



NEWSLETTER

Editor: Kennethia Banks

Message from the President

Welcome to the December 2023 ELSO Newsletter, wrapping up what has been a very successful year for our organization.

First, the ELSO Registry captured its 200,000th patient earlier in the year, thanks to so many centers submitting invaluable data. The importance of this resource can be measured in many ways, not least of which is the number of annual publications using ELSO Registry data. For example, in 2010, there were 5 such publications, in 2015 12, in 2020 26, and in 2022 over 40, reflecting the increasing interest and importance of ECMO to clinicians and researchers.

Second, over 100,000 patients in the Registry have received ECMO and survived to hospital discharge (<https://www.elseo.org/registry/elsoliveregistrydashboard.aspx>). Reflect on that for a minute: Over 100,000 people have survived critical illness through the use of this technology, patients who would have most likely died without it. While these thresholds in and of themselves are not of particular importance, they do provide a sense of scale and help fuel our work. They also provide another opportunity to thank and pay tribute to the pioneers of ECMO, in particular the founder of ELSO, Dr Robert Bartlett. It must be quite something to reflect that your life's work has saved so many, particularly young patients with their lives ahead of them. I hope this inspires the next generation of clinicians to similarly heroic feats of imagination and science.

ELSO Registry Chair Joseph Tonna, immediate Past Registry Chair Ryan Barbaro, and co-authors have written the ELSO 2022 Registry Report, which is currently undergoing peer review and which describes in detail the data in the Registry. It will be a valuable reference in the future and we look forward to seeing it published and freely available to everyone. Importantly, leaders from every ELSO member center who responded to our emails will be acknowledged and thus appear as collaborators for this publication in medical search engines such as PubMed. This was done twice before during the COVID-19 pandemic but should set a new standard for the future, reflecting that Registry data is not collected by a small group of researchers but by thousands of people across the planet.



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Third, ELSO published several new resources in 2023. These included, (i) a monograph on adult post-cardiotomy ECLS, (ii) a monograph on neonatal and pediatric ECMO simulation scenarios, (iii) a translation of the 5th edition of the Red Book into Korean, and (iv) an electronic version of the 6th edition of the Red Book. All of these and more can be purchased via the ELSO Publications page (<https://www.else.org/publications.aspx>).

Fourth, ELSO opened its own Education and Training Center in Ann Arbor this year. ELSO Foundations, its online training course, has been adopted by many learners and over 1600 clinicians have successfully completed it. A comparable program for neonatal and pediatric practitioners is in development and should go live next year.

Fifth, our annual conference this year was the most popular in ELSO's history, with over 1500 attendees coming to Seattle. Next year, our conference will be in Detroit, only a cab ride away from the home of ELSO, Ann Arbor, MI.

All of this success did not come easily and is the result of a massive amount of work by many people, including the ELSO Board of Directors, Steering Committee, Strategic Advisory Council, ELSO Chapter Chairs and Steering Committees, and all the different subcommittees. The ELSO Office, led by the indefatigable Christine Stead (CEO) and Peter Rycus (Executive Director), does far more with finite resources than we could ever reasonably expect of it. Finally, there are all the directors, members and coordinators of our organization's member centers, without whom ELSO would not exist.

Thank you, everyone, for a great year. Let's hope we have more successes to toast to in 2024.

Graeme MacLaren, President, ELSO

*Happy
Holidays!*





COMMITTEE ROUNDUP

Conference Committee

We're still so excited about the success of the 34th Annual ELSO Conference, held in Seattle this fall. With over 1500 attendees from around the world and innovative scientific sessions covering the latest in research and approaches to patient management delivered by global experts in ECMO, this was truly a conference to remember! Luckily, for those who were unable to make it (or for those who were and want to watch or review additional content) the Conference and Pre-Conference are now available virtually (with CME through January 25, 2024).

It has been a great honor to serve as Conference Chair these past 3 years and I am looking forward to seeing what incredible advancements in ELCS and in the care of our patients the ELSO community can achieve together. – Cara Agerstrand

Welcome to Natalie Rintoul, incoming Conference Committee Chair!

ELSO & Chapter Meetings

Event: 34th Annual ELSO Conference

Location: Virtual

Dates: October 13th - January 25, 2024

[Register Here!](#) [Agenda](#)

Event: 10th Annual AP ELSO Conference

Location: Beijing, China

Dates: June 20th - 23rd, 2024

Event: 10th Annual SWAACELSO Conference

Location: Kuwait City, Kuwait

Dates: February 15th -17th, 2024

Registration Information:

<https://www.swaacelso2024.com/>

Event: 35th Annual ELSO Conference

Location: Huntington Place, Detroit, MI

Dates: September 28th - October 1st, 2024

Event: 12th Annual EUROELSO Conference

Location: Krakow, Poland

Dates: April 24th -27th, 2024

Registration Information: <https://euroelso-congress.com/>

Event: 6th LATAM Conference

Location: Buenos Aires Argentina

11/14/2024 - 11/16/2024

Registration Information: <http://www.elsolatam2024.org>

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

**35TH ANNUAL ELSO CONFERENCE
DETROIT, MI
SEPTEMBER 28TH - OCTOBER 1ST, 2024**

Detroit, Michigan During the Holidays



Photos provided by: Christine Stead and Peter Rycus





Education Committee/ELSO Academy

The education committee held its final ECMO adult simulation courses and cannulation workshop for 2023 in Ann Arbor, MI, November 8th –13th, 2023. All courses were sold out and we look forward to hosting more in 2024. All scheduled courses for 2024 are currently posted on the website. Two significant publications of our education efforts were achieved:

Adult ECMO Curriculum and Curriculum Development Process: Badulak J, Rubin J, Moore E, Cunningham M, Ilgen J, Coruh B, Zakhary B. *Development of the Extracorporeal Life Support Organization International Adult Extracorporeal Membrane Oxygenation Curriculum: Creation of Initial Learning Objectives via a Modified Delphi Process*. Chest Crit Care. 2023.

Results of Global Survey on ECMO Education and Certification Practices: Bhoumesh P, Said A, Justus A, Abrams D, Pham T, Antonini M, Moore E, Shekar K, Zakhary B. *An International Survey of Extracorporeal Membrane Oxygenation Education and Credentialing Practices*. ATS Scholar. 2023.

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.else.org/Education/certificationexam.aspx>

More than 350 have taken the Adult ECMO Practitioner Certification.

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. More than 1600 people have taken the ELSO Foundations Course.

- The Spanish translation version of the Adult ELSO Foundations course has been very popular.
- ELSO Foundations: Neo/Peds ECMO Training Course is under development.



UPCOMING COURSES

ELSO Extracorporeal Membranous Oxygenation (ECMO) Adult Simulation Course at SCCM

Dates: January 19th - 20th, 2024

Location: Phoenix, AZ

ELSO Extracorporeal Membranous Oxygenation (ECMO) Neo/Peds Simulation Course

Dates: March 13th-14th, 2024 (Session 1) March 15th-16th, 2024 (Session 2)

Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA

ELSO Extracorporeal Membranous Oxygenation (ECMO) Adult Simulation Course

Dates: April 2nd-3rd, 2024 (Session 1) April 4th-5th, 2024 (Session 2)

Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA

ECMO Cannulation Workshop (1-Day Workshop)

Dates: April 6th and April 7th, 2024

Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA



ELSO Extracorporeal Membranous Oxygenation (ECMO) Adult Simulation Course

Dates: May 8th-9th, 2024 (Session 1) May 10th-11th, 2024 (Session 2)

Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA

ELSO Neonatal and Pediatric ECMO Training Course

Date: June 3rd, 2024

Location: Virtual

Time: 2:00PM - 4:00PM EST

ECMO Cannulation Workshop (1-Day Workshop)

Dates: June 21st, June 22nd and June 23rd, 2024

Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA

ELSO Extracorporeal Membranous Oxygenation (ECMO) Adult Simulation Course

Dates: November 7th-8th, 2024 (Session 1) November 9th-10th, 2024 (Session 2)

Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA



Quality Committee - Award of Excellence



Applications for the Center for Excellence in Life Support and the Path for Excellence in Life Support will be live January 1st on [elseo.org](https://www.elseo.org). The Application portal will remain open for application submission until the deadline of March 1, 2024. Until the Award website is live January 1st, you may use the Application Worksheet to begin composing your answers. It is available on the ELSO website under "Before you apply". We recommend developing a team that includes physician leaders, nursing leaders, quality analysts, research coordinators and, of course, the ECMO team to collaborate on writing the application. We have developed a tool that should help any center review their program and how they may answer specific questions. Click [HERE](#) to find the "Award Evaluation and Improvement Tool".

New Centers of Excellence will be posted on the website in January 2024. Congratulations!

Research Committee

The Research Committee is taking shape! We are happy to share that a Nucleus Team has formed to assist with shaping research priorities for ELSO. Thank you for your leadership!

Luigi Camporota (UK)	Ravi Thiagarajan (US)	Philippe Gaudard (France)
Xiaotong Hou (China)	Darryl Abrams (US)	Cara Agerstrand (US)
Leen Vercaemst (Belgium)	Aparna Hoskote (UK)	Jordi Riera (Spain)
Gary Schwartz (US)	Graeme MacLaren (Singapore)	Jonathan Haft (US)
Ram Ramanathan (Singapore)	Lakshmi Raman (US)	Christian Bermudez (US)
Leonardo Salazar (Colombia)	Joe Tonna (US)	
Shinichiro Ohshimo (Japan)	Justyna Swol (Germany)	
Jae-Seung Jung (South Korea)	Sung-Min Cho (US)	
Pranay Oza (India)	Akram Zaaqoq (US)	
Ahmed Rabie (Saudi Arabia)	Giles Peek (US)	
John Fraser (Australia)	Dominik Wiedemann (Austria)	
Giacomo Grasselli (Italy)	Tom Brogan (US)	
Ryan Barbaro (US)	Marc Maybauer (US)	
Dirk Donker (The Netherlands)	Matteo Di Nardo (Italy)	
Jan Belohlavek (Czech Republic)	Bhavesh Patel (US)	



EuroELSO is leading an Infection Working Group, chaired by Jordi Riera. The INF-ECMO study is extending a warm welcome to any ELSO centers that would like to participate. Aims of the study are to: comprehensively investigate the incidence, microbial etiology, resistance patterns, risk factors, and impact on outcomes of nosocomial infections during ECMO. Please contact Vittorio Scaravilli (vittorio.scaravilli@unimi.it) and Giacomo Grasselli (giacomo.grasselli@unimi.it) for more information or see: <https://infecmo.unimi.it/>



Publications Committee

ELSO has a growing list of publications available.

- The ELSO Red Book – 6th Edition
- ECMO Specialist Training Manual – 4th Edition (5th Edition in development)
- ECPR and Resuscitative ECMO
- 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.
- 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



Visit our website for the full list of available publications: <https://www.else.org/Publications.aspx>

Registry Committee

Greetings ELSO Community! We have some exciting announcements from the Registry Committee. First, we are proud to announce, as many of you already know, that we have completed the 2022 ELSO Registry Report (data through year end 2022, prepared/finalized/submitted during 2023). This report is the first since 2016, and importantly, because these reports are **only possible** through the effort of countless individuals at each center, caring for patients, and entering their data, we were able to include center designated representatives (Director, Coordinator) as **collaborating authors**, meaning that your names will appear in PubMed and be searchable. We are so grateful to you all for the work you continue to do and thankful for the efforts of the ELSO leadership team who did the work to get these names together and submitted. We look forward to sharing the finalized published manuscript when it comes out!

Secondly, the Quality Sub-Committee is proud to announce the release of two new reports, using new visualizations, within the Quality Platform (ArborMetrix). These reports are a new step up in the utility of data, informed by a committee of advisors drawn from across ELSO Centers. The reports provide a visualization and measurement of complication rates over time, at your center. Further, the reports enable you to identify a time point when an intervention or change may have happened at your center, and then see the trend in complications prior to and then after that identified point, with associated statistical calculations. We hope this report will be useful as you share your outcomes with your team, administrators, and colleagues, enabling you to visualize the effect of various quality improvement interventions on outcomes that you select.



Registry - continued

Data Submission Deadline: January 10, 2024. Please submit your data for the next freeze.

COVID-19 Addendum

ELSO will be sunsetting the COVID-19 Addendum in April 2024. COVID-19 will continue to be tracked using ICD-10 codes; however, the additional information in the addendum will close.

Nominations & Membership Committee (N&M)

The nomination & membership committee (N&M) is currently working on an online process for a bi-annual ELSO committee application tool with a target launch for early spring 2024.

The ELSO WhatsApp communities have been active and are thriving. ELSO welcomes the continue participation.

The final transition for the new incoming N&M committee chair from Jenelle Badulak to Pablo Sanchez will commence January 1, 2024.

The N&M is looking for international chapter representatives to join as a committee members. Interested? Click [HERE](#)

Development for a membership dashboard is underway.

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. To join a community visit the ELSO [website](#). You will be required to download WhatsApp on your phone. Communities are designed to be a support for our members that want to connect, collaborate, and support each other on a topic.

ELSO has several communities for you to participate in including New ECLS Program, Adult Cardiac, Adult Respiratory, Coordinators, Directors, ECMO Equipment, Procedures and ECMO, Platinum Mentors, Neo/Peds ECMO, and ELSO ECMO Patients & Families.

BEDSIDE WITH BARTLETT



Robert Bartlett, MD

Founder, Board of Directors Emeritus

ELSO Professor Emeritus of Surgery University of Michigan

Case Study

At a recent monthly team meeting a resident described the results of the Rush Medical Center VV adult ECMO protocol. The results are outstanding. One of the components of the protocol is early extubation and spontaneous breathing. *"We tried to do that, but the patient became so agitated he had to be re-intubated and sedated on three different attempts. Are we doing something wrong?"* - remarks submitted to me from Rush.

Yes, you are not following the Rush protocol. Waking the patient up, especially with extubation, requires enough hemoglobin to support the oxygen requirements during the increased metabolic activity of waking up and spontaneous breathing. Rush starts with 12gm/dL and increases as necessary to get the membrane lung output O₂ content to the normal level of 20 cc/dL.

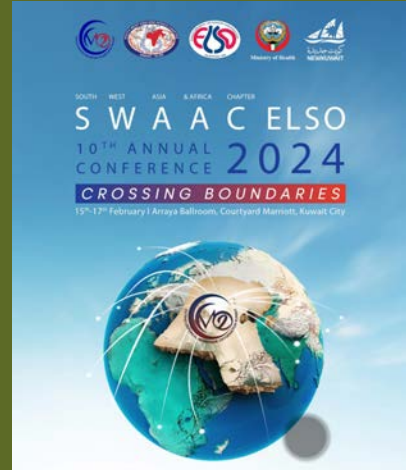
What is your circuit outlet O₂ content? Do you know? You have to increase the sweep to normalize PCO₂. Your patient may be fluid overloaded and very anemic, possibly requiring albumin, diuresis, and transfusion. (Don't worry, it's safe. just do it.)

The Rush physiologic protocol produces 67-85% healthy survival in adult respiratory support patients, including 137 COVID-19, compared to 58% in the Registry and 52% with COVID-19 (see Tatoes, ECMO on Pubmed for the 7 publications). The protocol includes 4 elements which are interdependent: Early extubation and activity, full ECMO support (Hb >12), RA to PA access, and wait for recovery (weeks to months). To use the Rush protocol in your center you must follow all 4 components. The protocol was designed by Lauren Michalak, Erica Bak, and Mike Kotwas and implemented 6 years ago by the Program Director, Tony Tatoes.

ELSO CHAPTER UPDATES: ECMO AROUND THE WORLD

SWAAC ELSO UPDATES

Planning and development is underway for the 2024 SWAAC ELSO Conference located in Kuwait City, Kuwait February 15th - 17th, 2024. Hope to see you there! [Register HERE!](#)



SWAACELSO enjoyed a robust and academic 2023 last trimester in Oct-Dec 2023. Three big ECMO Simulation workshops were held at Cairo, Egypt AIIMS, New Delhi, India; RVCC, Mumbai, India and More than 804 clinical ECMO's were inserted in the SWAACELSO region of the 25 ECMO centres

from India, AIIMS led the way for V-A paediatric ECMO and RVCC Mumbai and MGM Hospital, Chennai for VV ECMO. If the past is glorious, the upcoming events in the next 3 months are even more interesting. There are two SWAACELSO events in January 2024 and three in February - March 2024. Looking forward to more greener pastures and indications for ECMO with SWAACELSO intensivists in 2024.

ECMO EXPERTS COMPREHENSIVE Made Easy Course

Address: Cairo University hospital, Kasr Alainy Medical School, Cairo

Course Director: Professor Akram Abdelbary / Course Co-director: Dr Mohamed Yosri

Endorsement Type: Adult ECMO Comprehensive Simulation Based Course (meets requirements for Step 1 and Step 2 criteria for E-AEC)





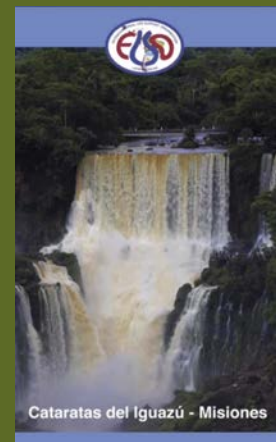
EUROELSO Updates

We welcome all with an interest in adult or pediatric ECMO to join us for EuroELSO ECMO to join us for EuroELSO in Krakow, Poland from April 24th -27th, 2024. Krakow is a city renowned for its beautiful medieval architecture including Wawel Castle and the central market place. The congress itself will be held in the far more modern ICE centre just across the river and will encompass the full breadth of ECMO support and the latest in research. For more information, click [HERE!](#) See you soon!



LAELSO Updates

The 6th LAELSO Congress to be held in Buenos Aires from November 14 to 16, 2024.



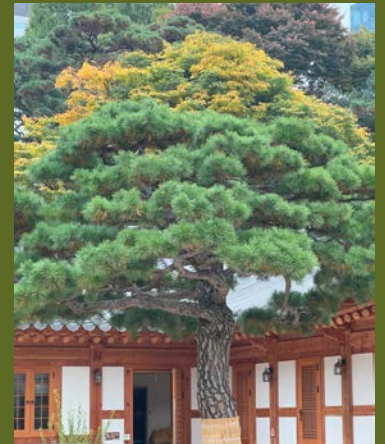
The ECMO course in Costa Rica organized by Hospital Calderon Guardia (ELSO Center 431) and Santa Paula University. It was developed in two parts. An online theoretical part and another clinical simulation part for two days that took place 11/25-26/2023.





AP ELSO Updates

AP ELSO conducted their 9th Conference in Seoul, South Korea. The scientific conference was a huge success. Conducted in partnership with the South Korea Cardiothoracic Surgery Society, nearly 2,000 gathered to participate in the event. Along with a successful conference, we wish to congratulate John Fraser for his years of service as Chair of AP ELSO – leading the region through the pandemic and engaging the world through the Critical Care Consortium. Congratulations to John on a job well done in a difficult time. Welcome to Shingo Ichiba, the new Chair of AP ELSO.



AP ELSO will begin conducting annual conferences in 2024. The 10th AP ELSO Conference will be held in Beijing, China; June 20th – 23rd, 2024.



From Left: Jae-Seung Jung, AP ELSO Conference Committee Chair; Hwa Jin Cho, International Faculty Chair and Christine Stead; Matthew Paden, Graeme MacLaren, Peter Rycus, Hwa Jin Cho, Peta Alexander; sunlight breaking through in the Bamboo Forest



Group gathered following the AP ELSO Steering Committee Meeting in Seoul, South Korea. Transition of Chairs from John Fraser to Shingo Ichiba – congratulations to both!

CHIEF EXECUTIVE OFFICER REMARKS

Gratitude

Reading through this Newsletter, it's hard not to feel an overwhelming sense of it: gratitude.

President Graeme MacLaren did such a wonderful job summarizing noteworthy achievements, thanks to our members and friends. Some milestones have been in the making since ELSO's inception (>200,000 patient runs in the Registry; >100,000 lives saved; several ELSO leaders in top 2% of published scientists in the world); some more recent (research, innovation). All are only possible with a robust, engaged, selfless global group of colleagues that are dedicated to advancing our field for our patients – past, current, and future.

As a community, we continue to rise to the occasion to support each other. While the pandemic is waning (we are sunseting the COVID-19 addendum in April), equipment challenges arise, access to resources remains difficult in some regions, and others wave their hands for attention. We look to each other first when we see a rising challenge – and work through it so we can face the next one.

Looking ahead, we have big ones to tackle together: access, equity, climate change, and unrest. What I appreciate most about our community is that we move toward something better as a community. Grounded in our mission, our work ahead is simple. In practice, we need strong global collaboration to make progress tangible for everyone. Let us.

Thank you for an amazing year in 2023. I am hopeful and inspired for 2024.

Best wishes for time with family and friends this holiday season,

Christine



Love Dr. Bartlett's smile! Thank you, Raj Ramanan.



Always at the ready, Peter Rycus; Peter Rycus, Victoria Turner, Christine Stead, Dr. Bartlett, Natalie Rintoul (incoming Conference Chair), Kennethia Banks, Lauren Gardner (incoming Project Manager), and Alex Fox



HAPPY
holidays



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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