STA ‘24
STA ANNUAL MEETING
Usability and Design of Future Anesthesia Practice
January 11-14, 2024
Royal Sonesta Galleria • Houston, Texas
Program Chairs: Priya Ramaswamy, MD, MEng and Elie Sarraf, MD, CM
Offering 18.00 AMA PRA Category 1 Credits™
Activity Overview

The Society for Technology in Anesthesia (STA) 2024 Annual Meeting will provide a platform for anesthesia researchers to present their findings and developments in an effort to improve practices in anesthesia. Specific topics will include user-centered design, advances in Artificial Intelligence, device development and solutions to disparities in medicine.

Educational Objectives

As a result of participation in this CME activity, learners should be able to:

• Describe and conduct user-centered design on innovation in medicine.
• Describe how individuals who have identified unmet needs can create innovation in medical care.
• Summarize how to adopt artificial intelligence in medical care.
• Discuss and identify solutions that may decrease disparity in medicine.
• Discuss the influence of device alarms on medical care.
• Describe the latest updates in medical device regulations.

Target Audience

This live activity is designated for a national and international audience of physicians, engineers and industry members, as well as other practitioners in the field of anesthesia seeking an update on the current and future state of anesthesia technology.

Joint Accreditation Statement

In support of improving patient care, this activity has been planned and implemented by Amedco LLC and Society for Technology in Anesthesia. Amedco LLC is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team. Amedco Joint Accreditation #4008163.

Physicians (ACCME) Credit Designation

Amedco LLC designates this live activity for a maximum of 18.00 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Pre-Conference Session

Challenges and Opportunities in Developing Anesthesia Products (for Industry ONLY)

Thursday, January 11, 2024 • 0800 - 1200

Experienced anesthesiologists have developed this course for Annual and Sustaining Corporate Members who may be new to the anesthesia market, as well as those with experience. The course is designed to provide a concise overview of the specialty and an opportunity to discuss the role of technology in a collegial (non-sales) environment. The course is intended to foster one of STA’s primary goals, which is to establish relationships between users and developers of technology.

This course will demonstrate the anesthesiologists’ interaction with patients and devices through a dynamic, interactive agenda. The day will include expert mini-lectures and group discussions on key aspects of the clinical specialty, including anesthesia ‘work’, behaviors driving equipment usage, the state of anesthesia-induced unconsciousness and machine function. OPEN TO INDUSTRY PARTICIPANTS ONLY. PRE-REGISTRATION REQUIRED.
# STA’24

## Thursday, January 11, 2024

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0700-0800</td>
<td>Challenges &amp; Opportunities Registration &amp; Breakfast (For Industry ONLY – Pre-Registration required)</td>
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<tr>
<td>0800-1700</td>
<td>Exhibitor Registration &amp; Setup</td>
</tr>
<tr>
<td>0800-1200</td>
<td>Challenges &amp; Opportunities in Developing Anesthesia Products (For Industry ONLY – Pre-Registration required)</td>
</tr>
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<td>Challenges &amp; Opportunities in Developing Anesthesia Products (For Industry ONLY – Pre-Registration required)</td>
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<tr>
<td>1200-1210</td>
<td>Panel Discussion</td>
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<tr>
<td>1215-1315</td>
<td>Industry Spotlight Luncheon Moderator: Justin Adams, BSEE, MBA</td>
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<tr>
<td>1315-1335</td>
<td>Session 3: Innovations and Regulations Moderator: Julian Goldman, MD</td>
</tr>
<tr>
<td>1335-1355</td>
<td>Example-Led Insights: Smart and Autonomous Systems Crossing Regulatory and Business Thresholds Kai Kuck, PhD</td>
</tr>
<tr>
<td>1355-1415</td>
<td>A Collaborative Community for Smart and Autonomous Medical Systems (SaAMS) Julian Goldman, MD, FASA</td>
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## Friday, January 12, 2024

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>0700-0800</td>
<td>Registration &amp; Breakfast</td>
</tr>
<tr>
<td>0800-1200</td>
<td>Session 1: Keynote Address Moderators: Elie Sarraf, MD, CM &amp; Priya Ramaswamy, MD, MEng</td>
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<tr>
<td>0815-0915</td>
<td>KEYNOTE: Developing a Grassroots EHR Sam Gharbi, MD</td>
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<tr>
<td>0915-0930</td>
<td>Break with Exhibitors &amp; Abstract Posters</td>
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<tr>
<td>0930-1030</td>
<td>Session 2: Auditory Alarms and Displays Moderator: Robert “Butch” Loeb, MD</td>
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<tr>
<td>1030-1040</td>
<td>Panel Discussion</td>
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<tr>
<td>1040-1100</td>
<td>Break with Exhibitors &amp; Abstract Posters</td>
</tr>
<tr>
<td>1100-1120</td>
<td>Session 3: Innovations and Regulations Moderator: Julian Goldman, MD</td>
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<tr>
<td>1120-1140</td>
<td>FDA's Approach to Balancing Innovation and Regulation Heather Agler, PhD</td>
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<tr>
<td>1140-1200</td>
<td>A Collaborative Community for Smart and Autonomous Medical Systems (SaAMS) Julian Goldman, MD, FASA</td>
</tr>
<tr>
<td>1200-1210</td>
<td>Panel Discussion</td>
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<td>Industry Spotlight Luncheon Moderator: Justin Adams, BSEE, MBA</td>
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<tr>
<td>1315-1335</td>
<td>Voice User Interface Driven AI and UX Elizabeth Rodwell, PhD</td>
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<tr>
<td>1335-1355</td>
<td>Effects and Outcomes of Different Tech Design Features or How We Account for Marginalized, Vulnerable Populations in UX Pamara Chang, PhD</td>
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<tr>
<td>1355-1415</td>
<td>Why is UI/UX Important for Anesthesia? Adeel Faruki, MD, MBA</td>
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<tr>
<td>1415-1425</td>
<td>Panel Discussion</td>
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<tr>
<td>1425-1455</td>
<td>Posters in a Minute: Moderated Poster Summaries Group A</td>
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<tr>
<td>1455-1525</td>
<td>Break with Exhibitors &amp; Abstract Posters</td>
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<tr>
<td>1525-1540</td>
<td>Session 5: Abstract Awards &amp; Presentations Moderator: Thomas Hemmerling, MD, MSc, DEAA</td>
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<tr>
<td>1540-1555</td>
<td>Best Clinical Application Award Presentation Thomas Hemmerling, MD, MSc, DEAA</td>
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<tr>
<td>1555-1610</td>
<td>Best of Show Award Presentation Thomas Hemmerling, MD, MSc, DEAA</td>
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<tr>
<td>1610-1710</td>
<td>Speed Networking with Corporate Members Moderators: Priya Ramaswamy, MD, MEng &amp; Elie Sarraf, MD, CM</td>
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## Saturday, January 13, 2024

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>0700-0800</td>
<td>Registration &amp; Breakfast</td>
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<tr>
<td>0800-1200</td>
<td>Session 6: DEI and Technology Solutions that Decrease Disparities Moderator: Charlene Blake, MD, PhD</td>
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<tr>
<td>0820-0840</td>
<td>Pulse Oximetry and Global Health Michael Lipnick, MD</td>
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<tr>
<td>0840-0900</td>
<td>Big Data to Reduce Disparities Clyde Matava, MBChB, DA, MMed</td>
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<tr>
<td>0900-0910</td>
<td>Panel Discussion</td>
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<tr>
<td>0920-0940</td>
<td>Session 7: Applying AI in Healthcare Moderator: Andrew Bishara, MD</td>
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<tr>
<td>0940-1000</td>
<td>Convolutional Neural Networks and Physiologic Signal Processing Richard Epstein, MD</td>
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<tr>
<td>1000-1020</td>
<td>Implementation Andrew Bishara, MD</td>
</tr>
<tr>
<td>1020-1030</td>
<td>Panel Discussion</td>
</tr>
<tr>
<td>1030-1100</td>
<td>Break with Exhibitors &amp; Abstract Posters</td>
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</tbody>
</table>
Session 8: Physiology and Design
Considerations of Space Flight
Moderator: Michael Jaffe, PhD
1100-1150
Physiologic and Medical Challenges of Space Flight
David Alexander, MD, MC, CFS, FAAEP
1150-1200
Human Spaceflight Environmental Control and Life Support
Christopher Matty, MS
1220-1230
Panel Discussion

1230-1350
STA Business Luncheon & 2024 J.S. Gravenstein Award Presentation
Jonathan Wanderer, MD, MPhil, FASA, FAMIA & J. Mark Ansermino, MBBCh

Session 9: Research Grant Presentations
Moderator: Thomas Hemmerling, MD, MSc, DEAA
1350-1435
2023 STA Research Grant Recipient

1435-1505
Posters in a Minute: Moderated Poster Summaries Group B

Session 10: Concurrent Sessions
1505-1530
Break with Abstract Posters

1530-1700
Hand on Design
Devika Patel, MS
1530-1700
Maker Faire
Patrick Kolbay PhD
1730-1930
STA Reception - The Tuck Room
(offsie - additional fee applies)

Session 11: Society for Computing and Technology in Anesthesiology (SCATA)
Moderator: Priya Ramaswamy, MD
1020-1050
Invited SCATA Speaker Presentation

Session 12: Leveraging Technology and Homebrew Applications
Moderator: Justin Adams, BSEE, MBA
1100-1120
Homebrew Ventilators Using Off the Shelf Hardware Store Components
Samsun Lampotang, PhD, FSSH, FAIMBE
1120-1140
Going From Homebrew to Institutional Adoption of a Technology
Joseph Rinehart MD
1140-1200
Arduino Board
Patrick Kolbay, PhD
1200-1210
Panel Discussion
1210
Meeting Adjourned

Sunday, January 14, 2024
0730-0815
Registration & Coffee

STA Engineering Challenge
Moderator: Jeffrey Mandel, MD, MS
0815-1000
Engineering Challenge
1000-1020
Break with Abstract Posters

Invited Faculty

Justin Adams, BSEE, MBA
Adeel Faruki, MD, MBA
University of Texas MD Anderson Cancer Center
University of Utah

Heather Agler, PhD
David Feinstein, MD, MS
US Food and Drug Administration
Beth Israel Deaconess Medical Center

David Alexander, MD, MC, CFS, FAAEP
Sam Gharbi, MD
NASA
Arya Health

J. Mark Ansermino, MBBCh
Julian Goldman, MD, FASA
University of British Columbia
Massachusetts General Hospital

Andrew Bishara, MD
Nate Greenbaum, MD
University of California, San Francisco
Beth Israel Deaconess Medical Center

Charlene Blake, MD, PhD
Thomas Hemmerling, MD, MSc, DEAA
University of California, San Francisco
McGill University

Pamara Chang, PhD
Michael Jaffe, PhD
University of Houston
Cardiorespiratory Consulting LLC

Richard Epstein, MD
Kai Kuck, PhD
University of Miami
University of Utah

Adeel Faruki, MD, MBA
Patrick Kolbay PhD
University of Texas MD Anderson Cancer Center
University of Utah

David Feinstein, MD, MS
Samsun Lampotang, PhD, FSSH, FAIMBE

Sam Gharbi, MD
Michael Lipnick, MD
Arva Health
University of California, San Francisco

J. Mark Ansermino, MBBCh
Julian Goldman, MD, FASA
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Massachusetts General Hospital

Andrew Bishara, MD
Nate Greenbaum, MD
University of California, San Francisco
Beth Israel Deaconess Medical Center

Charlene Blake, MD, PhD
Thomas Hemmerling, MD, MSc, DEAA
University of California, San Francisco
McGill University

Pamara Chang, PhD
Michael Jaffe, PhD
University of Houston
Cardiorespiratory Consulting LLC

Richard Epstein, MD
Kai Kuck, PhD
University of Miami
University of Utah

David Robinowitz, MD, MHS, MS
University of California, San Francisco

Elizabeth Rodwell, PhD
University of Houston

Elie Sarraf, MD, CM
Penn State Health, Milton S. Hershey Medical Center

Joe Schlesinger, MD, FCCM
Vanderbilt University

John Sudkamp, MD
St. Anthony’s Memorial Hospital

Jonathon Wanderer, MD, MPhil, FASA, FAMIA
Vanderbilt University

President, STA
MAIL OR FAX REGISTRATION FORM
This is how your name will appear on your name badge. *Required fields.

*FIRST NAME: ___________________________ *LAST NAME: ___________________________

*CREDENTIAL(S): ___________________________

*COMPANY/INSTITUTIONAL AFFILIATION: ___________________________

*ADDRESS: ___________________________________________

*CITY: ___________________________ *STATE/PROVINCE: ___________________________ *ZIP: ___________________________ *COUNTRY: ___________________________

*PHONE: ___________________________

*EMAIL ADDRESS: ___________________________

Special Needs:  ☐ Hearing Impaired  ☐ Sight Impaired  ☐ Other: ___________________________

☐ Dietary (Please Specify)

REGISTRATION FEES
Registration fee includes course materials, 2 continental breakfasts, 2 lunches and 1 cocktail reception.

<table>
<thead>
<tr>
<th>Early Bird by 12/1/23</th>
<th>After 12/1/23</th>
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</thead>
<tbody>
<tr>
<td>STA Member Registration (membership dues must be paid for 2024)</td>
<td>$700</td>
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<tr>
<td>STA Lifetime Member Registration (for STA Life Members who want to contribute extra to the Society)</td>
<td>$850</td>
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<tr>
<td>*Non-Member Registration</td>
<td>$850</td>
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<tr>
<td>Resident Registration</td>
<td>$250</td>
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</tbody>
</table>

*Non-member fee includes 1 year of membership to qualifying physicians.

A LA CARTE ITEMS
☐ Additional Thursday Reception Event Ticket | $50
☐ Spouse/Guest Registration | $325
☐ 2024 Membership Dues Renewal | $150
☐ Saturday Reception at The Tuck Room | $75
☐ Lifetime Member Status | $150

SUBTOTAL: ___________________________

PAYMENT MUST ACCOMPANY REGISTRATION

TOTAL DUE: ___________________________

METHOD OF PAYMENT
The following methods of payment are acceptable for the registration fee:

1. Check: Made payable to STA. There is a $25 returned check fee.
   ☐ Check Included

2. Credit Card Payments:  ☐ Visa  ☐ MasterCard  ☐ Discover  ☐ AMEX

NAME ON CARD: ___________________________

CARD #: ___________________________________________ SECURITY CODE: ___________________________ EXP. DATE: ___________________________ /

SIGNATURE: ___________________________
STA '24
STA ANNUAL MEETING

January 11-14, 2024
Royal Sonesta Galleria
2222 West Loop South
Houston, TX 77027

Program Chairs:
Priya Ramaswamy, MD, MEng
and Elie Sarraf, MD, CM

#STA24Houston

Reservation Phone: 713-627-7600
Room Rate: $189/night
Reservation Deadline: December 18, 2023

Visit www.stahq.org to book your hotel accommodations online!