/2021 Tampa General accepted Melissa and had an open bed, so the transfer process began. We were proud to send videos of Melissa walking 55 feet at this time to the team down in Tampa. The one thing Melissa wanted more than anything was to see her son. Due to COVID restrictions, children were not allowed in the hospital. The team arranged for Melissa to have an outing outside and reunite with her son. Seeing her son gave her a mental boost to continue her fight for life.

The Northside Hospital Gwinnett team flew Melissa to Tampa on 10/1/2021. She had a VATs procedure of the right lung on 10/4/2021 with 80% re-expansion. On 10/26/2021 she was officially listed for transplant, and after 74 days of ECMO, she received a bilateral lung transplant on 11/2/2021. After several months of recovery she was able to return home in early spring of 2022 and is back at work and enjoying her life.

ELSO would like to thank Melissa Laney and Charlie Nix, ECMO Coordinator, at the The Northside Hospital Gwinnett for sharing such an amazing story!



Do you have a patient story that you would like to share in the ELSO Newsletter? Please e-mail: family@elso.org

Survey Alley

Anticoagulation management and Monitoring in ECMO: An International Survey

The primary aim is to understand how different institutions care for adult and pediatric patients that undergo ECMO therapy, including the type of equipment used, anticoagulation drugs and monitoring practices.

https://cmich.co1.qualtrics.com/jfe/form/SV_3m9WobUvIIIgM0S



Thank you for participating!

Katherine Regling, DO, Assistant Professor of Pediatrics, Central Michigan University



**INTERNATIONAL
NEONATAL AND PEDIATRIC
ECLS SPECIALIST HEALTHCARE
PROFESSIONAL MANAGEMENT
AND MOBILISATION RESEARCH**



We invite all Healthcare Professionals
looking after **children** receiving ECLS support
involved in their **daily bedside ECLS circuit care management!**

**Scan the QR code and access the survey from
your laptop, tablet, or mobile phone!**

Join hundreds of healthcare professionals worldwide
and share your great experience: it's vital to us!

Thank you!



Marta Cucchi

Ph.D. Fellow at MUMC+, MSc, TDN, BSN
ECLS Specialist Pediatric Critical Care Nurse
Maastricht University Medical Centre (NL)
Queensland Children Hospital (AU)

ECMO Equipment - Bridging the Gaps

From time to time, ECMO equipment can have availability challenges. During the pandemic, ELSO developed the supplies exchange (see below) as a tool to help centers that were having such difficulties. The exchange is intended for addressing needs outside of normal business operations. Integrated delivery between centers has been tested in the US and is available there.

There are other factors that drive access to ECMO equipment issues. As we become aware of these issues, we may highlight them if there are means for others in our community to be of help. In these cases, ELSO can assist with device developer communication and center-to-center or region-to-region communication.

In March, an Urgent Medical Device Correction notice was issued by Getinge on the HLS Sets Advanced. The notice can be found here: <https://news.getinge.com/us/urgent-medical-device-correction-hls-set-advanced>; and an FDA announcement on the topic is available [here](#).

Other equipment needs: Dr Tolusha Harischandra has several needs in Sri Lanka that are broader than ECMO equipment. If you are in a position to help, please do reach out to her at tolushah@gmail.com. These include: **Sutures** (2/0 proline on straight needle (for skin suturing); 5/0 Prolene (13mm needle), double arm; 4/0 prolene (20mm needle) double arm; 6/0 Prolene (13mm needle (3/8) (75cm) double arm

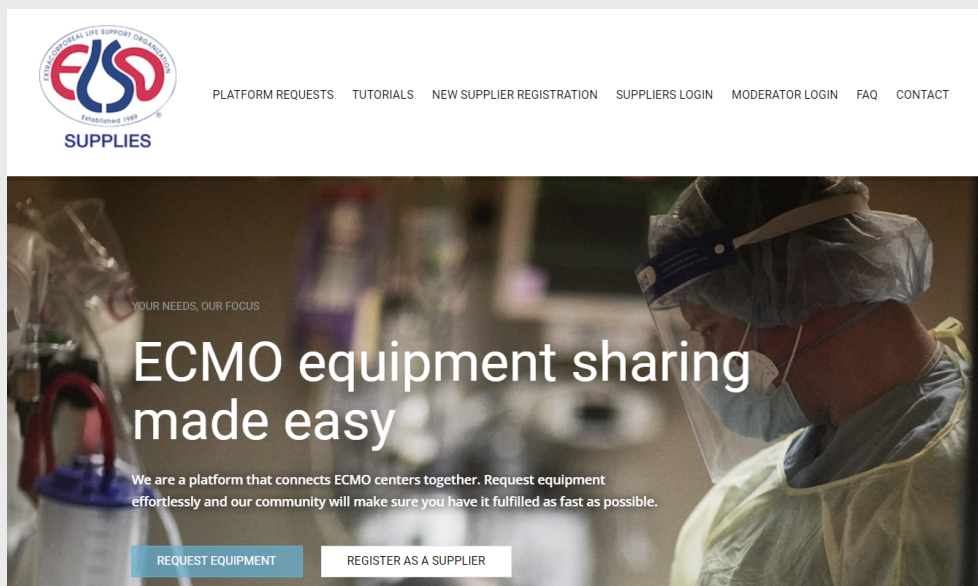
Drugs (Pancuronium , Protamine (Leo), Dobutamine vials)

Aortic Grafts (Sizes 28,30 32, 34)

Aortic Valves (Tissue and mechanical) size 19

Other: Pacing wires, Bone Wax, 14 Fr Urinary catheters, Powder free gloves (size 6)

Should others have needs that you would like to make us aware of, please reach out to supplies@elso.org for communication options.



ECMO Around The World

LAELSO Updates

After the 5th LATAM Conference in Lima, Peru 2022, there is great enthusiasm in our Latin American community and we have already started preparations for the 6th Latin American conference of ELSO LATAM in Buenos Aires Argentina, November 14th – 16th, 2024.

We continue with our bi-monthly webinars with interesting topics presented by each country from our Latin American region.

See you in the next newsletter!!



APELSO Update

Less than 200 days to APELSO 2023 in Seoul!

Registrations are now open and programme overview is available here:
<http://apelso2023.org/sub03/sub01.php>

Keep an eye on APELSO website and social media platforms for announcements, including when the call for abstracts opens.

APELSO 2023
SEOUL | KOREA

55th KTCVS Annual Meeting

6th APELSO 2023 & 55th KTCVS Annual Meeting
"Post Pandemic, New Standards"

WEBSITE | REGISTRATION

Visit our website and Follow our SNS to get news earlier wherever you are!

Apelso Seoul | APELSO 2023 Korea | apelso2023

For Inquiries | Email: secretariat@apelso2023.org

Chief Executive Officer Remarks

Since our February Newsletter, ELSO Chapter Meetings have been a huge success and it has been wonderful to see our global community in person again. In March, SWAAC ELSO held their Chapter Conference in Ludhiana, Punjab. EuroELSO Congress just concluded in Lisbon, Portugal last week.

The shared enthusiasm of the ELSO community is pervasive in India, Europe, and around the world. In every setting, I am in awe of the work that our community does to take better care of the world's sickest patients. Each gathering had multiple education workshops, a robust scientific meeting, and networking opportunities that build connection, collaboration, and inspiration. Congratulations to the teams that organized these sessions! The enthusiasm you inspired will be felt for a long time.

Looking forward, we have ambitious goals for 2023 - some work behind the scenes, while some in the limelight thanks to what you continue to share with us to make your experience with ELSO more impactful and meaningful. These are the things we only can do as a strong, connected, global family - which we are.

Please make good use of the ELSO WhatsApp communities - invite your colleagues to join the conversation. In the months ahead, we will be embarking on improvements to the registry, data visualization, updated guidelines, and more initiatives inspired by your interests. Please enjoy the latest monograph: Post-cardiotomy ECLS, available just now on the ELSO website under publications. Congratulations to Roberto Lorusso and colleagues for a first of its kind contribution to our field.

I look forward to seeing you soon in person and, as always, hearing from you anytime!

Christine Stead, CEO



Clockwise, from top Left: Huda Alfroudi, Christine, Matt Paden, Peter Rycus at SWAAC ELSO; Peter Rycus with Roberto Lorusso with the first copy of the Postcardiotomy ECLS Monograph at EuroELSO; Poonam Malhotra, Huda Alfroudi, and Christine; Nick Barrett welcoming remarks at EuroELSO; Peter Rycus, Velia Antonini, Liz Moore, and Christine in Lisbon, Portugal.



The Extracorporeal Life Support Organization

Our Mission

Providing global leadership in extracorporeal life support through innovation, advocacy, and advancing knowledge.

Our Vision

ELSO will be the premier organization for the advancement of extracorporeal life support throughout the world.

Guiding Principles

Innovation

Seeking to identify and promote advances for the application of extracorporeal therapies.

Expertise

Bringing together world leaders in the care of critically ill patients for collaboration to advance quality of care through education and publication.

Clinical Support

Maintaining a comprehensive registry of data to assist in reducing morbidity and improving survival of patients requiring extracorporeal therapies.

Community

Fostering communication and collaboration among professionals who apply advanced technologies in the treatment of refractory organ failure.



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