**Morning Session**  
7:00 AM - 12:00 PM CST

**7:00 AM - 8:00 AM**
Women in Rhinology Session **(L)**
“Being Human: Exploring Conscious & Unconscious Bias in Healthcare”
Guest Speakers:
Tracy Smart, MD, Air Vice-Marshal, Australia  
Angela Ballantyne, PhD, Associate Professor, University of Otago, New Zealand

**8:00 AM - 8:05 AM**
Welcome **(R)**
Joseph Han, MD, FARS and Rodney Schlosser, MD, FARS

**8:05 AM - 8:40 AM**
Keynote Address: Proposal to Develop and Sustain the Otolaryngology Surgeon Scientist Workforce: AN NIDCD – Academic Partnership **(R)**
Guest Speaker: Debara L. Tucci, MD, MS, MBA  
Director, National Institute of Deafness and Other Communication Disorders, National Institute of Health
Moderators: Joshua Levy, MD, FARS; Jose Mattos, MD; Kara Detwiller, MD

**8:40 AM - 8:47 AM**
Dupilumab therapy increases sinonasal mucosal expression of IL-13 in CRSwNP **(R)**
Presented by Kathleen M. Kelly, MD

**8:47 AM - 8:54 AM**
Inflammatory heterogeneity in aspirin exacerbated respiratory disease **(R)**
William Scott, MD

**8:54 AM - 9:01 AM**
Targeted replacement of full-length CFTR in human airway stem cells by CRISPR/Cas9 gene editing of the endogenous locus **(R)**
Dawn Bravo, PhD

**9:01 AM - 9:06 AM**
Q&A **(L)**

**9:06 AM - 9:13 AM**
Fractional exhaled nitric oxide as a biomarker of mucosal inflammation in chronic rhinosinusitis **(R)**
Stella Lee, MD

**9:13 AM - 9:20 AM**
Chronic particulate matter air pollution exposure is associated with anosmia: A Case: Control Study **(R)**
Murugappan Ramanathan, Jr, MD, FARS

**9:20 AM - 9:27 AM**
A new instrument for measurement of clinical outcome after lacrimal surgery: Tearing assessment and rating scale-12 (TEARS-12) **(R)**
Jonathan Simmonds, MD

**9:27 AM - 9:32 AM**
Q&A

**9:32 AM - 9:47 AM**
Break

**9:47 AM - 10:27 AM**
Panel:
Inclusive care for diverse rhinology patients **(L)**
Moderator: Rodney J. Schlosser, MD, FARS  
Panelists: Jean Anderson Eloy, MD, FARS; Devyani Lal, MD, FARS; David Gudis, MD, FARS; Troy Woodard, MD, FARS
Moderators: Stella Lee, MD; Daniel Beswick, MD, FARS; Do Yeon Cho, MD

**10:27 AM - 10:34 AM**
The relationship of bitter taste receptors and COVID-19 **(R)**
Mohamed Darwish, MD

**10:34 AM - 10:41 AM**
SARS-CoV-2 infection of human nasal mucosa in vitro is increased in CRSsNP **(R)**
Andrew Lane, MD, FARS

**10:41 AM - 10:48 AM**
Risks factors and characteristics associated with persistent smell loss with COVID-19 **(R)**
Bita Shahrvini

**10:48 AM - 10:53 AM**
Q&A **(L)**

**10:53 AM - 11:00 AM**
Ambient noise levels and wireless headsets for communication in aerosolizing otolaryngology surgery during COVID-19 **(R)**
Marc Levin, MD

**11:00 AM - 11:07 AM**
Divya Prajapati, BS

**11:07 AM - 11:14 AM**
Differential smell and taste outcomes in COVID 19: Single-center large population study **(R)**
Nikita Chapurin, MD

**11:14 AM - 11:20 AM**
Q&A **(L)**

**11:20 AM - 12:00 PM**
Panel
COVID-19 and rhinology: An international update **(L)**
Moderator: Zara Patel, MD, FARS  
Panelists: Carol Yan, MD; Claire Hopkins, MD; Leigh Sowerby, MD; Puya Dehghani-Mobaski, MD; Benjamin Bleier, MD, FARS

**12:00 PM - 1:00 PM**
Lunch/Visit with Exhibitors
Afternoon Session
1:00 PM - 5:00 PM CST; Room A

1:00 PM-1:40 PM
Panel:
Current and future changes to rhinology education (L)
Moderator: Stacey Gray, MD, FARS
Panelists: Eugene Chang, MD, FARS; Elina Toskala, MD, FARS; Mark Tewfik, MD; David Poetker, MD, FARS

Moderators: Waleed Abuzeid, MD; Adam DeConde, MD; Dana Crosby, MD, FARS

1:41 PM-1:48 PM
Implementation of time-driven activity-based costing to analyze cost drivers in functional endoscopic sinus surgery (R)
Shravani Pathak, BA

1:48 PM-1:55 PM
Are NSAIDs effective enough for postoperative pain control after functional endoscopic sinus surgery and septoplasty: A randomized controlled study (R)
Alok Saini, MD

1:55 PM-2:02 PM
Effect of nasal suction catheters on aerosol generation during endoscopic sinus surgery (R)
Alexander Murr, BS

2:02 PM-2:09 PM
Postoperative care trends between fellowship and non-fellowship trained physicians following ESS: 2017 (R)
Monica Kirollos, BS

2:09 PM-2:14 PM Q&A (L)

Moderators: Andrew Lane, MD, FARS; Charles Riley, MD; Kristine Smith, MD

2:15 PM-2:22 PM
Endoscopic sinus surgery for chronic rhinosinusitis: 5-year clinical outcomes (R)
Jonathan Simmonds, MD

2:22 PM-2:29 PM
The relationship between socioeconomic status, exposure to airway pollutants and impact on chronic rhinosinusitis disease severity (R)
Stella Lee, MD

2:29 PM-2:36 PM
The association between modified frailty index and postoperative outcomes in endoscopic sinus surgery (R)
Khodayar Goshutsabi, MS

2:36 PM-2:43 PM
Results from the LANTERN phase 2 multicenter dose-ranging study evaluating the safety and efficacy of LYR-210 in chronic rhinosinusitis with or without nasal polyps (R)
Yina Kuang, PhD
Presented by Anders Cervin, MD, PhD

2:43 PM-2:48 PM Q&A (L)

2:48 PM-3:05 PM Break

Moderators: Jean Kim, MD, FARS; Garret Choby, MD, FARS; Victoria Lee, MD

3:05 PM-3:12 PM
Racial, ethnic, and gender disparities in registered clinical trials for chronic rhinosinusitis with nasal polyposis (R)
Daniel Spielman, MD

3:12 PM-3:19 PM
Diagnosis and management of barosinusitis: A systematic review (R)
Tiffany Chen, BA

3:19 PM-3:26 PM
Marsupialization with a mucosal graft reduces recurrence after endonasal surgery of Rathke’s cleft cyst (R)
Mandy Salmon, BS

3:26 PM-3:33 PM
The effect of obstructive sleep apnea on surgical outcomes of orbital decompression for thyroid eye disease (R)
Tory McKnight, BS

3:33 PM-3:38 PM Q&A (L)

Moderators: Marilene Wang, MD, FARS; Mathew Geltzeiler, MD, FARS; Gretchen Oakley, MD, FARS

3:39 PM-3:46 PM
Race, disease-specific survival, and conditional survival in primary sinus malignancies (R)
Rahul Sharma, BS

3:46 PM-3:53 PM
Factors associated with delivery of postoperative radiotherapy at a different facility in sinonasal cancer (R)
Jeff Gao

3:53 PM-4:00 PM
Trends in HPV testing for patients with sinonasal squamous cell carcinoma: A national analysis (R)
Christopher Tseng, BS

4:00 PM-4:07 PM
Can indocyanine green fluorescence angiography predict skull base reconstructive flap necrosis? (R)
Uma Ramaswamy, MD

4:07 PM-4:12PM Q&A (L)

4:15 PM-5:00 PM Panel
Beyond “I can do it endoscopically”: Enhancing patient care in the current era of skull base surgery (L)
Moderator: Richard Harvey, MD, FARS
Panelists: Brian Thorp, MD, FARS; Corrina Levine, MD, FARS; Nicholas Rowan, MD
Afternoon Session
1:00 PM - 5:00 PM CST; Room B

Moderators: Cecelia Damask, DO; Jonathan Ting, MD, FARS; Eric Wang, MD, FARS

1:00 PM-1:07 PM
Resonant vibration of the sinonasal cavities for the treatment of nasal congestion (R)
Ashoke Khanwalkar, MD

1:07 PM-1:14 PM
Baseline subjective and objective measures in patients with allergic rhinitis: A systematic review (R)
Andraia Li, BS

1:14 PM-1:21 PM
Hypothalamic-Pituitary-Adrenal (HPA) axis suppression and long-term intra-nasal corticosteroid use: A systematic review and meta-analysis (R)
Amirpouyan Namavarian

1:21 PM-1:28 PM
Radiological assessment of high anterior septal deviation and its impact on sinus access (R)
Joshua Lee, MD

1:28 AM-1:33 PM  Q&A (L)

Moderators: Christine Franzese, MD, FARS; Naweed Chowdhury, MD; Arthur Wu, MD, FARS

1:34 PM-1:41 PM
Inhibiting the TH2 pathway with dupilumab causes a shift to type 1 inflammatory cytokine production (R)
Stella Lee, MD

1:41 PM-1:48 PM
Treatment outcomes of AERD (Aspirin Exacerbated Respiratory Disease) patients treated with aspirin desensitization (AD), biologics (B) or both biologics and desensitization (BD) therapy (R)
Glen D’Souza, MD

1:48 PM-1:55 PM
Asthma increases long-term revision rates of endoscopic sinus surgery in chronic rhinosinusitis with and without nasal polyposis (R)
Amarbir Gill, MD

1:55 PM-2:02PM
Central compartment atopic disease: Comparative analysis of surgical outcomes amongst subtypes of chronic rhinosinusitis with nasal polyps (R)
Andrew Steehler, BS

2:02 PM-2:07 PM  Q&A (L)

2:07 PM-2:25 PM  Break

2:25 PM-3:10 PM
Panel
Where do biologics fit in the management algorithm of Aspirin Exacerbated Respiratory Disease? (L)
Moderator: Amber Luong, MD, PhD, FARS
Panelists: John Bosso, MD; Tanya Laidlaw, MD; Justin Turner, MD, FARS; Lauren Roland, MD

Moderators: Michael Kohanski, MD; Nyall London, MD; Angela Donaldson, MD, FARS

3:10 PM-3:17 PM
Adverse events of oral antibiotic therapy for acute rhinosinusitis in the pediatric population: A systematic review and meta-analysis (R)
Lucas Axiotakis

3:17 PM-3:24 PM
A novel oxygen-generating biomaterial for CRS therapy (R)
Do Yeon Cho, MD

3:24 PM-3:31 PM
Endoscopic sinus surgery for Cystic Fibrosis: Variables influencing sinonasal and pulmonary outcomes (R)
Keven Ji, MD

3:31 PM-3:38 PM
Topical nasal administration of ciprofloxacin in chronic rhinosinusitis: a prospective study (R)
David Dias, MD

3:38 PM-3:43 PM  Q&A (L)

Moderators: John Craig, MD, FARS; David Jang, MD, FARS; Alissa Kanaan, MD

3:44 PM-3:51 PM
Systematic review and voxel-based meta-analysis of gray matter alterations in olfactory dysfunction (R)
Andraia Li, BS

3:51 PM-3:58 PM
Association between social determinants of health and olfactory function: A scoping review (R)
Joel James, BS

3:58 PM-4:05 PM
Intraoperative application of CNN-automated segmentation of anterior skull base structures with a novel 3D navigation system (R)
Caio Neves, MD

4:05 PM-4:12 PM
Treatment of epistaxis using the National Inpatient Sample and Centers for Medicare/Medicaid Services national databases: A comparison of endovascular and endoscopic procedures (R)
Tory McKnight, BS

4:12 PM-4:17 PM  Q&A (L)
Moderators: Erin O’Brien, MD, FARS; Frederick Yoo, MD; Philip Chen, MD, FARS

4:18 PM-4:25 PM
**Clinical features of parosmia associated with SARS-CoV-2 infection** (R)
Katherine Garvey, MPH

4:25 PM-4:32 PM
**COVID-19 related olfactory dysfunction incidence and natural history among ambulatory patients** (R)
Daniel Bacon, BS

4:32 PM-4:39 PM
**Telehealth and the otolaryngology patient: A comparison of patient satisfaction with in-office appointments and virtual visits due to COVID-19** (R)
Annie Arrighi-Allisan, BA

4:39 PM-4:46 PM
**COVID smell tracker: A novel research-based mobile application to study anosmia and ageusia in subjects with COVID-19** (R)
Tory McKnight, BS

4:46 PM-4:53 PM
**Middle East burn pit exposure is associated with decreased sinonasal quality of life in returning deployers** (R)
Christopher Hill, MD

4:53 PM-5:00 PM  **Q&A** (L)

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**COSM 2021 | POSTERS**

**Poster #001**
**3D printing as a planning tool to optimize post-surgical sinonasal sinus irrigation**
Kanghyun Kim, BS

**Poster #002**
**A Multidisciplinary Approach to Sino-Orbital Osteoma**
James Connelly, BA

**Poster #003**
**Adverse events associated with corticosteroid-eluting sinus stents**
Vishal Narwani, MD

**Poster #004**
**Analyzing the practice patterns of otolaryngologists in the United States during the COVID-19 pandemic**
Laura Van De Laar, MD

**Poster #005**
**Atypical cause of facial nerve palsy and otorhoea: Sinonasal squamous cell carcinoma with direct spread to both ears**
Jason Lim, MBBS (Hons)

**Poster #006**
**Can the 5-item modified frailty index predict outcomes following resection of intradural skull base lesions**
Khodayar Goshtasbi, MS

**Poster #007**
**Case report: Sinonasal tumor - a diagnostic conundrum**
Haran Devakumar, MBBS

**Poster #008**
**Combined exhalational delivery system with fluticasone and budesonide nasal irrigations in patients with chronic rhinosinusitis with nasal polyposis: A preliminary report**
Rosalie Machado

**Poster #009**
**Conditional and overall disease-specific survival in patients with sinus cancer: Improved outcomes in the endoscopic era**
Rahul Sharma, BS

**Poster #010**
**Correlation between the ENT domain of Birmingham Vasculitis Activity Score (BVAS) and the Rhinosinusitis Disability Index (RSDI)**
Daniel Bacon, BS

**Poster #011**
**Cytotoxic effects of permethrin on cultured human sinonasal epithelial cells**
Tara Wu, MD
Poster #012  
**Development of a multi-media educational module of sinonasal anatomy: Face and content validity**  
Christopher Bailey, MD, PhD

Poster #013  
**Diagnosis and localization of cerebrospinal fluid rhinorrhea: A systematic review**  
Kelvin Zhou, Medical Student

Poster #014  
**Diffuse nasal papillomatosis of multiple histologic subtypes**  
Thomas Fitzpatrick, MD

Poster #015  
**Does eustachian tube dilation help patients with type A tympanograms and elevated ETDQ-7 scores?**  
Danielle Warner, MD

Poster #016  
**Embolization following SPA ligation: Outcomes and risk factors for recurrent bleeding**  
Teddy Klug, MD

Poster #017  
**Evaluating correlation between different nasal septum deviation classifications systems and patients complaints**  
David Dias, MD

Poster #018  
**Ganglioneurofibroma of the pterygopalatine fossa: case report and review of the literature**  
Kathryn L. Kreicher, MD

Poster #019  
**Giant cell lesions of the sinuses and skull base: Case series and review of literature**  
Samyuktha Melachuri, BS

Poster #020  
**Impact of CFTR therapy on CRS: Deep learning sinus CT analysis, quality of life and productivity loss**  
Daniel Beswick, MD, FARS

Poster #021  
**Impact of COVID-19 on resident otolaryngology training**  
Akshay Murthy, BS

Poster #022  
**Impact of obesity on surgical outcomes in patients with chronic rhinosinusitis undergoing endoscopic sinus surgery**  
Viraj Patel, MD

Poster #023  
**Longitudinal analysis of Twitter trends for sinusitis**  
Lydia Weykamp, BS

Poster #024  
**Magnetic resonance imaging findings in patients with olfactory dysfunction: A systematic review**  
Nanki Hura, BS

Poster #025  
**Management of skull base chondromyxoid fibroma: Rare presentation and literature review**  
Elizabeth Stephenson, MD

Poster #026  
**Mepolizumab reduces the need for surgery in patients with chronic rhinosinusitis with nasal polyps**  
Wytske Fokkens, MD, PhD

Poster #027  
**Minimally invasive endoscopic distraction osteogenesis maxillary expansion (DOME- MinE): Restoring nasal breathing in adult OSA patients with high arched palates**  
Mohamed Abdelwahab, MD

Poster #028  
**Mucocoele of the maxilla as a late complication of maxillary advancement surgery**  
Bishoy N. Ibrahim, BS

Poster #029  
**Nasoseptal chondromucosal flap for oroantral fistulas**  
Andi Liebowitz, BA

Poster #030  
**Olfactory dysfunction predicts the development of vascular disease in older adults**  
Teresa Xiao, Medical Student

Poster #031  
**Olfactory outcomes after technical variations in transsphenoidal endoscopic skull base surgery**  
Jack Birkenbeuel, Medical Student

Poster #032  
**Otolaryngologist assessment of nasal septum deviation**  
Roberto Frusciante, MS4 Medical Student

Poster #033  
**Postoperative pain management after hereditary hemorrhagic telangiectasia lesion coblation: a prospective study**  
Kristen Kraimer, MD

Poster #034  
**Predictors of post-operative nausea and vomiting after endoscopic skull base surgery**  
Jack Birkenbeuel, Medical Student

Poster #035  
**Profuse intraoperative hemorrhage in a hereditary hemorrhagic telangiectasia patient: A case report**  
Chetan Safi, Resident Physician

Poster #036  
**Reduction in visits to emergency department for acute rhinologic and allergic complaints during COVID-19 pandemic**  
Evan Kominsky, BA
Poster #037
Safety of nasopharyngeal swabs: are patients getting the accurate recommendations?
Taylor Fish, BS

Poster #038
Severe bilateral orbital subperiosteal abscesses in a patient with Woakes Syndrome
Anthony Leonard, MD, PhD

Poster #039
Simultaneous use of endoscopic and endovascular technique to control refractory epistaxis
Janine Rotsides, MD

Poster #040
Sinus culture differences between patients with radiographic signs of odontogenic sinus disease
Tyler Merrill, MD

Poster #041
Sinusitis in the Bronx: Impact of demographics, patient characteristics, and socioeconomic status on disease epidemiology and outcomes
Viraj Patel, MD

Poster #042
Survey of anesthesiologists on topical vasoconstrictors and intravenous tranexamic acid for endoscopic sinus surgery
Max Feng, BS

Poster #043
The power of Twitter to identify novel symptoms in COVID-19
William Swift, BS

Poster #044
Transeyelid orbitotomy approach for isolated type IV frontal cell pathology: A case series and systematic review of the literature
Tara Wu, MD

Poster #045
Transorbital-transsinus resection of sinonasal malignances with extraconal orbital invasion
Jeffrey Radabaugh, MD

Poster #046
Unusual cause of acute sinusitis and orbital abscess in COVID-19 positive patient
Teddy Klug, MD

Poster #047
Workforce analysis of allergy immunotherapy Medicare providers
Tam Ramsey, MD