



# EXHIBITOR GUIDE

## ARS 67th Annual Meeting

October 1-2, 2021 | Millennium Biltmore Hotel, Los Angeles, CA





JOSEPH K. HAN, MD, FARS

## Presidential Welcome

On behalf of the American Rhinologic Society, it is my pleasure to welcome you to Los Angeles and the 67th ARS Annual Meeting. In July, we had a successful and well-attended in-person Summer Sinus Symposium in Austin despite the persistent pandemic. The American Rhinologic Society is committed to providing first class educational meetings and materials for our members, and I am confident that you will be very pleased with our Annual Meeting program. I want to recognize and thank Rodney Schlosser, the President-Elect and Program Chair, along with the program committee who have put together a fantastic scientific program that features the best scientific abstracts, interesting keynote speakers, and several informative and clinically relevant panels. Also, a very special thank you to Wendi, Susan, and Tammy for their tirelessly work behind the scenes,

during these challenging times that continue to be ever-changing.

During these difficult times, we have become more aware and appreciative of the blessings we have in our lives. I want to thank all our ARS members for your continued support during this unusual thim the past couple of years. I would also like to acknowledge and thank our many corporate sponsors who have continued to generously support our society that is focused on rhinologic, allergic, and skull base diseases. Without their partnership, we would not be able to bring such high quality virtual and in-person meetings for our members. During our meetings, please visit them in the exhibit hall to express our appreciation for their support.

With the arrival of our annual meeting, my presidency is coming to an end. It has been an honor and pleasure to serve our wonderful society. We have a wonderful group of volunteer physicians that make our society great. Also, our society provides an environment full of friendship and camaraderie as well as provide a platform for discussing the most up to date scientific information. The current tough times will pass, and I am certain our organization will continue to achieve enormous things in the future. I want to thank you for the chance to serve as a steward of such a wonderful organization.

I look forward to seeing you in Los Angeles!

Joseph K Han, MD, FARS

*President, American Rhinologic Society*



RODNEY SCHLOSSER, MD, FARS

## Welcome from the Program Chair

Join us!

Shake off the COVID blues as the American Rhinologic Society plans to resume IN PERSON gatherings at our Annual Meeting in Los Angeles this October! We have a great program planned and the highlight of the meeting will be TWO David W. Kennedy Lecturers....

In honor of David's retirement from operating, we are pleased to announce that he will be giving a keynote address reflecting upon more than three decades of experience in the world of rhinology. We will also be joined by Louis Shipley for our 2nd Kennedy Keynote Lecture. Louis is a technology CEO and lecturer at Harvard Business School and MIT Sloan School of Management. He will be discussing "Leveraging disruptive technology in a post-pandemic world".

Our wide variety of panels will include an ARS/AAOA panel on the Burden of rising healthcare costs – A case study of CRSwNP, Role of the rhinologist in sleep disorders, Rhinology worldwide, Building a successful rhinology practice, Digital patient engagement, and Omics and biomarkers: Impact upon patient care. This year we welcome our Guest Countries' colleagues from South Korea. In addition, the ARS' welcomes the AAO-HNS' Guest Countries, Poland, Ghana, Australia, Brazil, and New Zealand. All of this is in addition to the many original research presentations that we are used to seeing at ARS meetings. Please come out and

enjoy the company of your fellow rhinologists! As part of this specialty-wide celebration, the Academy will be holding a Combined President's Reception this year, on Saturday night October 2nd, which will be co-hosted by the Presidents of the Academy, ARS, AOS, and ANS. We are honored and pleased to join the AAO-HNS for this event. AAO-HNS Meeting registrants will receive an event ticket with their paid registration. The ARS is pleased to offer significantly discounted tickets to the Red Carpet Event via the ARS registration page. There is no limit on ticket purchases. Registration and Housing are now OPEN. On behalf of myself, the Program Committee, and the Board of Directors, we are looking forward to seeing you in Los Angeles. Additional questions, please contact our Executive Administrator, Wendi Perez at [Wendi@american-rhinologic.org](mailto:Wendi@american-rhinologic.org) or 973-545-2735.

Thank you.

Rodney Schlosser, MD, FARS  
*President-Elect/Program Chair*



## Welcome from the Executive Vice President



MICHAEL G. STEWART,  
MD, MPH, FARS

Thank you for your support of the ARS during these challenging times. All ARS members should be very proud of the remarkable efforts of so many of our members and leaders to continue the mission of the Society.

I want to recognize ARS President Joseph Han, MD, and ARS President-Elect and Program Chair Rodney Schlosser, MD, who have done tremendous work to keep the Society on track and to allow us to hold the 67th Annual Meeting live and in person in Los Angeles. The ARS actually hosted, this summer, perhaps the first significant in-person meeting in our specialty since the pandemic started, with the Summer Sinus Symposium in Austin, TX. The course co-directors – Drs. Greg Davis, Marc Dubin and Doug Reh – did an

amazing job of coordination and management and we had a very successful meeting with great education and great fellowship, and no Covid related issues. Also of course our ARS Administrative Staff of Wendi Perez, Susan Arias and Tammy Lorimer are indispensable to the Society as well!

This year's meeting program contains a rich combination of new research, invited lectures and panel discussions, and we are excited to bring it to you.

Welcome to Los Angeles and I hope you enjoy the 67th Annual Meeting!

Michael G. Stewart, MD, MPH, FARS  
*Executive Vice President*



## ARS 67th Annual Meeting Industry Supporters

The American Rhinologic Society gratefully acknowledges the following companies for their support of the 67th Annual Meeting

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### Exhibitors

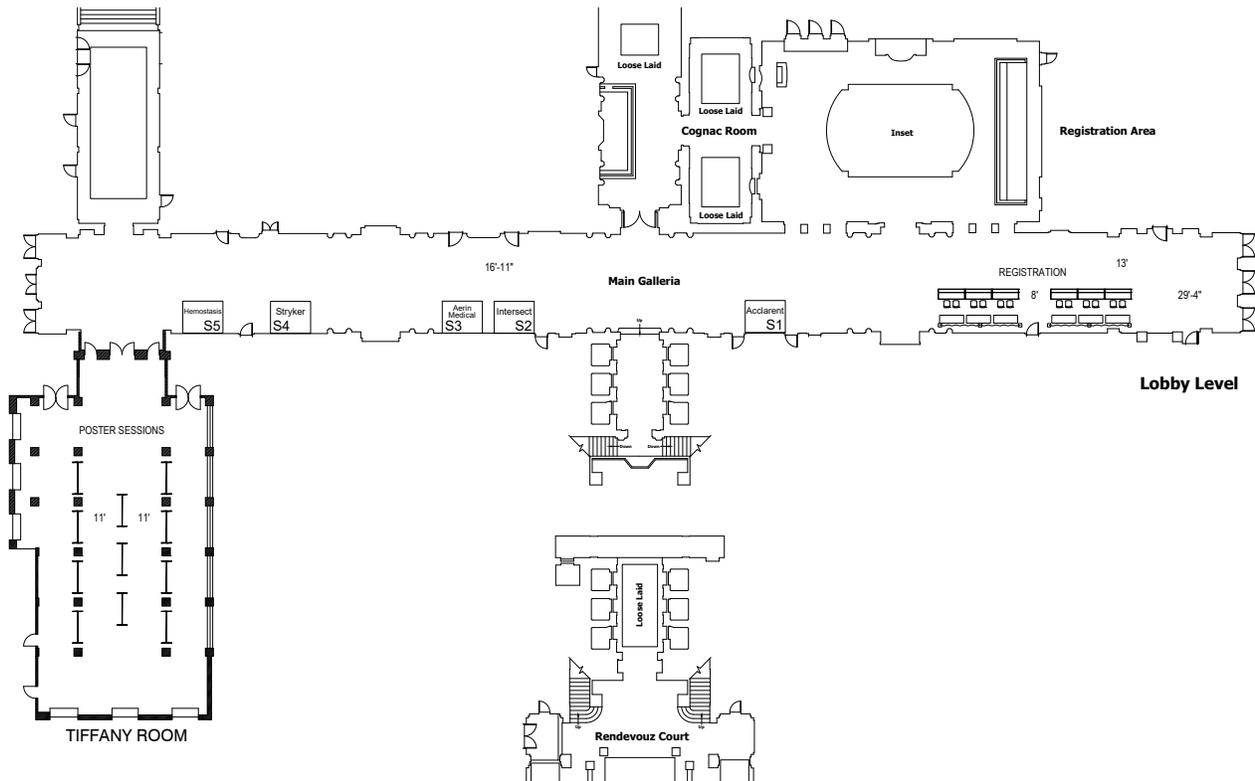
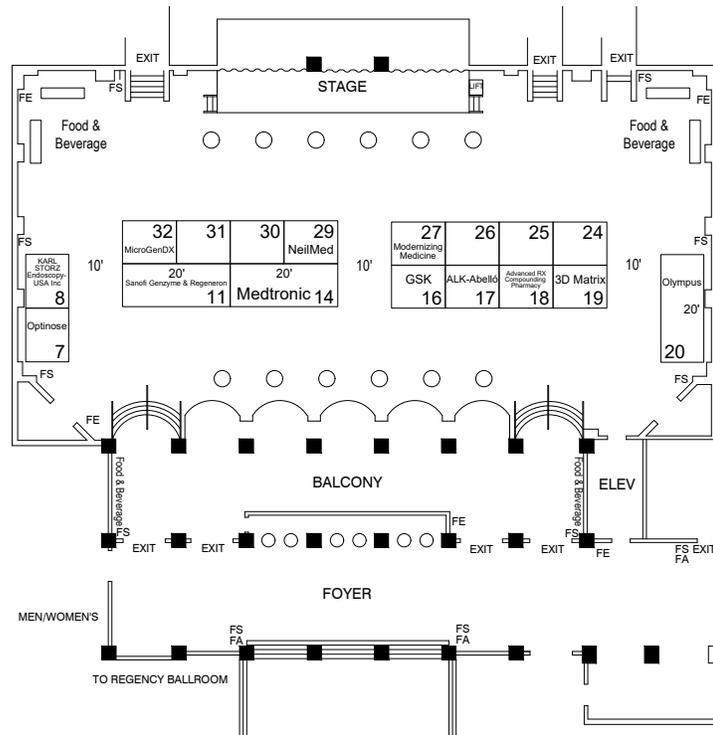
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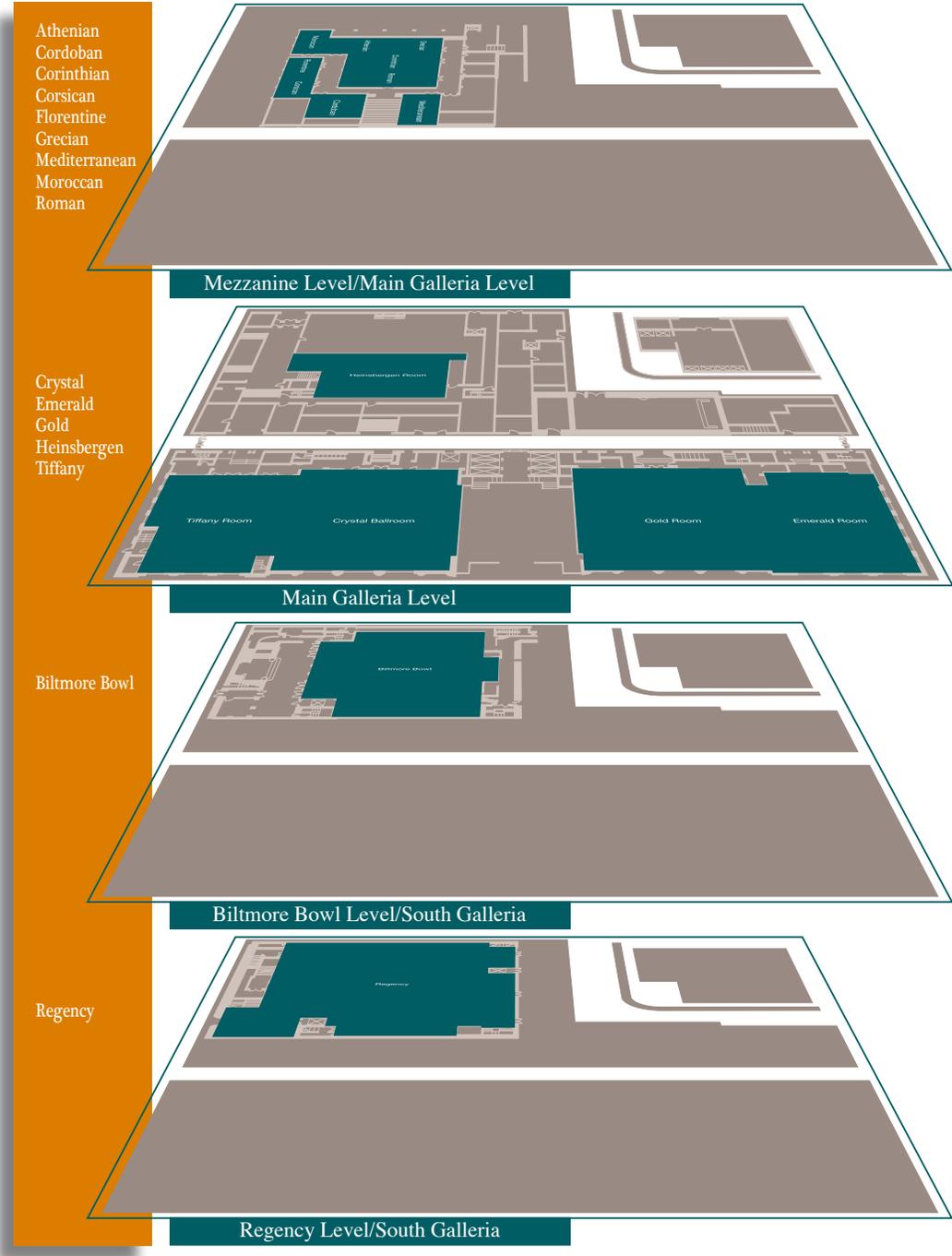
MicroGenDX  
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Optinose  
Sanofi Genzyme & Regeneron  
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# Exhibit Hall & Main Galleria



# Floor Plan

## Meeting Room Locations



## Industry Sessions

### Friday, October 1, 2021

12:00 pm – 12:50 pm

#### **Acclarent Lunch Symposium**

**Location:** Heinsbergen Room

**Title:** “AI in ENT – The Role of Navigation in Surgical Training”

**Speakers:** Troy Woodard, MD, FARS; Raj Sindwani, MD, FARS; James Palmer, MD, FARS; Nithin Adappa, MD, FARS

*This is a non-CME event sponsored by Acclarent. It is neither sponsored by nor endorsed by the ARS.*

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12:00 pm – 12:50 pm

#### **GSK**

**Location:** Gold Room

**Title:** “Evidence for Use of a Biologic in the Management of Chronic Rhinosinusitis with Nasal Polyps (CRSwNP)”

**Description:** this program will review the clinical evidence for the use of a biologic, non-surgical treatment option in adult patients with CRSwNP. The presentation will incorporate a patient case and discuss the role of eosinophilic inflammation in recurrent nasal polyps.

**Speakers:** Christine Franzese, MD, FARS

*This is a non-CME event sponsored by GlaxoSmithKline. It is neither sponsored by, nor endorsed by, the ARS.*

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### Saturday, October 2, 2021

7:00 am – 7:50 am

#### **Optinose Breakfast Symposium**

**Location:** Gold Room

**Title:** “XHANCE: An Emerging Stepped-Care Paradigm for the Treatment of Nasal Polyps”

**Description:** Use a case based approach to understand the efficacy and safety of XHANCE in the treatment of Nasal Polyps, and evaluate an emerging approach for stepped-care management of Nasal Polyps

**Speakers:** Joseph Han, MD, FARS

*This is a non-CME event sponsored by Optinose. It is neither sponsored by, nor endorsed by, the ARS.*

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7:00 am – 7:50 am

#### **A Product Theater Sponsored by Sanofi Genzyme and Regeneron**

**Location:** Crystal Ballroom

**Title:** “Explore a Different Path to Control Chronic Rhinosinusitis With Nasal Polyposis in Your Patients With Inadequately Controlled Disease”

**Description:** Engage with our presenter as they discuss a treatment option for patients with inadequately controlled chronic rhinosinusitis with nasal polyposis (CRSwNP). They will discuss the underlying Type 2 inflammation that contributes to the disease burden. The presenter will apply these concepts into their case-based review of a patient with CRSwNP.

**Speaker:** Jayant Pinto, MD

*This is a non-CME event sponsored by Sanofi Genzyme and Regeneron. It is neither sponsored by, nor endorsed by, the ARS.*

## PROGRAM AT A GLANCE

## Thursday, September 30, 2021

7:00 am – 1:00 pm  
Residents Course – Didactic Session  
Tiffany Ballroom  
*By Invitation Only*

1:30 pm – 4:20 pm  
Residents Dissection Lab  
Emerald Ballroom  
*By Invitation Only*

5:30 pm – 7:00 pm  
Residents Reception  
John F. Kennedy Penthouse

## Friday, October 1, 2021 7:00 am – 1:00 pm

7:00 am - 8:00 am  
Board of Directors Breakfast  
Emerald Ballroom

8:00 am - 12:00  
Board of Directors Meeting  
Emerald Ballroom

## Friday, October 1, 2021 1:00 pm – 5:00 pm General Session Crystal Ballroom

1:00 pm - 1:15 pm  
Presidential Address & Welcome  
Joseph Han, MD, FARS

1:15 pm - 2:00 pm  
17th Annual David W. Kennedy Lecture  
Introduction: Rodney Schlosser, MD, FARS  
Guest Speaker: N. Louis Shipley, Harvard Business School  
"Leveraging disruptive technology in a post pandemic world"

2:00 pm - 2:15 pm  
Awards Ceremony: Robert Kern, MD, FARS;  
Benjamin Bleier, MD, FARS; Jivianne Lee, MD,  
FARS; Jean Kim, MD, FARS

### Top Clinical Abstracts

*Moderators: Dana Crosby, MD, FARS; Jean Kim, MD, FARS*

2:15 pm - 2:22 pm  
PK evidence of consistent drug release from long-acting implantable corticosteroid matrices for CRS  
Randall A. Ow, MD

2:22 pm - 2:29 pm  
Outcomes of Dupilumab treatment versus FESS for CRSwNP  
Harish Dharmarajan, MD

2:29 pm - 2:36 pm  
CRS-PRO and SNOT 22 correlations with type 2 inflammatory mediators in chronic rhinosinusitis  
Samuel Racette, MD

2:36 pm - 2:43  
Dupilumab and ASA desensitization CEA  
Michael Yong, MD, MPH, MBA

2:43 pm - 2:50 pm  
Predicting malignant transformation of inverted papilloma using image-based machine learning  
Angela Yang, BS

2:50 pm - 3:00 pm  
Q&A

3:00 pm - 3:30 pm  
BREAK

### Top Basic Science Abstracts

*Moderators: Stella Lee, MD; Cecelia Damask, DO; Justin Turner, MD, FARS*

3:30 pm - 3:37 pm  
LPS decreases CFTR open probability and mucociliary transport through ROS  
Do-Yeon Cho, MD

3:37 pm - 3:44 pm  
Transcriptional changes in chronic rhinosinusitis with asthma  
Amarbir Gill, MD

3:44 pm - 3:51 pm  
Cystatin-induced coagulation and fibrinolysis pathway derangements in a murine model of CRSwNP  
Alan Workman, MD, MTR

3:51 pm - 3:58 pm  
Steroid responsive and steroid resistant cytokines in AERD  
Michael Kohanski, MD, PhD

3:58 pm - 4:05 pm  
A human paranasal sinus model of SARS-CoV-2 infection  
Wesley Stepp, MD, PhD

4:05 pm - 4:15 pm  
Q&A

4:15 pm - 5:00 pm  
Panel: "Lessons Learned: Reflections of Seasoned Rhinologists"  
Moderator: Eugenia Vining, MD  
Panelists: Marilene Wang, MD, FARS; James Stankiewicz, MD, FARS; Michael Setzen, MD, FARS; Donald Lanza, MD, FARS

17th Annual David W. Kennedy Lecture  
Introduction: Rodney Schlosser, MD, FARS  
Guest Speaker: N. Louis Shipley, Harvard Business School  
"Leveraging disruptive technology in a post pandemic world"

5:30 pm - 7:00 pm  
President's Reception and Poster Reception  
Tiffany Room

## PROGRAM AT A GLANCE

## Saturday, October 2, 2021 8:00 am – 12:00 pm Breakout Room A Gold Room

### Biomarkers

*Moderators: Andrew Lane, MD, FARS; Victoria Lee, MD; Bruce Tan, MD*

8:00 am - 8:07 am

Chronic rhinosinusitis mouse model  
John Lee, MD

8:07 am - 8:14 am

Urinary leukotriene E4 as a biomarker for chronic rhinosinusitis clinical subtypes  
Beau Idler, BA

8:14 am - 8:21 am

Central compartment atopic disease and allergic rhinitis have similar allergen patterns  
Bianca Rullan Oliver, MD

8:21 am - 8:28 am

Biomarker model for predicting type 2 in patients diagnosed with CRS  
Austin Heffernan, MD Candidate

8:28 am - 8:35 am

Tissue eosinophilia association with obesity  
Lindsey Ryan, MD

8:35 am - 8:45 am

Q&A

8:45 am - 9:30 am

Panel: "Digital patient engagement for the rhinologist"  
Moderator: Martin Citardi, MD, FARS  
Panelists: Alexander Farag, MD, FARS; Chirag Patel, MD, FARS

9:30 am - 10:00 am

BREAK

### Cystic Fibrosis

*Moderators: Do-Yeon Cho, MD; Michael Kohanski, MD*

10:00 am - 10:07 am

Pseudomonas isolates from CRS with CF develop increased virulence under anaerobic conditions  
Do-Yeon Cho, MD

10:07 am - 10:14 am

CF olfaction before and after elexacaftor-tezacaftor-ivacaftor  
Daniel Bacon, BS

10:14 am - 10:21 am

Comparison of endoscopic sinus surgery timing in lung transplant patients with Cystic Fibrosis  
Joseph Johnson, ScB

10:21 am - 10:28 am

Topical antibiotics in chronic rhinosinusitis: A prospective pilot study  
Christopher Low, MD

10:28 am - 10:35 am

Olfactory dysfunction in people with Cystic Fibrosis  
Daniel Beswick, MD, FARS

10:35 am - 10:45 am

Q&A

### Miscellaneous Rhinology

*Moderators: Alissa Kanaan, MD; Thomas Higgins, MD, FARS; Jordan Teitelbaum, MD*

10:45 am - 10:52 am

Transnasal endoscopic management of frontal sinus anterior table fractures improves cosmetic quality  
Natalie Derise, MD

10:52 am - 10:59 am

Clinical features and diagnoses of patients with primary complaints of facial pain  
Andrea Plawecki, MD

10:59 am - 11:06 am

Outcome of immunoglobulin replacement therapy in children with rhinosinusitis  
John Behnke, MD

11:06 am - 11:13 am

Contralateral sinonasal symptoms following unilateral ESS  
Kevin Hur, MD

11:13 am - 11:23 am

Q&A

### Diet and Drip

*Moderators: Nicholas Rowan, MD; Angela Donaldson, MD, FARS; Edward McCoul, MD, FARS*

11:23 am - 11:30 am

Otolaryngic sensory loss as a measure of frailty among older U.S. adults  
Nicholas Rowan, MD

11:30 am - 11:37 am

Dietary habits and rhinitis  
Darren Cheng, MS

11:37 am - 11:44 am

Diagnostic workup of patients with primary complaint of post-nasal drip  
Hector Perez, MD

11:44 am - 11:51 am

Histopathologic features of chronic rhinosinusitis in diabetic patients  
Vidit Talati, MD

11:51 am - 12:00 pm

Q&A

## PROGRAM AT A GLANCE

**Saturday,  
October 2, 2021  
8:00 am – 12:00 pm  
Breakout Room B  
Crystal Ballroom**

### Healthcare Economics

*Moderators: Jonathan Ting, MD, FARS; Joshua Levy, MD, FARS; Kara Detwiller, MD, FARS*

8:00 am - 8:07 am  
Resource utilization analysis after PPSV23 vaccination in antibody deficient CRS and RABS patients  
Nrusheel Kattar, MD

8:07 am - 8:14 am  
Rhinology Medicare reimbursements have not been keeping up with inflation  
Sina Torabi, MD

8:14 am - 8:21 am  
Impact of gender on outcomes and cost in pediatric acute rhinosinusitis management  
Vraj P. Shah, BS

8:21 am - 8:28 am  
Impact of operative time on endoscopic sinonasal surgery  
Ariel Omiunu, BS

8:28 am - 8:35 am  
Procedural and geographic variation in price markup of common rhinology procedures  
Rahul A. Patel, Medical Student

8:35 am - 8:45 am  
Q&A

### Adjunct Therapies for CRS

*Moderators: Lauren Roland, MD; Christine Franzese, MD, FARS; Daniel Beswick, MD, FARS*

8:45 am - 8:52 am  
Long-acting implantable corticosteroid matrix for CRS: LANTERN study 6-month post-treatment outcomes  
Joanne Rimmer, MBBS, MA

8:52 am - 8:59 am  
The Effect of EDS-FLU on objective and subjective outcomes for patients with CRSwNP  
Randall Ow, MD, FARS

8:59 am - 9:06 am  
The potential for cortisol suppression with high dose mometasone irrigations  
Hannah Brown, BS

9:06 am - 9:13 am  
Type 2 inflammation decreases in CRSwNP after ESS with mometasone-eluting stent placement  
Bruce K. Tan, MD

9:13 am - 9:20 am  
Six months of aspirin therapy acts as an indicator of long-term outcomes in AERD  
Siddhant H. Tripathi, BS

9:20 am – 9:27 am  
Real world effectiveness of Dupilumab in CRSwNP  
Yi Zhang

9:27 am - 9:35 am  
Q&A

9:30 am - 10:00 am  
BREAK

10:00 am - 10:45 am  
Panel: "Omics and biomarkers: How they can impact patient care"  
Moderator: Justin Turner, MD, FARS  
Panelists: Bruce Tan, MD; Amber Luong, MD, PhD, FARS; Benjamin Bleier, MD, FARS

### Miscellaneous Rhinology

*Moderators: Kristine Smith, MD; Christian Soneru, MD; Sanjeet Rangarajan, MD, FARS*

10:45 am - 10:52 am  
Practice patterns and provider satisfaction in a virtual rhinology and skull base surgery clinic  
Emily Papazian, Medical Student

10:52 am - 10:59am  
Post-operative sinus polyp scale (POPS)  
Dhruv Sharma, MD

10:59 am - 11:06 am  
Modeling observed nasal nitric oxide levels  
Dennis Shusterman, MD, MPH

11:06 am - 11:13  
The role of extraoral taste receptors in chronic rhinosinusitis: A systematic review  
Nicholas Rowan, MD

11:13 am - 11:23  
Q&A

### Complications

*Moderators: Theodore Schuman, MD, FARS; Jeffrey Suh, MD, FARS; Stacey Gray, MD, FARS*

11:23 am - 11:30 am  
Systemic corticosteroids-related adverse outcomes in chronic rhinosinusitis with nasal polyposis  
Greg Davis, MD, FARS

11:30 am - 11:37 am  
Avascular necrosis and oral corticosteroid use  
David Poetker, MD, FARS

11:37 am - 11:44 am  
Odontogenic sinusitis causing extra-sinus complications  
Jennifer Douglas, MD

11:44 - 11:51 am  
Correlation of symptoms by sinus subsite  
Arthur Wu, MD, FARS

11:51 am - 12:00 pm  
Q&A

## PROGRAM AT A GLANCE

## Saturday, October 2, 2021 8:00 am – 12:00 pm Breakout Room C Emerald Ballroom

### Skull Base Malignancies

*Moderators: Kent Lam, MD, FARS; Jose Mattos, MD; Jeremiah Alt, MD, PhD, FARS*

8:00 am - 8:07 am

Treatment facility volume and esthesioneuroblastoma outcomes  
Khodayar Goshtasbi, MS

8:07 am - 8:14 am

Effect of hospital safety-net burden on survival of sinonasal squamous cell carcinoma  
Christopher Tseng, BS

8:14 am - 8:21 am

Sociodemographic factors in patients with esthesioneuroblastoma  
Ariel Omiunu, BS

8:21 am - 8:28 am

Length of stay after surgery as a predictor of survival for sinonasal squamous cell carcinoma  
Jeff Gao, BS

8:28 am - 8:38 am

Q&A

### Patient Demographics

*Moderators: Charles Riley, MD; Naweed Chowdhury, MD; Marc Dubin, MD, FARS*

8:38 am - 8:45 am

Demographic variations of participants in rhinitis clinical trials  
Neil Mehta, BS

8:45 am - 8:52 am

Effect of race in epistaxis treatment  
Avneet Randhawa, BS

8:52 am - 8:59 am

Characterization of biologics patients  
Matthew Lelegren, MD

8:59 am - 9:06 am

Demographics in chronic rhinosinusitis subtypes  
Cheng Ma, BS

9:06 am - 9:16 am

Q&A

9:16 am - 10:00 am

Panel: "The Role of the Rhinologist in Sleep Disorders"

Moderator: Andrew Goldberg, MD, FARS

Panelists: Jolie Chang, MD; Maria Suurna, MD; Ilene Rosen, MD

10:00 am - 10:30 am

BREAK

### Olfaction

*Moderators: Carol Yan, MD; David Poetker, MD, FARS*

10:30 am - 10:37 am

Population differences between COVID-19 and post-viral olfactory dysfunction: Case-control study  
Nikita Chapurin, MD, MHS

10:37 am - 10:44 am

Chemesthesis compensates for decreased flavor sensation due to chemosensory dysfunction in COVID-19  
Sameer Kini, MD

10:44 am - 10:51 am

Measurement of healthy utility state values in COVID-19 related anosmia  
Mena Said, MD

10:51 am - 10:58 am

Cognitive impairment and awareness of olfactory dysfunction: NHANES 2013–2014  
Srivats Narayanan, Medical Student

10:58 am - 11:05 am

Parosmia and health utility state values for COVID-19 related olfactory loss  
Sophie Jang, Research Fellow

11:05 am - 11:15 am

Q&A

## Nasal Valve, Perforation and Empty Nose

*Moderators: David Jang, MD, FARS; Arthur Wu, MD, FARS; Jayakar Nayak, MD*

11:15 am - 11:22 am

Temperature-controlled RF treatment of the NV for NAO: A randomized controlled trial  
Stacey Silvers, Dr.

11:22 am - 11:29 am

Temperature-controlled RF treatment of nasal valve for nasal airway obstruction  
William Yao, MD, FARS

11:29 am - 11:36 am

Endoscopic techniques for nasal septal perforation repair: A systematic review  
Arron Gravina, DO

11:36 am - 11:43 am

Surgical repair of nasal septal perforations  
Janmaris Marin, MD

11:43 am - 11:50 am

Mental health burden of empty nose syndrome  
Meredith Meyer

11:50 am - 12:00 pm

Q&A

## Saturday, October 2, 2021 8:00 am – 12:00 pm Breakout Room D Bernard's Room

### Rhinology Malignancies

*Moderators: Garret Choby, MD, FARS; Nyall London, MD, FARS*

8:00 am - 8:07 am

Nasal endoscopy and aerosol generation  
Amarbir Gill, MD

8:07 am - 8:14 am

Surgical approach is associated with complication rate in sinonasal malignancy: A multi-center study  
Daniel Beswick, MD, FARS

## PROGRAM AT A GLANCE

8:14 am - 8:21 am

Determinants of survival in sinonasal and skull base chondrosarcoma  
Ryan Rimmer, MD

8:21 am - 8:28 am

Healthcare expansion and rhinologic malignancies  
Alexandria L. Itrace

8:28 am - 8:38 am

Q&A

### Rhinology Workforce

*Moderators: Douglas Reh, MD, FARS; Erin O'Brien, MD, FARS; Mathew Geltzeiler, MD, FARS*

8:38 am - 8:45 am

Gender gap among rhinology and skull base surgeons  
Patricia Johnson, MD

8:45 am - 8:52 am

Socioeconomic trends in rhinology and endoscopic skull base surgery in 2020  
Sara Sun, MD

8:52 am - 8:59 am

Predictors of academic career placement and scholarly impact in fellowship-trained rhinologists  
Nicholas Rowan, MD

8:59 am - 9:06 am

A geospatial analysis of the rhinologist workforce in the United States  
Samir Hassanin, BA

9:06 am - 9:16 am

Q&A

### Rhinology Outcomes

*Moderators: Waleed Abuzeid, MD; Joshua Levy, MD, FARS; Zara Patel, MD, FARS*

9:16 am - 9:23 am

Factors associated with postoperative outcomes in pituitary surgery  
Khodayar Goshtasbi, MS

9:23 am - 9:30 am

Ecological momentary assessment of sinonasal outcomes  
Victoria Lee, MD

9:30 am - 9:37 am

Endoscopic sinus surgery in patients with comorbidities  
Ariel Omiunu, BS

9:37 am - 9:44 am

A cross-sectional analysis of patient information and education on sinusitis  
Kolin Rubel, MD

9:44 am - 9:51 am

The use of SN-5 to differentiate chronic rhinosinusitis and chronic adenoiditis in children  
Norman Orabi, MD

9:51 am - 10:00 am

Q&A

10:00 am - 10:30 am

BREAK

### Skull Base

*Moderators: Corinna Levine, MD, FARS; Benjamin Bleier, MD, FARS; Raj Sindwani, MD, FARS*

10:30 am - 10:37 am

Outcomes of endoscopic resection of pediatric craniopharyngiomas  
Tapan Patel, MD

10:37 am - 10:44 am

Occult nodal involvement in sinonasal squamous cell carcinoma  
Samer Elsamna, BA

10:44 am - 10:51 am

Race, ethnicity, and socioeconomic status in esthesioneuroblastoma outcomes  
Rahul Sharma, BS

10:51 am - 10:58 am

Impact of distant metastasis in sinonasal squamous cell carcinoma  
Samer Elsamna, BA

10:58 am - 11:05 am

Nasal cavity squamous cell carcinoma  
Blaine Smith

11:05 am - 11:15 am

Q&A

### Skull Base Reconstruction

*Moderators: Edward Kuan, MD, FARS; Eric Wang, MD, FARS; Bradford Woodworth, MD, FARS*

11:15 am - 11:22 am

Endoscopic repair of anterior encephaloceles: A cost-effective alternative to craniotomy  
Matthew Wu, BS

11:22 am - 11:29 am

The role of fascia lata in complex skull base reconstruction: Emergence of a new workhorse  
Firas Sbeih, MD

11:29 am - 11:36 am

False negative rate of intrathecal fluorescein in CSF leak repair  
Jeffrey Radabaugh, MD

11:36 am - 11:43 am

Systematic review of olfactory preservation techniques in nasoseptal flap harvest  
Suat Kilic, MD

11:43 am - 11:50 am

Endoscopic endonasal eustachian tube obliteration for cerebrospinal fluid rhinorrhea  
Ryan Rimmer, MD

11:50 am - 12:00 pm

Q&A

12:00 pm - 1:00 pm

(Heinsbergen Room)

#### Women in Rhinology / Residents & Fellows / Mentorship Lunch Program

Guest Speaker: Nina Shapiro, MD; Professor of Head and Neck Surgery, David Geffen School of Medicine at UCLA

Director of Pediatric Otolaryngology, Mattel Children's Hospital UCLA

"Medical Communication to the Non Medical Audience: Something We All Need to Practice"

## PROGRAM AT A GLANCE

## Saturday, October 2, 2021 1:00 pm – 4:20 pm General Session Crystal Ballroom

1:00 pm - 1:40 pm

Panel: "Building a successful rhinology practice"

Moderator: Thomas Higgins, MD, FARS

Panelists: Greg Davis, MD, FARS; Winston Vaughan, MD, FARS; Danielle Warner, MD; Marc Dubin, MD, FARS; Douglas Reh, MD, FARS

1:40 pm - 2:20 pm

Rhinology Worldwide Panel

Jivianne Lee, MD, FARS; David Gudis, MD, FARS; Brent Senior, MD, FARS; Kibwei McKinney, MD; Angela Donaldson, MD, FARS; Jose Mattos, MD

2:20 pm - 3:00 pm

An ARS/AAOA Panel: "The US burden of rising health care cost - A case study in CRSwNP treatment"

Moderator: Michael Stewart, MD, FARS

Panelists: Lauren Roland, MD; Joshua Levy, MD, FARS; Michael Platt, MD

3:00 pm - 3:30 pm

BREAK

3:30 pm - 3:40 pm

Business Meeting and Presidential Citation

Joseph Han, MD, FARS, Michael Stewart, MD, FARS

3:40 pm - 4:20 pm

David W. Kennedy Lecture

Introduction: Rodney Schlosser, MD, FARS

Guest Speaker: David W. Kennedy

"The introduction of endoscopic sinus surgery and the evolution of rhinology as a specialty"

6:00 pm - 8:00 pm

ARS Co-Sponsor of the 125th Anniversary Celebration of the AAO-HNS Red Carpet Joint Specialty Society President's Reception at the XBox Plaza in the heart of L.A. Live

## POSTERS

Poster A001

**70-degree endoscope in maxillary anrostomy**  
Firas Hentati, MD

Poster A002

**Acute exacerbations, a CRS patient's perspective**  
Katie Phillips, MD

Poster A003

**Balloon septoturbinotomy**  
Alexander Farag, MD, FARS

Poster A004

**Baseline blood eosinophil level is not a biomarker for CRSwNP severity or response to dupilumab**  
Claus Bachert, MD

Poster A005

**Caffeine consumption and rhinitis**  
Michael DeBaakey, MS

Poster A006

**Canine endoscopic sinonasal surgery**  
Charles Riley, MD

Poster A007

**CFTR mutations in patients with CRS: A systematic review**  
Michael Yong, MD, MPH, MBA

Poster A008

**Chronic rhinosinusitis with nasal polyposis patients receiving monoclonal antibody therapy**  
Mohamad Babi, MD

Poster A009

**Differences in clinical presentation for patients with frontal sinus mucoceles**  
Dhruv Sharma, MD

Poster A010

**Dupilumab improves sense of smell in CRSwNP patients with 0, 1, 2, or ≥3 prior surgeries**  
Joaquim Mullol, MD, PhD

Poster A011

**Endoscopic orofino-antral fistula repair**  
Yu-Hsuan Lin, MD

Poster A012

**Endoscopic removal of a nasal septal pleomorphic adenoma: A case report and literature review**  
Hannah Case

Poster A013

**ENT visits and procedures in COVID recovered**  
Dennis Tang, MD

Poster A014

**Epistaxis in CPAP patients**  
Theodore Klug, MD, MPH

Poster A015

**Impact of asthma status on outcomes and cost in pediatric acute rhinosinusitis management**  
Vraj Shah, BS

Poster A016

**Impact of asthma status on outcomes and cost in pediatric nasal polyp management**  
Vraj Shah, BS

Poster A017

**Impact of comorbidities on 30-day outcomes after TSS**  
Sudeepti Vedula, BS

Poster A018

**Impact of Cystic Fibrosis on outcomes and cost in pediatric nasal polyp management**  
Vraj P. Shah, BS

Poster A019

**Incidence and implications of HPV tumor status in non-squamous cell carcinoma sinonasal malignancies**  
Jason Lee, MD

Poster A020

**Internal carotid artery pseudoaneurysm and blow-out secondary to chronic invasive fungal sinusitis**  
Camilo Reyes, MD, FARS

Poster A021

**Intranasal budesonide delivered by nasal nebulizer compared to a sinus rinse**  
Marc Nagel, H.BSc

Poster A022

**MicroRNA-29a promotes the allergic rhinitis by down-regulating FOS**  
Zhiyuan Tang, PhD

Poster A023

**Nasal nitric oxide as a biomarker in the diagnosis and treatment of sinonasal inflammatory diseases**  
Matthew Lelegren, MD

Poster A024

**Nasopharyngeal pedicled pituitary mass: A case report**  
Madison Colcord, BS

All information was taken from the original abstract submission

## PROGRAM AT A GLANCE

Poster A025

**National analysis on the inpatient management of chronic rhinosinusitis in the pediatric population**

Bryan Le, BS

Poster A026

**Navigation-assisted intradural skull base surgery**

Ariel Omiunu, BS

Poster A027

**Performance and safety of image guided sinus dilation system in revision endoscopic sinus surgery**

Joseph Han, MD, FARS

Poster A028

**Preoperative laboratory testing in low risk ambulatory ESS**

Sudeepti Vedula, BS

Poster A029

**Prevention of frontal sinus ostium stenosis with modified Lothrop (Draf III) frontal sinus surgery**

Yasuyuki Hinohira, MD, PhD

Poster A030

**Progressive improvement of severe CRSwNP with dupilumab: Post-hoc analysis of two Phase 3 studies**

Claus Bachert, MD

Poster A031

**Qualitative study of disease control in CRS**

Katie Phillips, MD

Poster A032

**Respiratory epithelial adenomatoid hamartoma in a 76-year-old female**

Haroon Alam

Poster A033

**Seropositivity to microbial proteins in CRS using high throughput microarray technology**

Devyani Lal, MD, FARS

Poster A034

**Severity of loss of smell and paranasal sinus opacification**

Stella Lee, MD

Poster A035

**Shortening the learning curve: Virtual reality rhinoplasty**

Janmaris Marin Fermin, MD

Poster A036

**Sociodemographic disparities and patterns of care in sinonasal adenocarcinoma**

Sudeepti Vedula, BS

Poster A037

**The impact of PROPEL® Implant during sinus surgery on healthcare resource utilization**

Kathleen Mortimer, ScD, MPH

Poster A038

**Topical anesthesia in nasal endoscopy: To use or not to use?**

Prithwijit Roychowdhury, BS

Poster A039

**Treatment of recurrent frontoethmoid mucocele**

Lindsey Ryan, MD

Poster A040

**Unilateral Vidian main neurectomy on moderate to severe allergic rhinitis**

Zhiyuan Tang, PhD

Poster A041

**Vibration therapy in sinonasal disease**

Pooya Roozdar, MD, MPH

Poster A042

**Woakes' Syndrome: A case series**

Alexander Dickie, MD

## Exhibitors



### 3-D MATRIX, Inc. – Booth 19

1234 Chestnut Street, Suite 205  
 Newton, MA 02464  
 Phone: 781-373-9020  
 Email: [info@3dmatrix.com](mailto:info@3dmatrix.com)  
 Website: [www.3dmatrix.com](http://www.3dmatrix.com)  
 Twitter: <https://twitter.com/3dmatrixNA>

3-D Matrix, Inc. is proud to introduce PuraSinus to the US market. A game-changing product based on technology invented at MIT for use in various surgeries is now FDA approved for sinus surgery. PuraSinus is indicated for hemostasis, adhesion-prevention and wound healing. PuraSinus nanofiber peptides self-assemble on contact with physiological fluid to develop a synthetic matrix forming a mechanical barrier to control bleeding, maintain moisture on exposed mucosa, aiding the natural healing process and preventing the formation of post-operative adhesions.

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### ACCLARENT – Showcase S1

31 Technology Drive  
 Irvine, CA 92618  
 Phone: 877-775-2789  
 Email: [customerservice@acclarent.com](mailto:customerservice@acclarent.com)  
 Website: [www.acclarent.com](http://www.acclarent.com)  
 Twitter: [https://twitter.com/Acclarent\\_US](https://twitter.com/Acclarent_US)  
 LinkedIn: <https://www.linkedin.com/company/acclarent/>

Acclarent, Inc., part of Johnson & Johnson Medical Devices Companies, is aligned around a singular focus to free patients to live better lives by designing, developing, and commercializing medical devices that address conditions affecting the ear, nose, and throat. For more than a decade, Acclarent has led the field in delivering innovative technologies to ENT surgeons. For more information, visit [www.acclarent.com](http://www.acclarent.com)



### ADVANCED RX COMPOUNDING PHARMACY – Booth 18

414 Commerce Drive, Suite 100  
 Fort Washington, PA 19034  
 Phone: 484-681-5756; Fax: 866-308-3832  
 Email: [accounts@advancedrx.net](mailto:accounts@advancedrx.net)  
 Website: [www.advancedrx.net](http://www.advancedrx.net)

Advanced RX is an ENT only compounding pharmacy specializing in steroid, antibiotic, and antihistamine nasal rinses at affordable prices.

## Exhibitors



### AERIN MEDICAL – Showcase S3

232 E. Caribbean Drive  
 Sunnyvale, CA 94089  
 Phone: 433-484-8237  
 Email: [info@aerinmedical.com](mailto:info@aerinmedical.com)  
 Website: [www.aerinmedical.com](http://www.aerinmedical.com)  
 Facebook: <https://www.facebook.com/aerinmedical/>  
 Twitter: <https://twitter.com/AerinMedical>  
 LinkedIn: <https://www.linkedin.com/company/aerin-medical>

Aerin's temperature-controlled radio frequency (RF) platform is clinically effective, non-invasive, and utilizes technology indicated to improve nasal obstruction and chronic rhinitis conditions.

- VivAer® addresses nasal airway obstruction by treating the lateral nasal wall, septal tissue and inferior turbinate.
- RhinAer® comprehensively addresses chronic rhinitis by treating the posterior nasal nerve and inferior turbinate.

Unlike traditional RF, the Aerin® technology platform automatically adjusts its power output to maintain target temperature for therapeutic benefit while sparing surround tissue. VivAer and RhinAer fit seamlessly in both office and OR settings. The products are backed by robust clinical evidence and have been used in over 35,000 patients to date.



### ALK-Abelló, Inc. – Booth 17

1700 Royston Lane  
 Round Rock, TX 78664  
 Phone: 512-251-0037; Fax: 512-251-5882  
 Email: [paul.ulrich@alk.net](mailto:paul.ulrich@alk.net)  
 Website: [www.alk.net/us](http://www.alk.net/us)  
 Facebook: <https://www.facebook.com/ALK-US-111100307007981>  
 Twitter: [https://twitter.com/us\\_alk](https://twitter.com/us_alk)

ALK, Inc. is a global, research-driven pharmaceutical company focused on the diagnosis and treatment of allergies. Our products and services include SLIT-Tablets, Allergy Extracts, Penicillin Allergy Skin Testing, a Ciprofloxacin Otic Suspension, Diagnostic Controls, Skin Testing Systems, Sterile Empty Vials, Diluents, Syringes, Trays, and Patient Education Materials.



### C2Dx – Booth 24

555 E. Eliza Street, Suite A  
 Schoolcraft, MI 19087  
 Phone: 888-902-2239; Fax: 269-204-2480  
 Email: [Quintree@c2dx.com](mailto:Quintree@c2dx.com)  
 Website: [www.Quintree.com](http://www.Quintree.com)

Quintree is telehealth software focused on doctor-to-doctor collaboration, allowing you to consult remotely utilizing equipment you already have. Quintree is being sold through C2Dx – a medical device company that invests in and refines the delivery of valuable, niche products to propel their growth and accessibility worldwide. Founded in early 2019 by industry experts, C2Dx is committed to providing leading medical products and superior customer service while continually evolving to ensure that healthcare providers have the devices and technology they need.

## Exhibitors



### DUPIXENT – Booth 11

Website: [www.dupixenthcp.com/virtualexperience](http://www.dupixenthcp.com/virtualexperience)

Email: [medinfo@regeneron.com](mailto:medinfo@regeneron.com)

DUPIXENT® (dupilumab)

DUPIXENT® is currently approved in the US for three indications. Please visit our virtual booth at <http://www.dupixenthcp.com/virtualexperience> to learn more!

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### Sanofi

Sanofi is dedicated to supporting people through their health challenges. We are a global biopharmaceutical company focused on human health. We stand by the few who suffer from rare diseases and the millions with long-term chronic conditions. With more than 100,000 people in 100 countries, Sanofi is transforming scientific innovation around the globe.

### Regeneron

Regeneron is a leading biotechnology company that invents medicines for people with serious diseases. Founded and led for over 30 years by physician-scientists our unique ability to repeatedly and consistently translate science into medicine has led to multiple FDA-approved treatments, almost all of which were homegrown in our laboratories.



### GSK – Booth 16

5 Moore Drive  
Research Triangle Park, NC 27709  
Phone: 1-888-825-5249

Website: [www.gsk.com](http://www.gsk.com)

[www.contactus.gsk.com](http://www.contactus.gsk.com)

GSK is a science-led global healthcare company with a special purpose. We research, manufacture, and make available a broad range of medicines, vaccines and consumer healthcare products.



### HEMOSTASIS, LLC. – Showcase S5

5000 Township Parkway  
St. Paul, MN 55110  
Phone: 651-233-2074; Fax: 651-855-1465  
Email: [Customerservice@hemostasisllc.com](mailto:Customerservice@hemostasisllc.com)  
Website: [www.hemostasisllc.com/](http://www.hemostasisllc.com/)

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## Exhibitors



### INTERSECT ENT – Showcase S2

1555 Adams Drive  
Menlo Park, CA 94025  
Phone: 650-641-2100  
Email: [info@intersectENT.com](mailto:info@intersectENT.com)  
Website: [www.IntersectENT.com](http://www.IntersectENT.com)  
Twitter: <https://twitter.com/intersectent>  
LinkedIn: <https://www.linkedin.com/company/intersect-ent>

Intersect ENT is a medical technology company dedicated to advancing the treatment of ear, nose, and throat (ENT) conditions through evidence-based innovation. We provide treatments for people with chronic sinusitis, an inflammatory sinus condition that has been shown to substantially reduce quality of life. Our core technology is based upon a bioabsorbable drug release platform and we have recently expanded our offerings to include an innovative navigation and balloon system. The family of implants is designed to provide mechanical support and localized drug delivery, while our newly expanded portfolio will extend our offerings to help patients across the sinusitis care continuum.



### KARL STORZ ENDOSCOPY-AMERICA, INC. – Booth 8

2151 E. Grand Avenue  
El Segundo, CA 90245  
Phone: 800-421-0837  
Email: [communications@karlstorz.com](mailto:communications@karlstorz.com)  
Website: <https://www.karlstorznetwork1.com/ent>  
LinkedIn: <https://www.linkedin.com/company/karl-storz-endoscopy/>

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## Medtronic

### MEDTRONIC – Booth 14

710 Medtronic Pkwy  
Minneapolis, MN 55432  
Phone: 763-514-4000; Fax: 763-514-4879  
Email: [RS.ENTMarketing@medtronic.com](mailto:RS.ENTMarketing@medtronic.com)  
Website: [www.medtronic.com](http://www.medtronic.com)  
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Patients are at the center of everything we do—and we believe medical technology can play an even greater role in improving people's lives. Join us in our commitment to take healthcare Further, Together. Be inspired at [medtronic.com](http://medtronic.com)

## Exhibitors



### **MICROGENDX – Booth 32**

5826 Hoffner Avenue  
Suite 1004  
Orland, FL 32822  
Phone: 407-204-1400; Fax: 407-204-1401  
Email: [info@microgenidx.com](mailto:info@microgenidx.com)  
Website: [www.microgenidx.com](http://www.microgenidx.com)  
Facebook: [www.facebook.com/microgenidx](https://www.facebook.com/microgenidx)  
Twitter: [www.twitter.com/microgenidx](https://www.twitter.com/microgenidx)  
LinkedIn: <https://www.linkedin.com/company/microgenidx>

MicroGenDX provides physicians and their patients with the most advanced molecular based microbial testing available. Through the utilization of Next Generation DNA Sequencing (NGS), MicroGenDX identifies causative microbes within patient samples and matches DNA sequence codes of 50,000+ microbial species with 99.9% accuracy. This technology provides physicians with the precise information needed to make confident treatment decisions based on solid DNA evidence. This knowledge ensures targeted antibiotic selection leading to superior patient outcomes.



### **MODERNIZING MEDICINE – Booth 27**

4850 T-Rex Avenue, Suite 200  
Boca Raton, FL 33431  
Phone: 561-880-2998  
Website: [www.modmed.com](http://www.modmed.com)  
Twitter: [www.twitter.com/modmed](https://www.twitter.com/modmed)  
Facebook: [www.facebook.com/ModernizingMedicine/](https://www.facebook.com/ModernizingMedicine/)  
LinkedIn: <https://www.linkedin.com/company/modernizing-medicine>

The modmed® Otolaryngology suite is a cloud-based, electronic health records (EHR) and practice management (PM) system designed to adapt to each doctor's style of practice, remembering preferences and automatically suggesting documentation and billing codes. When used on a tablet, EMA®, our EHR, works seamlessly with our other products and services including PM, revenue cycle management, Analytics, modmed Telehealth, modmed Pay, patient engagement tools and more. With easy-to-use mobile touch screen capabilities, our intuitive, all-in-one solution helps enterologists save precious time and allows them to focus on what's important - improving patient outcomes.



### **NEILMED PHARMACEUTICALS INC. – Booth 29**

601 Aviation Blvd.  
Santa Rosa, CA 95403  
Phone: 707-525-3784; Fax: 707-525-3785  
Email: [tradeshows@neilmed.com](mailto:tradeshows@neilmed.com)  
Website: [www.neilmed.com](http://www.neilmed.com)

The mission of the company is to create and maintain safe, affordable, and effective products to sustain long-term growth and create drug-free and effective Sinus, Ear, First Aid, and Baby care devices for millions of consumers worldwide. Please visit the website [www.neilmed.com](http://www.neilmed.com) for more details.

## Exhibitors

# OLYMPUS

### OLYMPUS AMERICA INC. – Booth 20

800 West Park Drive  
Westborough, MA 01581  
Phone: 800-401-1086  
Email: [louis.lariviere@olympus.com](mailto:louis.lariviere@olympus.com)  
Website: <https://medical.olympusamerica.com/>  
Twitter: <https://twitter.com/OlympusMedUS>  
Instagram: <https://www.instagram.com/olympusamericas/>

For more than 100 years, Olympus has focused on making people's lives healthier, safer and more fulfilling by helping to detect, prevent and treat disease. Olympus' ENT business uses innovative capabilities to deliver diagnostic and therapeutic solutions to Otolaryngologists practicing Rhinology. Our capabilities in visualization – including both 4K and HD solutions – enable surgeons to have the best endoscopic view possible. Olympus therapeutic solutions are found in all sites of care – hospital operating rooms, ambulatory surgical centers, and in the office. Olympus' Rhinology portfolio includes the DIEGO® ELITE Multidebrider, Celon Elite radiofrequency system for turbinate reduction, and the recently launched ChitoZolve Dissolvable Chitosan Intranasal Splint. And all your surgical images and videos can be securely captured, stored and shared across the enterprise using Olympus content management solutions such as nCare and Vaultstream.



### OPTINOSE – Booth 7

1020 Stony Hill Rd., Suite 300  
Yardley, PA 19067  
Phone: 267-364-3500  
Email: [Kristen.miller@optinose.com](mailto:Kristen.miller@optinose.com)  
Website: [www.optinose.com](http://www.optinose.com) and [www.xhance.com](http://www.xhance.com)

Optinose is proud to be a sponsor of the ARS 10th Annual Summer Sinus Symposium. Optinose is a specialty pharmaceutical company focused on serving the needs of patients cared for by ear, nose and throat (ENT) and allergy specialists. See how Exhalation delivers medicine in a different way. Learn more about deposition with XHANCE® (fluticasone propionate) nasal spray 93 mcg visiting our booth or [www.xhancehcp.com](http://www.xhancehcp.com).



### STRYKER ENT

3600 Holly Lane N, Suite 40  
Plymouth, MN 55447  
Phone: 763-463-1595  
Website: <https://ent.stryker.com>  
Facebook: [https://www.facebook.com/StrykerENT/?view\\_public\\_for=103026761734619](https://www.facebook.com/StrykerENT/?view_public_for=103026761734619)  
LinkedIn: [https://www.linkedin.com/showcase/stryker\\_ent](https://www.linkedin.com/showcase/stryker_ent)

At Stryker, everything starts with our mission - Together with our customers we are driven to make healthcare better. We work each and every day to deliver on that mission by providing innovative solutions that simplify the complex, address the unmet needs of your patients, and offer you the flexibility to deliver care in your preferred site of service. Our unique ENT portfolio expands your treatment options for your patients with chronic rhinitis, chronic sinusitis, Eustachian tube dysfunction and nasal airway obstruction. With Stryker, you gain access to a complete suite of solutions to help make your vision of patient care a reality. From room infrastructure to suction and filtration, technology to training, reimbursement tools to patient education, Stryker is here to help. The control you need. The flexibility you want. The experience your patients deserve. Care without compromise.

## Exhibitors



### **XORAN TECHNOLOGIES – Booth 26**

5210 S. State Road

Ann Arbor, MI 48108

Phone: 734-418-5133

Email: [info@xorantech.com](mailto:info@xorantech.com)

Website: [www.xorantech.com](http://www.xorantech.com)

LinkedIn: <https://www.linkedin.com/company/xoran-technologies>

Xoran Technologies is the pioneer of low-dose radiation, cone beam CT scanners for use in-office and operating rooms. The flagship product, MiniCAT, is an in-office, point-of-care imaging solution for ENT and Allergy physicians. Xoran provides 3-dimensional low dose imaging – with workflow designed for simplicity and ease of use.



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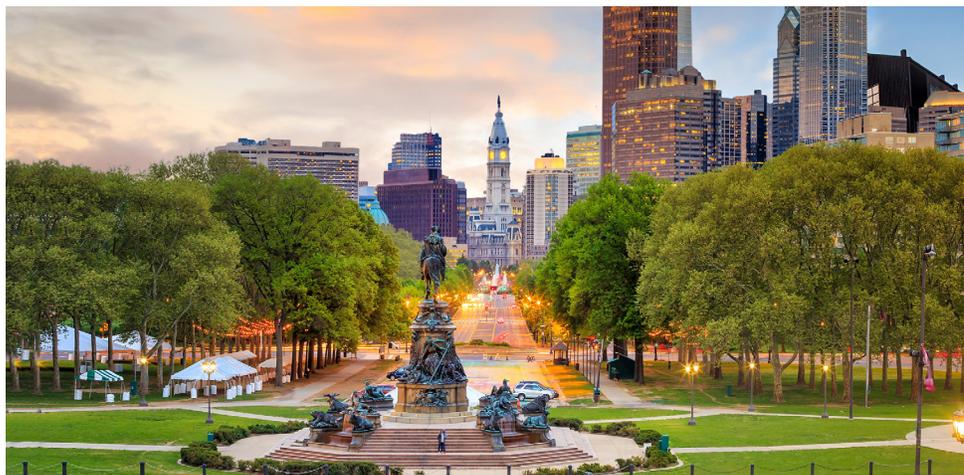
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Contact: Wendi Perez, ARS Executive Administrator  
Tel: 973-545-2735, Ext. 4105 Email: wendi@american-rhinologic.org

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