



“Therefore in medicine we ought to know the causes of sickness and health.”

-Avicenna

*From the chair...*

As we approach the end of 2017 I would like to highlight some noteworthy events during the past year. Engaged clinical care providers remain the foundation of ELSO. I would like to take this opportunity to acknowledge and congratulate Bishoy Zakhary (Logistics and Education Committee Chair), Kasia Hryneiwickz (Conference Committee Chair), John Toomasian (Technology Committee Chair), and Joanne Starr (Member At-large), and Bradley Kuch (Respiratory Care Liaison) for being elected to the ELSO Steering Committee. I would also like to congratulate Dan Brodie, who was elected to the position of Treasurer and will serve as a member of the ELSO Executive Committee.

ELSO is partnering with ArborMetrix to develop a powerful analytics platform that will enable ELSO Centers to examine their clinical experience using proprietary, de-identified, risk-adjusted outcome measures. This exciting new tool will enable ECMO centers to identify program-specific strengths and opportunities for improvement. We anticipate that this tool will be available to ELSO centers just after the first of the year.

Each year ELSO awards a number of grants to fund clinical, basic science, educational, and outcomes-based research related to extracorporeal life support. ELSO members are encouraged to apply. The deadline for applications for the 2018 award has been extended to December 8th. Applications are available on the [ELSO.org website](http://ELSO.org).

D. Michael McMullan, MD, FACS  
President, Extracorporeal Life Support Organization

*DON'T MISS THE DEADLINE!*



The deadline for entering ELSO Registry Forms is **January 14, 2018** to be included in the January Reports.



The new ELSO website is under construction and will be available soon.



**Volunteers Needed!!**

We are currently Beta testing the new ELSO registry if you would like to try out the new system click on the following link.

<http://betaregistry2.else.org/index.html>

If you have used the live registry and then try BETA2, you can run into difficulties logging on. Try clearing your cache or using Private or Incognito mode on browser (if available).

**2018 ELSO Research Grant Application process is now open!**

Click [here](#) to apply!

<https://www.else.org/Resources/ELSOResearchGrantApplication.aspx>



Deadline December 8th!!!



# ELSO MEMBERSHIPS



## ELSO Membership

- ECMO clinicians, research scientists, and members of regulatory and public health institutions are now eligible for membership in ELSO
- Membership allows physicians, nurses, perfusionists, respiratory therapists, researchers and other healthcare professionals to become more directly involved in the world's largest ECMO community
- Affiliation with an ELSO Member Center is not necessary to apply
- Members receive benefits separate from Member Center privileges

## Benefits of membership include:

- Direct participation in the world's largest ECMO community
- ELSO Member Newsletters
- ELSO Registry Data Reports– January 2017 Reports available on website!
- Discounts on one copy of the ELSO Red Book (\$20 off list price) and one copy of the ECMO Specialist Manual (\$5 off)
- 10% discount on Annual ELSO Conference Registration fee
- Official Certificate of ELSO Membership
- Admission to the Members-Only Business Meeting at the Annual ELSO Conference
- Discounted registration rates for global ELSO Chapter Conferences (EuroELSO, Asia-Pacific ELSO, Latin-America ELSO, South & West Asia ELSO)
- Access to the ELSO Online Discussion Board
- Access to ELSO Online ECMO Knowledge Assessment Examination (Certificate of Completion included upon successful completion)
- Eligibility to participate in ELSO Committees and Working groups

Please visit us at <http://www.else.org/members/individualMembership.aspx>

*Please note that for the 10% discount on the Annual North American ELSO conference it can take up to 2 weeks to import your discount code into the CVENT registration program.*



## Bedside with Dr. Bartlett

*Dr. Bartlett is considered by many to be the “father” of ECMO. He has a vast amount of experience and has faced many critical situations and decisions. In this newsletter series, he will join us on ECMO rounds at the bedside.*

A 50 year old man is on VV ECMO for severe viral pneumonia. He has been on for 7 days and his lungs are totally consolidated with no tidal volume. We have heard about managing these patients awake, including ambulation. However, every time we try to wake the patient up he becomes very agitated, appears to be dyspneic, and thrashes around such that we have to return to heavy sedation. He is currently getting high doses of Versed and morphine. How can we wake him up?

### **What is happening and what should we do?**

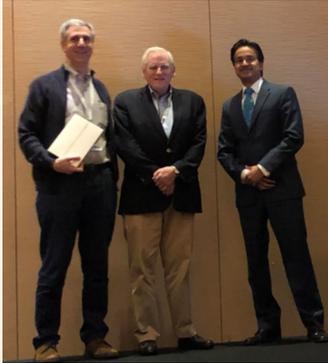
Everyone agrees that it is best to manage critically ill patients with minimal sedation including responsiveness to conversation and spontaneous breathing. This applies to any patient, but particularly to ECMO patients who will probably require prolonged ICU care. However, this is often very difficult to accomplish and this patient is a good example. First of all, the patient has been on narcotics and benzodiazepines for a week so that weaning off can be very difficult. The best approach is to avoid these drugs after the first day or so on ECMO support, favoring minimal sedation. After the initial cannulation, the patient is not in pain so that narcotics are not necessary for analgesia. Too commonly, narcotics are used for sedation when other drugs have less problems. However, benzodiazepines also create dependency and extreme agitation on discontinuation so they should also be avoided. Sedatives and anesthetic/sedatives such as propofol, barbiturates, or dexmedetomidine can be rapidly reversed and have less long term problems. Ketamine is a good alternative, but can cause unpleasant hallucinations in a patient with a prior psychiatric or drug history. In this patient, dependency on narcotics and benzos has already occurred after a week, so the extreme agitation on waking up is the first problem. It would be best to switch to other agents such as propofol at this time, although it may take days or weeks to clear benzos from the system.

Realizing that, when awakening a patient from prolonged narcotic and benzo treatment, or just waking up intubated in the ICU, direct communication while waking up is crucial. This means an experienced nurse or team of nurses who can constantly attend the patient and assure him that he is okay and he can breathe calmly. This can take many hours, even days. The problem of being awake and intubated is solved by tracheostomy. As the patient begins to awake and breathe spontaneously, his metabolic rate will go up which means that oxygen requirement and CO<sub>2</sub> production will double or triple with the increased activity. Accordingly, the ECMO circuit should be managed by turning up the sweep gas flow to maintain PCO<sub>2</sub> at 40 or below and improving systemic oxygen delivery to assure that delivery is 3 or more times consumption. This usually requires doubling the sweep flow and transfusion to a hematocrit greater than 40.

**Is there a question or clinical situation that you would like to consult**

**Dr. Bartlett with? Send your question to [newsletter@elso.org](mailto:newsletter@elso.org)**

# 2017 ELSO Conference



This year was the most successful ELSO annual conference to date, with 845 attendees. We had representatives from many areas of ECMO care including nursing, respiratory therapy, perfusion, surgery, cardiology, intensive care, neonatology, emergency medicine and more!!

Over 325 attended the preconference, the most ever when trying to do simultaneous simulation and didactic rotations. The preconference combined didactic and simulation efforts focusing on both common patient issues (obesity, long-duration ECMO, septic shock and others) as well as how to use ultrasound in ECMO, how to do percutaneous cannulation, conversion from VV-VA and an actual ECMO transport around the convention center floor!! Thanks to ALL who provided setup and faculty help, especially our local folks at Johns Hopkins and University of Maryland.

We had interesting family stories, one with an over 600 day combined ECMO and RVAD run with good survival, and learned more about what new devices may be coming soon for respiratory failure. We had multiple breakout sessions focused both on age-related ECMO groups, research, outcomes and other topics. All were well attended, with the usual cry that there were competing sessions that made folks want to clone themselves to be in 2 places at once.



We are indebted to our sponsors, who both supply equipment and materials for use in the preconference, help with unrestricted educational grants, and provide information about their products. We had our first platinum level sponsor (Getinge) and a total of 16 vendors.

Our center of excellence ceremony featured over 50 awardees and 10 new Fellows of ELSO were inducted. Thanks to Shri Deshpande and the Sibley Heart Center for sponsoring the RHB "best abstract" award and the iPad's that went with it. Winners this year were Dr. Katherine Boyle, Dr. Javier Kattan and I-wen Wang.

Kasia Hryniecicz will be taking over conference chair duties for the next couple of years. Feel free to offer suggestions to the ELSO office or volunteer to help out. Next year we will be in sunny Scottsdale (Sept 13 -16), where we hope to have a 5 K run and a mini golf tourney in addition to all the education and networking!



# 2017 FELSO Award Recipients

Induction into Fellowship of the Extracorporeal Life Support Organization is an honor bestowed on select physicians, nurses, perfusionists, therapists and researchers who have provided distinctive contributions to the global art and science of extracorporeal support delivery. Election to FELSO identifies global recognition of those who have advanced the field in diverse and lasting ways. This years FELSO awardees are:

**Phoebe Hankins** was the original executive director of ELSO; the original Peter. She organized the original ECMO courses at Michigan, coordinated the communication, and helped establish ELSO in 1989. She ran everything from the annual meeting to the committees to the newsletter. With John Toomasian and Sandy Snedecor she established the Registry. When the 2001 meeting was cancelled because of 9/11, Phoebe guided ELSO through financial problems to profitability. She has continued to be a major resource to Peter and ELSO, although she is now assistant to the director of UM Medical Center. ELSO would not exist without Phoebe Hankins

**Andrej (Andrew) Sosnowski** is a cardiac surgeon who, with Richard Firmin, established the legendary ECMO program at Glenfield Hospital, Leicester, England. Andrej personally managed those difficult early cases, and established ECMO in the UK when there were many skeptics. He conducted the classic neonatal trial with Richard and the CESAR trial with Richard and Giles Peek. He is currently retired in his native Poland, where he remains the major consultant and voice of ECMO in central Europe.

**Palle Palmer** established the ECMO program at Karolinska Hospital in Stockholm Sweden. Dr. Bartlett describes the Karolinska as the best ECMO center in the world by any measure. With surgeon Bjorn Frenckner, Dr. Palmer built the Karolinska center to prominence over decades. He was instrumental in initiating awake ECMO and recovery in prolonged ECMO long before others followed. He has been a leader in ELSO and EuroELSO.

**Bjorn Frencker** is a pediatric surgeon who, with colleague Palle Palmer, established the world-class ECMO program at Karolinska Hospital, Stockholm, Sweden. Bjorn has been a leader in ECMO and in pediatric surgery for three decades. He has trained scores of surgeons and fellows. Bjorn has been active in ELSO and EuroELSO and hosted the second meeting of EuroELSO in 2013

**Rodrigo Diaz** is an intensivist in Santiago Chile who established the first ECMO center in Latin America. The Santaigo center has been an example to other countries in Latin America and to the world for many years. Dr. Diaz has not only excellent results, but trained most of the Latin American centers, and helped establish ECMO programs in his continent. In addition to his personal leadership, he has been a major contributor to ELSO and to LAELSO.

**Micheal Heard, Tracy Morrison and Barb Haney** were instrumental in the establishment of the ELSO Center of Excellence Award which is the internationally recognized certification of outstanding performance and status of hospitals with ECMO programs. Originally established in 2006, the COE award rapidly became the recognition of outstanding ECMO centers throughout the world. Hospitals display their ELSO COE plaques in ICUs where all the participants take pride in accomplishment. Hospital administrators (not to mention insurance carriers and certifying agencies like JACHO) recognize the COE award as a unique indication of the quality of an ECMO program. Tracy, Barb, and Michael continue to manage the program, reviewing scores of applicants each year, and coaching centers to achieve excellence status.

**Steve Conrad** has been a pioneer in the development and growth of the ELSO registry. He upgraded the registry from an old flat file system to a modern database structure which also included the implementation of ICD coding system and removal of open text. His work led to the move of the registry to a web-based format from its old paper days. As ELSO Steering Committee chair, Steve helped guide the development of the regional chapters of ELSO, including EuroELSO, APELSO, LAELSO and SWACELSO. Dr. Conrad's contributions helped bring us to the robust international ELSO structure we enjoy today.

**Heidi Dalton** is recognized as a world leader in the field of extracorporeal support. Heidi has served as a director of three different ECMO programs, caring for both pediatric and adult patients. Dr. Dalton previously served as ELSO Steering Committee chair, advancing its development. She is well known for her longstanding work as ELSO Conference chair, where she has led the development and tremendous growth of the annual ELSO conference to its current record attendance and state-of-the-art presentations. She continues to lead informative research trials and is highly sought after to speak worldwide for her expertise.

# Upcoming Courses and Meetings



## **ELSO LATAM VA ECMO AND TEMPORARY VAD COURSE**

Hospital Internacional de Colombia, Bucaramanga, Santander  
11/16/2017 - 11/19/2017

<http://www.fcv.org/site/curso-also-latam/estrategias-de-aprendizaje/estrategias-de-aprendizaje>

Leonardo Salazar +573174368073 [demotucordis@gmail.com](mailto:demotucordis@gmail.com)

## **5th Annual SWAC-ELSO Conference**

India Habitat Center, New Delhi  
01/18/2018 - 01/21/2018

<http://www.cvent.com/events/5th-swac-also-conference/event-summary-c727c2bdb7624f90acb13c25d0ea0aaa.aspx?fqp=true>

[swacalso2018@indiattitude.com](mailto:swacalso2018@indiattitude.com)

## **ECMO Management Workshop**

San Antonio Marriott Rivercenter, San Antonio, TX  
02/23/2018 - 02/24/2018

<http://www.cvent.com/d/s5qr9j>

Kennethia Banks-Borden 734-996-6600 [kbanksborden@also.org](mailto:kbanksborden@also.org)

Registration open

## **ELSO Adult ECMO Training Course**

Emory Conference Center, Atlanta GA  
04/11/2018 - 04/14/2018

<https://www.else.org/Members/Courses/April2018Atlanta.aspx>

Kennethia Banks-Borden 734-998-6600 [kbanksborden@also.org](mailto:kbanksborden@also.org)

Registration open

## **LAELSO VV ECMO Adult Course**

Radisson Blu Santiago Chile  
04/18/2018 - 04/21/2018

<http://www.anestesiologialascondes.cl/ecmolatam/index.php>

[andreacl@gmail.com](mailto:andreacl@gmail.com)

## **Euro-ELSO 2018**

Prague, Czech Republic  
05/23/2018 - 05/26/2018

<http://www.prague-euroalso2018.com/>

Deadline: 420 284 001 493

Simona Zelenkova +420 284 001 493 [somolovak@guarant.cz](mailto:somolovak@guarant.cz)

## **29th Annual ELSO Conference**

Scottsdale, Arizona  
09/13/2018 - 09/16/2018

Kennethia Banks-Borden or Peter Rycus 7347-998-6600 [kbanksborden@also.org](mailto:kbanksborden@also.org)

## **ELSO Adult ECMO Training Course**

Emory Conference Center, Atlanta GA  
11/07/2018 - 11/10/2018

November course not open for registration at this time



# Website Corner



## Be an MVP!

Why should athletes get all the attention?! Show the ELSO community that you're an MVP (most valuable poster)! New topics are hitting the Discussion Board every day; so hit back with some knowledge of your own!

## Discussion Board Topics of the Month

These are the hottest topics. Stop by and provide your input!

[Pre and Post Membrane Blood Gases](#): When do you do them, how do you interpret them and why do we do them? Share your insights!

[Blood for Priming](#): Another "challenge to what we've always done" post. Share your experience and protocols for blood priming circuits!

[ECLS Specialist Primer/initiation/trouble shooting](#): A great programmatic discussion on how you define staff roles and responsibilities.

## Discussion Board Contributor of the Month



Congratulations Rhonda Bakken, RRT from University of Minnesota Medical Health for being our Discussion Board Contributor of the Month! Keep sharing your experience!



## Logging On



All ELSO Member institutions have an Administrative Account for your ELSO Registry data entry. This account can create separate accounts for your local physicians and ECMO Specialists. Contact your local ECMO Coordinator to get your accounts set up! Conversely, you can sign up for an individual membership to take advantage of discounts on Red Books and ELSO Conference Registration.



# Surveys

Ethical dilemmas surrounding the decision to withdraw ECMO in pediatric patients represent a major challenge for critical care physicians. There are limited data regarding when to stop ECMO. Principles such as autonomy and proper decision-making authority, the determination of harm versus good provided by the treatment, medical futility, waste of medical resources, and moral distress of those providing perceived futile care are difficult to define. Moreover indications for stopping ECMO may be variable in different countries and possibly influenced by the local cultural and social norms. By means of this survey, we sought to assess the current opinions and attitudes of ECMO program directors regarding the decision of whether to withdraw ECMO. We believe that a deeper understanding of the ethical issues raised in consideration of ECMO withdrawal might lead to an improvement of care and a possible mitigation of moral distress of those involved in this complex clinical decision.

[https://fr.surveymonkey.com/r/ECMO\\_withdrawal](https://fr.surveymonkey.com/r/ECMO_withdrawal)



Thank you for your help

Kind regards

Angelo Polito

Geneva Children's Hospital, Switzerland



## Communication Committee Update

The Communication Committee hopes soon to have a Spanish translation of the 4th Edition of the ELSO Red Book available as an eBook.

The editors are currently busy reviewing the submitted chapters for the upcoming 4th Edition of the ELSO Specialist's Manual.



**For additional information contact:**

**Billie Short, MD 202-476-3314**

**[bshort@childrensnational.org](mailto:bshort@childrensnational.org)**

**<http://www.event.com/events/34th-annual-cnhs-symposium-ecmo-the-advanced-therapies-for-respiratory-failure/event-summary-4af5755b16434ae8aff219bec07adb8e.aspx>**

↑  
*Click here for  
more  
information*

# 2017 ELSO Centers of Excellence

The ELSO Excellence in Life Support Award recognizes ECLS programs worldwide that distinguish themselves by having processes, procedures and systems in place that promote excellence and exceptional care in extracorporeal membrane oxygenation.

ELSO's goal is to recognize and honor ECLS programs that reach the highest level of performance, innovation, satisfaction and quality.

A designated Center of Excellence has demonstrated extraordinary achievement in the following three categories:

1. Excellence in promoting the mission, activities, and vision of ELSO;
2. Excellence in patient care by using the highest quality measures, processes, and structures based upon evidence; and
3. Excellence in training, education, collaboration, and communication supporting ELSO guidelines that contributes to a healing environment for families, patients and staff.

The ELSO Award signifies to patients and families a commitment to exceptional patient care. The Platinum level demonstrates to the health care community that your program has high quality standards and processes in place, specialized equipment and supplies, defined patient protocols, and provides advanced education for all staff members.

ELSO is very pleased to announce the 2017 Award Winners! Announced at EURO ELSO in Maastricht, The Netherlands; the Annual ELSO Meeting in Baltimore, Maryland; and, the Asia-Pacific ELSO Conference in Gold Coast, Queensland, Australia.



## ***Center of Excellence ~ Platinum Level***

**Children's Hospital of Philadelphia**  
Philadelphia, PA

**Children's Mercy Hospital**  
Kansas City, MO

**OSF Saint Francis Medical Center Heart  
Hospital**  
Peoria, IL

**Children's Hospital Colorado**  
Aurora, CO

**University of Minnesota - M Health**  
Minneapolis, MN

**Children's Hospital of Orange County**  
Orange, CA

**Aberdeen Royal Infirmary**  
Aberdeen, Scotland, United Kingdom

**University Hospital Regensburg, UKR**  
Regensburg, Germany



## ***Center of Excellence ~ Gold Level***

**Our Lady's Children's Hospital**  
Dublin, Ireland

**Leiden University Medical Center (LUMC)**  
Leiden, The Netherlands

**University Medicine Greifswald**  
Greifswald, Germany

**Aarhus University Hospital, OPI East**  
Aarhus, Denmark

**Wake Forest Baptist Health**  
Winston-Salem, NC

**Ann & Robert H. Lurie Children's Hospital of  
Chicago**  
Chicago, IL

**Cook Children's Medical Center**  
Fort Worth, TX

**University of North Carolina Hospitals**  
Chapel Hill, NC

**Johns Hopkins All Children's Hospital**  
Saint Petersburg, FL

**St. Louis Children's Hospital**  
St. Louis, MO

**Johns Hopkins Hospital**  
Baltimore, MD

**Arkansas Children's Hospital**  
Little Rock, AR

**Rainbow Babies and Children's Hospital**  
Cleveland, OH

**Children's Hospitals and Clinics of Minnesota**  
Minneapolis, MN

**University of Maryland Medical Center**  
Baltimore, MD

**Yale - New Haven Children's Hospital**  
New Haven, CT

**Nicklaus Children's Hospital**  
Miami, FL

**Children's Hospital of Georgia**  
Augusta, GA

**Wolfson Children's Hospital**  
Jacksonville, FL

**Monroe Carell Jr. Children's Hospital at Vanderbilt**  
Nashville, TN

**St. Christopher's Hospital for Children**  
Philadelphia, PA

**UCSF Benioff Children's Hospital**  
San Francisco, CA

**Mayo Clinic Hospital - Arizona**  
Phoenix, AZ

**University of Virginia Medical Center**  
Charlottesville, VA

**Children's Memorial Hermann Hospital**  
Houston, TX

**University of Colorado Hospital**  
Aurora, CO

**Children's Medical Center of Dallas**  
Dallas, TX

**Children's Hospital of Los Angeles**  
Los Angeles, CA

**Le Bonheur Children's Hospital**  
Memphis, TN

**Mayo Clinic Rochester**  
Rochester, MN

**Cleveland Clinic Children's**  
Cleveland, OH

**Medical University of South Carolina**  
Charleston, SC

**MHHS-Center for Advanced Heart Failure**  
Houston, TX

**UC Davis Medical Center**  
Sacramento, CA

**Children's Hospital of San Antonio (CHRISTUS)**  
San Antonio, TX

**University of Kentucky Chandler Medical Center**  
Lexington, KY

**Hanuola - ECMO Program of Hawaii**  
Honolulu, HI

**Maine Medical Center**  
Portland, ME

**Arnold Palmer Medical Center**  
Orlando, FL

**Omaha Children's Hospital and Medical Center**  
Omaha, NE

**San Antonio Military Medical Center (SAMMC)**  
San Antonio, TX

**Carolinas Medical Center and Levine Children's Hospital**  
Charlotte, NC

**University of Chicago Medical Center**  
Chicago, IL

**National Taiwan University Hospital**  
Taipei, Taiwan

**Queen Mary Hospital**  
Hong Kong, Hong Kong



*Pathway to Excellence ~ Silver Level*

**Hospital Dr. Rafael Ángel Calderón Guardia, C.C.S.S.**  
San Jose, Central, El Carmen  
Costa Rica

**NYU Langone Medical Center**  
New York, NY

**Geisinger Health System**  
Danville, PA

**Robert Wood Johnson University Hospital**  
New Brunswick, NJ

**Penn State Hershey Medical Center**  
Hershey, PA

**Hennepin County Medical Center**  
Minneapolis, MN

**University Health System**  
San Antonio, TX

**The Children's Hospital at OU Medical Center**  
Oklahoma City, OK

**UF Health Shands**  
Gainesville, FL

**Children's Hospital of Wisconsin**  
Milwaukee, WI



# ***The ELSO Award of Excellence Application***



ELSO Award for Excellence in Life Support

Open for 2018 Applications

December 1st



If you last applied for the Award for 2015 Designation  
your Award will expire!



***Deadline for Applications is March 15th, 2018!!***

## **To Start an Application**

The Award for Excellence is now an on-line application process. It is found on the ELSO website under 'Excellence". Each Center administrator must sign in to the ELSO Website and designate access to your team members for the Center of Excellence role.

1. Designate the assigned individuals to complete your application on the ELSO website.
2. Have your system administrator log in to [ELSO.org](http://ELSO.org) with their username and password.
3. On the Manage Tab, select or add the center members responsible for completing the award.
4. Click Edit Tab on the far left column and scroll down to select the box with the Center of Excellence award application role.
5. Click to save changes.

It is highly recommended that every Center start by reading the [Application Instructions](#) under the Excellence Tab.

If you have any questions, please feel free to email [award@elso.org](mailto:award@elso.org)



## Facebook

If you use Facebook please visit our sites and “like” us! We intend to use Facebook as a way to present information to not only ELSO members but to anyone who is interested in our organization. [www.facebook.com/ELSO.org](http://www.facebook.com/ELSO.org)

Euro-ELSO Facebook page:  
[www.facebook.com/EuroELSO](http://www.facebook.com/EuroELSO)



## Twitter

Follow us on twitter!  
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The ELSO Newsletter editorial team’s goal is to bring you a newsletter that is entertaining, informational, and educational. If you would like to join us or have any suggestions for improving the newsletter or would like to contribute content, please contact Joel Davis at [jdavis@elso.org](mailto:jdavis@elso.org).

Thank you from the ELSO Newsletter editorial team!

