



## Message from the President

2023 brings new hope. The impact of the pandemic is diminishing and ECMO clinicians and researchers are once again directing their attention toward issues other than COVID-19. ELSO is promoting its mission to provide global leadership through innovation, advocacy, and advancing knowledge:



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- The Sixth Edition of the ELSO Red Book was published late last year and work on the Fifth Edition of the ECMO Specialist Training Manual has begun,
- The online adult education course, ELSO Foundations, has proved very successful and a comparable neonatal and pediatric course is in development,
- The Registry has details on close to 200,000 patients and remains the single most important repository of ECMO data in the world, providing a vital resource for clinicians and researchers around the globe, and
- In the near future, ELSO will focus more on promoting Quality, not only through the Center of Excellence award, but by other initiatives which will be announced later in the year.

ELSO was formed in 1989 but this year marks the first time the organization has been led by someone from outside of the USA. Even though its roots are in North America, ELSO is a global organization. It is my privilege to take over from Professor Matthew Paden, who unexpectedly found himself with the unenviable task of leading ELSO through a world-changing pandemic, but who did so with aplomb, wisdom, and sureness of touch. Tremendous gratitude is also owed to Mark Ogino, a world leader in ECMO education, who recently completed his term on the Board of Directors, leaving behind a rich legacy.

ELSO and its regional chapters are pleased to host a number of meetings in 2023, in Ludhiana, Lisbon, Seattle, and Seoul. The content of these meetings will present the latest research and clinical management strategies to those who attend. I sincerely hope that each of you can take part in at least one of these meetings and contribute to our global community.

I wish all of you a wonderful and productive 2023!

Graeme MacLaren, President, ELSO



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## Committee Roundup

### Registry Committee

#### New Changes to the ELSO Registry

The April update 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

For those using XML, please make sure your data entry reflects these changes in time for April data submissions. Details will soon be available here:

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

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### Upcoming Conferences

**Event:** SWAAC ELSO Conference

Location: Punjab , India

Dates: March 11-12, 2023

Registration Information: <https://swaaceiso2023.com/>

**Event:** EURO-ELSO Conference

Location: Lisbon, Portugal

Dates: April 26-29, 2023

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

**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 to open early Spring



**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](#).

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## Education Committee/ELSO Academy

In partnership with SCCM, ELSO held the ECMO Simulation Course in January in San Francisco. The course was well-attended and qualifies for the ELSO Adult ECMO Practitioner Certification.

Likewise, in partnership with the NYSTS, ELSO held a 1-day workshop for critical care fellows in NY. The workshop was a wonderful success and provided fellows with a good base for caring for ECMO patients.

### The 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.elseo.org/Education/certificationexam.aspx>

### 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.elseo.org/ecmo-education/elseo-ecmo-academy.aspx>

## Upcoming ELSO Training Courses

REGISTER NOW >



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

**Event:** ELSO Neonatal and Pediatric ECMO Training Course (*Step 1 Certification Requirements*)

Date: April 4, 2023

Location: Virtual

Register: <https://www.elseo.org/ecmo-education/2023aprilneopedscourse.aspx>

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

Dates: April, 12-13, 2023 (Session 1) April 14-15, 2023 (Session 2)

Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA

**Event:** ECMO Cannulation Workshop (1-Day Workshop)

Date: June 9th, 2023 (Session 1) June 10, 2023 (Session 2) June 11, 2023 (Session 3)

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)

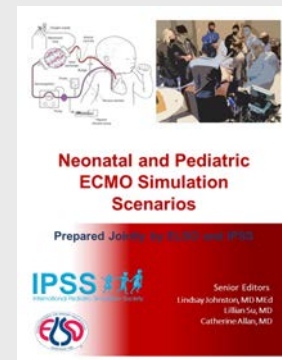
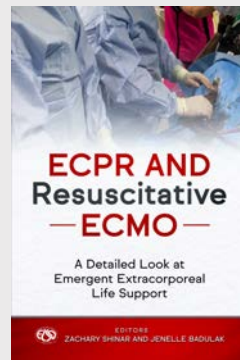
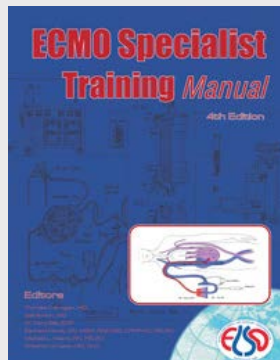
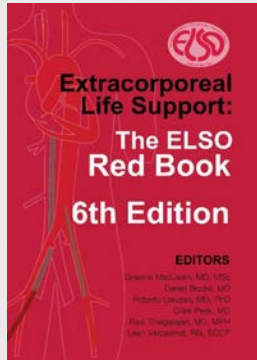
Location: ELSO Headquarters

Address: 3001 Miller Road Ann Arbor, MI, USA



ELSO EDUCATION  
TRAINING

## 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 (just released)
- 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.else.org/Publications.aspx>

## Perfusion Updates

AmSECT Meeting will be March 24-26, 2023 in Orlando, Florida International Conference

International Conference - AmSECT

AmSECT National Headquarters 330 N Wabash Ave, Suite 2000 Chicago, IL 60611

PHONE 312.321.5156 FAX 312.673.6656

[amsect@amsect.org](mailto:amsect@amsect.org) and [www.amsect.org](http://www.amsect.org)



## Nominations & Membership Committee

ELSO is happy to announce ELSO Communities!

Thanks to feedback from our members, we have several communities that we are starting with. These are organized based on focused areas of interest. Please let us know other areas where a community conversation would be beneficial.



As a global nonprofit, 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/GMLS4xcwmUX1yIIXKQN6kB>



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/LNG9O8RqB715X8IzuZOFjy>

## The Award of Excellence Committee



The Award of Excellence Committee will be reviewing 2023 applications the first week of March 2023. Please note that the application deadline is back on its pre-COVID schedule and **CLOSES March 3rd at 23:59 EST**. Now is a great time to get started on your 2023 application! The award application period is opened from 10/15/22 through 3/3/23. *Notice, this is a deadline change from 3/1/2023.*

Don't forget to download the Award Evaluation and Improvement Tool or the Pathway to Excellence Readiness Tool before you fill out your online application.

Have questions? Contact: [Award@elso.org](mailto:Award@elso.org)

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## Coordinator's Corner

Please join us online Wednesday, March 8 from 7:00-8:30p EST for our 4th ELSO ECMO Coordinator Symposium. This symposium will focus on Identifying creative operational & staffing models during a period of scarce resources. We will be presenting a few models and look forward to a robust conversation. Looking into 2023, we will also focus some energy into evaluating new models of connectivity and collaboration.

A huge thank you to all who have stepped up to lead these efforts. Please let us know if you would like to join the efforts!

If you have any topics that you would the committee to review for discussion email: [newsletter@elso.org](mailto:newsletter@elso.org)

## Bedside with Bartlett



*Robert Bartlett, MD*

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

### Case Study

Some boys are playing a pick up hockey game on a frozen pond on a farm. A 12-year-old boy is hit by a puck in the chest and has a cardiac arrest. One boy tries CPR while another runs to the farmhouse to call 911. EMS arrives in 15 minutes. They apply the AED and restore normal rhythm. The pulse is very weak and there are runs of PVCs. They carry the boy to the ambulance and go to Big City Hospital. During transport the heart arrests again despite multiple shocks. It takes 20 minutes to get to the hospital ER. In the ER the boy is intubated and lines are placed. Cardiac rhythm is sometimes normal but usually V-tach with no pulse.. CPR continues .The end tidal CO<sub>2</sub> is 18. Your Big City Hospital ECMO team is called and comes to the ER. Although, no one is counting, 55 minutes have passed since the cardiac arrest. Should you put the patient on ECMO? How? What is the plan?

This is classic out of hospital cardiac arrest in the ER, but is unusual because of the young age in a previously healthy person who does not have underlying disease. It is certainly worth a trial of VA support (ECPR ). Femoral arterial and venous cannulation is the correct mode of access, percutaneously if the team is good at it otherwise by direct cut down. VA perfusion is maintained at 3 L per m<sup>2</sup> per minute depending on the size of the patient. We would expect recovery of normal cardiac electrical and mechanical activity within 10-30 minutes. CPR is trying to resuscitate the heart and hoping the brain will be OK. ECPR is all about resuscitating the brain and dealing with the heart later.

To minimize brain injury it makes sense to cool the patient to around 33° C for one to two days. It is necessary to paralyze and anesthetize the patient to prevent shivering. If the LV does not open the aortic valve, vent the left side of the heart (I would do an atrial septostomy) After one to two days warm the patient to 37° to evaluate brain function. Turn off all the paralysis and sedation. If brain function is satisfactory, it will usually be obvious in a day or two. If there's no useful brain function after a few days, discontinue the procedure. Depending on the family and circumstances, consider organ donation before turning off ECMO.



## Patient Story: Cano Lopez's Story



Day of discharge, 5/24/21, from Scripps Hospital with social worker, Frances Ber, LMFT holding a picture Cano painted

Our patient is proud to say he is an ECMO survivor and a double lung transplant recipient! Meet Cano Lopez, a 32-year-old male, a special education assistant in a school, and artist. He was unvaccinated and contracted COVID-19 in his hometown of Thermal, California, along with his entire family. Cano went to a local hospital, Pioneer, on 1/14/21 due to shortness of breath, discharged and returned on 1/18/21 with the diagnosis of hypoxic respiratory failure secondary to COVID pneumonia. He was one of the lucky patients selected for ECMO treatment and transferred to Scripps Memorial Hospital for more specialized treatment and care.

Cano was admitted on 2/1/21 and cannulated two days later. Cano had a tracheostomy on 2/14/21, two weeks into his hospitalization, but even with the tracheostomy Cano tried to communicate as best as he could. We witnessed Cano suffer from severe anxiety and depression and all he wanted was his two dogs for comfort. Due to COVID precautions, the therapy dogs were not allowed in the hospital. His family visited every day and decorated his room with pictures of family, friends, and most importantly his dogs. Despite anxiety and depression, and

at times wanting to quit, Cano found the strength with the assistance of the physical therapists, respiratory therapists, the nurses, the doctors, and other medical staff to eventually stand up in a tilt bed, then progressed to sitting on the side of the bed and eventually into a chair. It was remarkable that he was then able to stand up, use a walker and make steps from his room to the door and week after week made slow, but steady progress to walking.

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Cano discharged after 94 days on ECMO to a long-term acute care facility and finally returned home to his family and his dogs. Soon after, he got a call that changed everything for him; he would need a lung transplant. After the shock of the news, the evaluation and assessment process at University of California San Diego hospital, he came to terms with his diagnosis of lung failure. Six months later, he got the miracle phone call that there is a match and he and his family drove 3 hours to UCSD hospital and he underwent the double-lung transplant on Thanksgiving. It was successful!

Cano was incredibly happy to finally return home with a new pair of lungs and resume his life doing his art and spending time with his family and friends. He has not returned to work, yet but is taking time off and building back his strength. Cano is incredibly grateful for all the support from both hospitals, his family, friends, and the ECMO support group at Scripps Memorial La Jolla, CA hospital. He continues to stay in touch with everyone and visits as often as he can.

ELSO would like to thank Cano Lopez and Frances Ber at Scripps Memorial Hospital La Jolla, Prebys Cardiovascular Institute for sharing such an amazing story!

Do you have a patient story that you would like to share in the ELSO Newsletter? E-mail: [family@elso.org](mailto:family@elso.org)



Post double-lung transplant  
12/2021



Christmas 2022 in his home in  
Thermal, CA

## ECMO Around The World

### LA ELSO Updates

Great enthusiasm in our Latin American community, after the 5th LATAM Conference in Lima Peru 2022, as we already started preparations for the 6th Latin American conference of ELSO LATAM, in Buenos Aires Argentina November 14th – 16th, 2024.



On January 27th – 28th, we had a very good EVLP Workshop in TecSalud, Mexico, with collaboration of excellent professors and instructors from Toronto, USA, Chile and Mexico, with live broadcast to ELSO centers in Mexico, Argentina, Brazil, Colombia Costa Rica and Peru. It was an excellent educational event!



ECMO VAD & Fundación Cardiovascular Colombia/ELSO LATAM Percutaneous cannulation course, virtual and hands-on for VA and VV ECMO. In the setting of small groups, students will have an opportunity for hands on learning and troubleshooting of clinical cases. This was a great opportunity to apply what was discussed in the on-line theoretical section.



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 ELSO Updates**

We will host APELSO 2023 with great domestic and international speakers in Seoul, Korea, from November 2nd to 4th, 2023. We have developed educational collaborations with intensivists, cardiothoracic surgeons, cardiologists, emergency physicians, engineers, perfusionists, therapists, and nurses in the neonate, pediatric, and adult backgrounds. We also have developed diverse working groups to allow us to focus on a successful and enjoyable congress.

APELSO would like to congratulate the APELSO 2023 organizing committee on what is shaping up to be a highly scientific and educational conference. We are also organizing symposia and sessions joined by the Extracorporeal Life Support Organization (ELSO), the Korean Society of Thoracic and Cardiovascular Surgery, the Korean Society of Critical Care Medicine, the Korean Academy of Tuberculosis and Respiratory disease, the Korean Society of Cardiology.

We have developed educational collaborations with intensivists, cardiothoracic surgeons, cardiologists, emergency physicians, engineers, perfusionists, therapists, and nurses in the neonate, pediatric, and adult backgrounds. We also have developed diverse working groups to allow us to focus on a successful and enjoyable congress.

We look forward to our congress in a beautiful country and hope to meet as many friends as possible to discuss the latest advances in all aspects of ECMO. See you at the APELSO conference in Seoul, Korea, in November 2023! [www.apelso2023.org](http://www.apelso2023.org)

## **Critical Care Research Group's Living Heart Project hits major milestones**

Congratulations to the team behind [The Living Heart Project](#), an international preclinical and clinical trial co-led by Prof David McGiffin, Prof David Kaye, and Prof John Fraser, that is changing the game of heart transplantation across Australia and New Zealand.

Together with teams from every major transplant centre across Australia and New Zealand, the [Critical Care Research Group](#) has perfected the use of a novel Hypothermic Ex Vivo Perfusion (HEVP), in what will become a game changer for the heart transplantation field.

HEVP allows donor hearts to be rejuvenated before transplantation, essentially kept "alive" with a medical "Gatorade" rich in oxygen and nutrients.

The Living Heart Project represents the first major innovation in this field with the world-first clinical trial completing over 30 HEVP-assisted heart transplants including the longest ischemic time and the greatest distance a donor heart has ever travelled.

**APELSO ELSO Continue...**

The doctors are now focused on using the technology to “reboot” damaged donated hearts which at the moment have to be discarded. They hope they will be able to increase the number of viable transplant hearts by up to 40 per cent while also extending the lives of donees by decades because they receive better-quality hearts.

“What we have achieved to date with our experimental work and clinical trial in Australia and New Zealand has the potential to change the practice of cardiac transplantation worldwide,” said Professors McGiffin and Kaye.

The Living Heart Project recently received national print, radio and tv media coverage in Australia, profile the story of one you HEVP-heart recipient, Alex.

Read more here <https://www.ccrp.org.au/living-heart>

**The Australian and New Zealand ECMO Registry (The EXCEL Registry )**

Congratulations to the EXCEL Team who have enrolled over 1500 patients in the binational registry from 29 ECMO centres since it started in 2019. The registry provides biannual reports of ECMO selection criteria, diagnostic groups, duration of support, retrieval status and outcomes, complications, risk adjusted mortality, benchmarking against other centres and functional outcomes in survivors.

The EXCEL team have received new funding for a biobank, a platform trial and 6 additional clinical trials. Over \$10M in funding has been won over the past year from competitive grants in Australia to support clinical trials embedded in the registry

A key publication from the EXCEL Team was published in Lancet Respiratory Medicine in 2022 about the 6-month outcomes after ECMO. This publication reported that only one third of patients were alive without disability at 6-months after ECMO .

The Chair of the EXCEL Team, Professor Carol Hodgson says “We have partnered with patients, clinicians, researchers, scientists, engineers and healthcare providers to provide data about the use of ECMO and the outcomes of patients requiring ECMO in Australia and New Zealand. The data we provide will improve outcomes for patients by providing feedback that will change clinical practice”. The registry is part of an initiative by the International ECMO Network to provide a platform for the conduct of international trials, and is harmonized with other registries in North America (INDEX, ELSO). Through this harmonization EXCEL is able to automate the data entry into the ELSO registry for the participating centers.

More information can be found here: <https://www.monash.edu/medicine/sphpm/excel/home> 13

## Chief Executive Officer Remarks

Of the many things that ELSO provides, community might be the most important. This goes back to Dr. Bartlett's initial purpose in creating ELSO - to create a community of people that are interested in providing extracorporeal life support to the most critically ill patients. At the beginning, this was a very small group of pioneers.

In 2021, ELSO conducted a strategic planning effort where we heard from many of our members. "ELSO should provide that space where anyone can come with any question and get help" was a comment and general theme from many. Since the beginning of ELSO, we have been that place.

Technology, regulations, laws, and adoption of ECMO - all have changed quite a bit since ELSO's inception in 1989. We are a unique nonprofit in that we are truly a global family. We have a good history of coming together as such during the recent pandemic, and many times before.

Today we are launching ELSO Communities - a means of communicating in real time with each other on topics of interest to our members - all of you. A lot of thinking went into how to do this and I have to particularly thank Jenelle Badulak and Pablo Sanchez for helping us get this going in their role(s) as Chair of ELSO's Nominations & Membership Committee. I hope you will join a community and make it valuable to you, your team, and the patients you serve.

As February comes to a close, I continue to be inspired by our community and our partners. Our friends at SCCM hosted a wonderful conference in January and ELSO was happy to be part of it, including a simulation course. Keystone is back in person, which again is an opportunity to gather together and share ideas in a way that feels more like a family. I am looking forward to the SWAAC ELSO meeting next in Ludhiana, India to see the great work going on in that region, and become a closer global family.

Thank you for being a part of it. Much more to come this year to help you all take better care of the patients you serve and the communities you are part of - through helping each other learn, advancing knowledge, approaching the challenges we face together.

If you have suggestions or ideas, please reach out any time: [cstead@elso.org](mailto:cstead@elso.org), or cell: 734.717.2493 (text, WhatsApp).



Christine (pictured with a famous ELSO person, Peter Rycus)



# 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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The Extracorporeal Life Support Organization (ELSO)  
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[www.elseo.org](http://www.elseo.org)

For editorial concerns related to this newsletter, please contact [newsletter@elseo.org](mailto:newsletter@elseo.org).

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