North American Skull Base Society

30th Annual Meeting

“Rapid Evolution in the Healthcare Ecosystem: Become Frontiers”

February 7-9, 2020
La Cantera Resort & Spa, San Antonio, TX
Pre-Meeting Dissection Course: February 5-6, 2020

PRESIDENT: Ricardo Carrau, MD, MBA
PROGRAM CHAIRS: Adam Zanation, MD & Daniel Prevedello, MD
PRE-MEETING COURSE CHAIRS: Paul Gardner, MD & Arturo Solares, MD
SCIENTIFIC PROGRAM COMMITTEE: Ricardo Carrau, MD, MBA, President, Adam Zanation, MD, MBA, Program Co-Chair, Daniel Prevedello, MD, Program Co-Chair, Paul Gardner, MD, Arturo Solares, MD, FACS, James Evans, MD, FACS, FAANS, Shaan Raza, MD, Brian Thorp, MD, Deanna Sasaki-Adams, MD, Chris Rassekh, MD, Christine Klatt-Cromwell, MD, Tonya Stefko, MD, Moises Arriaga, MD, Jamie Van Gompel, MD, Kibwei McKinney, MD, Derrick Lin, MD, FACS, Carlos Pinheiro-Neto, MD, PhD
Dear friends and colleagues,

Welcome to the **30th Annual Meeting of the North American Skull Base Society**!

This event will be held at La Cantera Resort in San Antonio, Texas; February 7-9, 2020 with a pre-meeting hands-on dissection course February 5-6, 2020. La Cantera is a beautiful resort, full of family-oriented amenities, located just 20 minutes from San Antonio’s downtown, The Alamo historical site and the world renowned Riverwalk.

The meeting theme, **Rapid Evolution in the Healthcare Ecosystem: Becoming Frontiers**, will present the opportunity to discuss technological, technical, societal and economic changes affecting the way we deliver care to our patients and how our frontier horizon changes faster than our ability to adapt to these changes (“becoming frontiers”). This pace is accelerating; therefore, we soon will require the assistance of new technologies including machine and deep learning and, eventually, artificial intelligence.

I am extremely grateful for the work of the Program Committee that under the direction of our **Program Chairs**, Drs. Daniel M. Prevedello and Adam Zanation, have synthesized a superb curriculum that includes a pre-meeting hands-on course, keynote lectures, live dissections, 3D anatomical reviews, round tables and panels addressing and debating hot topics, video sessions offering technical pearls from recognized experts, and proffered paper sessions. In addition we will offer the opportunity to register for hands-on training for the endoscopic control of an internal carotid artery injury on a cadaveric model and the showcasing of superb preserved anatomical dissections of the skull base and brain. Furthermore, the program will include a **Skull Base Primer Course** and two special symposiums, **State-of-the-Art Diagnosis and Management of Acoustic Neurinomas** and of **The Orbit as a Surgical Corridor and Target**. The pre-congress **Hands-On Course** led by Drs. Paul Gardner and Arturo Solares, will offer a modified format with pre-recorded prosections, less lecture and more hands-on dissection time. I also want to recognize the stellar performance of our partners in the BSC Management team. Without their operational and organizational efforts, this meeting would not be possible.

My **Guests of Honor** include Dr. Ivo Janecka, who will deliver the keynote lecture, and Drs. Hugh Curtin, Amin Kassam, Dan Nuss and Laligam Sekhar, who will present their perspectives on the evolution of our healthcare ecosystem regarding economics, patient care, research and education. During the past 30 years, I have enjoyed their trailblazing contributions and teachings and I am elated that they accepted my invitation.

I thank the membership of the NASBS for the honor to serve as your President. I hope this meeting exceed your expectations.

Ricardo Carrau, MD, MBA
NASBS President 2019 - 2020
Keynote Speaker - Saturday, February 8

Ivo P. Janecka, MD, MBA, PhD

Education in medicine (MD), business (MBA), and management/decisions sciences (PhD) Published: 147 peer-reviewed scientific articles 74 chapters/reviews; 6 books (4 as Editor, 2 as Associate Editor)

Honored Guest Speakers - Friday, February 7

Daniel W. Nuss, MD, FACS

George D. Lyons, MD Professor and Chairman
LSU Department of Otolaryngology-Head and Neck Surgery

Daniel W. Nuss, M.D., completed his medical education and residency at Louisiana State University in New Orleans. He served a two-year fellowship at the University of Pittsburgh’s Center for Cranial Base Surgery. He has been Chairman of LSU Otolaryngology since 1995, and is a past president (2009) of the North American Skull Base Society. In 2014 he received the NASBS President’s Distinguished Service Award. His clinical practice includes management of skull base tumors using both open and minimally invasive techniques, with special interest in skull base reconstruction. He has authored over 150 scientific publications and over 200 scientific presentations worldwide. He is a Fellow of the American Academy of Otolaryngology-Head and Neck Surgery, American College of Surgeons, and American Head and Neck Society. In his spare time, Nuss plays lead guitar for a New Orleans-based rock-n-roll band, whose activities include fund-raising for schools, churches, cancer patients, research, and other worthy causes.

Laligam Sekhar, MD, FACS, FAANS

Dr. Laligam N. Sekhar is one of the pioneers of Skull base Surgery and a founding member of the North American Skull Base Society. He was the second president of the NASBS (1990-91) and was also president of the World Federation of Skull Base Societies (2008-2011) and of the Washington State Association of Neurosurgeons (2008-11) in addition to other leadership positions. He has published 349 refereed articles, edited 9 books, and holds 6 patents for medical devices. His expertise is in the area of Skull Base Microsurgery, Endoscope-assisted Microsurgery, and Cerebrovascular Neurosurgery. He is currently a Professor and Vice-Chairman of Neurological Surgery at the University of Washington, Director of Skull Base Surgery, Director of Cerebrovascular Surgery, and the Director of the Cerebrovascular Laboratory at Harborview Medical Center in Seattle, Washington. He is married to Gordana Juric- Sekhar, a Neuropathologist at UW and has three children: Raja, Daniela and Kris.
Honored Guest Speakers - Saturday, February 8

Amin B. Kassam, MD

As Vice President of Neurosciences and Chairman of the Department of Neurosurgery at Aurora Health Care, Dr. Kassam is a board-certified, world-renowned neurosurgeon whose accomplishments have advanced the field of neurosurgery. He was the driving force behind the establishment of the Aurora Neuroscience Innovation Institute (ANII), where he collaborates with an experienced team of scientists, engineers, clinicians and cell biologists.

Hugh D. Curtin, MD, FACR

Hugh D. Curtin is a radiologist specializing in imaging of the head, neck and skull base. He is Chair of Radiology at the Massachusetts Eye and Ear Infirmary and Professor of Radiology at the Harvard Medical School. Born and raised in Canton, New York, he attended St. Michael’s College at the University of Toronto. He graduated from Upstate Medical University in Syracuse and did a radiology residency at the University of Pittsburgh. After a year at the Ostra Sjukhuset in Goteborg, Sweden learning pediatric radiology and angiography, he returned to Pittsburgh. There he began doing head and neck radiology not really because he was driven by a specific interest but because nobody else wanted to do it and he was the most junior attending radiologist. Dr. Bertram Girdany, the Chair of Radiology at the University of Pittsburgh, asked Dr. Curtin to oversee the new radiology department at the Pittsburgh Eye and Ear Hospital on an interim basis. In preparation, Dr. Curtin went to study at the Foundation Ophtalmologique Adolphe de Rothschild in Paris with Dr. Jacqueline Vignaud, one of world's leaders in temporal bone imaging.

Back in Pittsburgh, Dr. Curtin worked closely with otolaryngologists and skull base surgeons. Dr. Curtin credits his interactions with Dr. Eugene Myers and Dr. Jonas Johnson with helping him to learn head and neck imaging. The new Center for Cranial Base Surgery brought further opportunities for imaging exploration of the skull base and the development of imaging guided biopsy techniques for skull base lesions. Dr. Curtin was one of the founding members of the North American Skull Base Society. Dr. Curtin moved to Boston in 1995 to become Chair of Radiology at the Massachusetts Eye and Ear Infirmary.

Dr. Curtin has served on the editorial boards of several journals including Radiology, the American Journal of Neuroradiology (AJNR) and Skull Base. He was the first Head and Neck Editor for the AJNR. He has authored or coauthored over 200 peer reviewed papers and numerous chapters. He has lectured extensively nationally and internationally. Much of his effort has focused on publication of the textbook Head and Neck Imaging with Dr. Peter Som. Dr. Curtin was awarded the Gold Medal of the American Society of Head and Neck Radiology (ASHNR) and the Presidential Citation of the American Academy of Otolaryngology- Head and Neck Surgery. He has served as President of the ASHNR as well as the North American Skull Base Society. Dr. Curtin is particularly proud of having received the teacher of the year award from the Massachusetts General Hospital radiology residents and also the teaching award from the Otolaryngology residents of Harvard Medical School. He was recently honored as “Distinguished Alumnus” by Upstate Medical University.

In Pittsburgh, Dr. Curtin met and married Carole Livingston. They have been married over thirty years and currently live just west of Boston. Carole and Hugh have three children, Matthew, Eric and Rachel. The most recent addition is Rebecca, their first grandchild.
General/CME Information

CME ACCREDITATION:
This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint providership of PESI, Inc. and North American Skull Base Society. PESI, Inc. is accredited by the ACCME to provide continuing medical education for physicians.

AMA PRA Designation Statement
The PESI, Inc. designates this live educational activity for a maximum of 20.5 AMA PRA Category 1 Credit[s]™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

International CME
International Physicians are formally eligible for AMA PRA Category 1 Credit™.

Physician Assistants
AAPA accepts Category 1 credit from AOACCME, Prescribed credit from AAFP, and AMA PRA Category 1 Credit™ for the PRA from organizations accredited by ACCME.

Registered Dieticians
For the purpose of recertification the Commission on Dietetic Registration recognizes courses accredited with AMA PRA Category 1 Credit™.

Nurses
For the purpose of recertification, the American Nurses Credentialing Center accepts AMA PRA Category 1 Credit™ issued by organizations accredited by the ACCME.

CA Nurses
Aspen CME Services is approved by the California Board of Registered Nursing, Provider number CEP14739, for 20.5 contact hours.

Pharmacists
For the purpose of recertification, the American Council of Pharmacy Education accepts AMA PRA Category 1 Credit™ issued by organizations accredited by the ACCME (Accreditation Council for Continuing Medical Education) for attendance at structured learning activities.

Satisfactory Completion for credits:
All attendees must have completed and turned in a course attendance/evaluation form prior to leaving the conference. Each session claimed for credit must be attended in it's entirety.
General Information

**ANNUAL MEETING OBJECTIVES**

Upon completion of this course, participants will be able to:

- Understand and explain most recent recommendations for management of skull base pathology.
- Describe recent advances in instrumentation and technology in skull base surgery.
- Gain knowledge in challenging skull base pathology from experienced leaders in the field.
- Collaborate in multidisciplinary working groups to identify state of the art management for select skull base pathology.
- Gain knowledge on optimal technical surgical management of complex skull base pathology through video analysis and expert critique of intraoperative video.
- Establish consensus statement on management of complex skull base pathology through review of existing medical literature.

**WHO SHOULD ATTEND**

The NASBS meeting is open to NASBS members and non-members.

**TARGET AUDIENCE**

- Otolaryngologists, head and neck surgeons, neurosurgeons, reconstructive surgeons, radiation oncologists, radiologists, medical oncologists, physical rehabilitation physicians, ophthalmologists, neurologists, maxillofacial surgeons, maxillofacial prosthetists and endocrinologists.
- Targeted allied health professionals include physical therapists, oncology nurses, oral health specialists, occupational therapists, speech and language pathologists, optometrists and psychologists.

**DISCLOSURE INFORMATION**

In compliance with the ACCME Accreditation Criteria, the PESI, Inc., as the accredited provider of this activity, must ensure that anyone in a position to control the content of the educational activity has disclosed all relevant financial relationships with any commercial interest. All reported conflicts are managed by a designated official to ensure a bias-free presentation. Please see the insert to this program for the complete disclosure list.
MEMBERSHIP BENEFITS

• Active members will receive the official journal of the society, The Journal of Neurological Surgery Part B, a publication that contains peer reviewed original articles, review articles, and position papers. It also presents news and information on an international scope to keep members aware of recent and upcoming events, activities, and evolving developments in skull base surgery. Affiliate, International and Candidate members may subscribe to the journal for $100 annually.
• Discounted rates to attend the Annual Meeting
• Opportunities to network with colleagues and experts from across North America and globally
• Committees which provide opportunities for camaraderie, involvement and leadership development
• Online access to all members contact information.

Please visit www.nasbs.org/membership for more information or email membership@nasbs.org.

WHY JOIN NASBS?

Membership is based on an interest in skull base surgery and related sciences. Individuals with backgrounds in neurosurgery, otolaryngology, head and neck surgery, radiology, neuroradiology, otology, neurotology, plastic and reconstructive surgery, and others interested in skull base diseases are welcome to apply.
Meeting Hours

REGISTRATION HOURS
Thursday, February 6, 2020  12:30 pm – 7:00 pm
Friday, February 7, 2020   6:00 am – 6:30 pm
Saturday, February 8, 2020  6:30 am – 6:00 pm
Sunday, February 9, 2020   7:00 am – 12:00 pm

EXHIBIT HALL/POSTER HOURS
Thursday, February 6, 2020  12:00 pm to 6:00 pm  Exhibit Hall Set Up

Friday, February 7, 2020
9:00 am to 4:30 pm  Exhibit Hall Open
9:35 am to 10:05 am  Refreshment Break
12:20 pm to 1:20 pm  Lunch for Non-Members
3:30 pm to 4:00 pm  Refreshment Break
4:30 pm to 6:00 pm  Exhibit Hall Closed
6:00 pm to 7:30 pm  Welcome Reception

Saturday, February 8, 2020
9:00 am to 4:30 pm  Exhibit Hall Open
9:35 am to 10:05 am  Refreshment Break
12:20 pm to 1:20 pm  Lunch/Poster Viewing
3:30 pm to 4:00 pm  Refreshment Break
4:30 pm to 9:30 pm  Dismantle & Removal of Exhibits

*Dismantle & Removal Hours are subject to change

Past Presidents

1990  Paul J. Donald, MD  
1991  Laligam N. Sekhar, MD  
1992  Ivo P. Janecka, MD  
1993  Peter G. Smith, MD, PhD  
1994  Albert L. Rhoton, Jr., MD  
1995  Hugh Curtin, MD  
1996  Derald E. Brackmann, MD  
1997  Ossam Al Mefty, MD  
1998  Steven A. Newman, MD  
1999  John P. Leonetti, MD  
2000  Robert F. Spetzler, MD  
2001  Ian T. Jackson, MD  
2002  Vinod K. Anand, MD  
2003  Jon H. Robertson, MD  
2004  Jatin Shah, MD  
2005  Patrick J. Gullane, MD  
2006  Anil Nanda, MD  
2007  Guy J. Petrozzelli, MD  
2008  Franco DeMonte, MD  
2009  Daniel Nuss, MD  
2010  Peter Neligan, MD  
2011  Peter Constantino, MD  
2012  Dennis Kraus, MD  
2013  Carl Heilman, MD  
2014  Ehab Hanna, MD, FACS  
2015  Michael Link, MD  
2016  Carl Snyderman, MD, MBA  
2017  Jacques Morcos, MD, FRCS, FAANS  
2018  Ian Witterick, MD  
2019  James Evans, MD, FACS, FAANS
Convention Hotel Floor Plan

LA CANtera CLUBHOUSE

SECOND FLOOR
Convenion Hotel Floor Plan (Cont.)
## Disclosures

### Planner, Faculty, and Presenter Disclosures

ALL planners, faculty and presenters who could affect the content of this CME activity have provided disclosure of relationships with commercial interests. Only those that provided information indicating they have a financial relationship with a proprietary entity producing health care goods or services, with the exemption of non-profit or government organizations and non-health care related companies, are listed. (Financial relationships can include such things as grants or research support, employee, consultant, major stockholder, member of speaker’s bureau, etc.)

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Disclosures (Cont.)
## Disclosures (Cont.)

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No Disclosures

A  Boucher
A  Juliano
A  Rahimi
A  Di Rienzo
A  Donati
A  Marini
Aalap  Herur-Raman
Aaron  Cohen-Cadol
Aaron  Vidal
Aaron R Plitt
Aarti  Agarwal
Aarti  Purohit
Aashish  Shah
Aashish Bhatt
Aayushi  Mahajan
Abad Cherif  El Asri
Abdullah  Abera
Abdullah  Feroze
Abdullah M Abunimer
Abdullah Turki  AlOtieschan
Abdulrrazag  Ajlan
Abel  David
Abhijeet Gummadavelli
Abigail  Funari
Abir  Choudhury
Abtin Tabae
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Achiraya  Te
teeti
Adam  Enomoto
Adam  Kimple
Adam  Luginbuhl
Adam  Zanation
Adam  Flanders
Adam  J Kimple
Adam  M Zanation
Adam  Mikial Zanation
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Adedamola Adepoju
Adesh Tandon
Adham  M Khalafallah
Adib A Abla
Adrianna  Eder
Agahan  Unlu
Ahmad  Alhouri
Ahmad  Sedaghat
Ahmad  Kareem Almekkawi
Ahmed  Alkhani
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Ahmed  Aloraidi
Ahmed  Habib
Ahmed  Moawad
Ahmed  Mohyeldin
Ahmed  Mohyeldin
Ahmed S Abdelmeguid
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Santos
Akash D Shah
Akhiredo  Kondo
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Akira  Nakamizo
Akira  Teramoto
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Alan K Meeker
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Russomanno
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Anand  Patel
Anand K  Devaiah
Anand V Germanwala
Andre  Beer Furlan
Andre  Lamoth
Andre  Le  Roux
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Andrea  Lopez Salcedo
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Andrei  Koerbel
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Andres Camilo Vargas
Jimenez  
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Andrew  Holcomb
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Andrew  Tassler
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Aniket  Zinzuwadia
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Ashley  Zhang
Ashutosh  Kacker
Atakan  Orscelik
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Austin  T  Hoke
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Avital  Perry
Ayal  Aizer
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Mario Zuccarello
Mario V Zuccarello
Mark Jameson
Mark Midwinter
Mark Preul
Mark B Chakkes
Mark B Eisenberg
Mark C Dougherty
Mark C Preul
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Mark E Russo
Mark J Jameson
Mark W Gelpi
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Matthew L Kircher
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Michael Fana
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<td>Theodore H. Schwartz, MD</td>
<td>Weill Cornell Neurological Surgery New York, NY,</td>
<td>NY, United States</td>
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<tr>
<td>Kelly Scrantz, MD</td>
<td>Baton Rouge, LA</td>
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<td>Laligam Sekhar, MD, FACS,</td>
<td>University of Washington</td>
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<td>Mostafa Shahein, MD</td>
<td>COLUMBUS, OH, US</td>
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<td>Wenyin Shi, MD, PhD</td>
<td>Thomas Jefferson Univ</td>
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<td>Julie Silverstein, MD</td>
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<td>Raj Sindwani, MD</td>
<td>Cleveland Clinic Foundation</td>
<td>Cleveland, OH, United States</td>
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<td>Walavan Sivakumar, MD</td>
<td>John Wayne Cancer Institute</td>
<td>Torrance, CA, United States</td>
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<td>Carl Snyderman, MD, MBA</td>
<td>Univ of Pittsburgh Med Ctr</td>
<td>Pittsburgh, PA, United States</td>
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<td>Clementino Arturo Solares, MD, FACS</td>
<td>Emory University</td>
<td>Atlanta, GA, United States</td>
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<td>Name</td>
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<td>Allan D. Vescan, MD MSc. FRCSC</td>
<td>Sinai Health System</td>
<td>Toronto, ON, Canada</td>
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<td>Jarrett Elbert Walsh, MD, PhD</td>
<td>Uni of Iowa Roy Carver College of Medicine</td>
<td>Iowa City, IA, United States</td>
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<td>Patrick C Walz, MD</td>
<td>The Ohio State University Wexner Medical Center and Nationwide Children's Hospital</td>
<td>Columbus, OH, United States</td>
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<td>Eric W. Wang, MD</td>
<td>University of Pittsburgh Medical Center</td>
<td>Pittsburgh, PA, United States</td>
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<td>Marilene Beth Wang</td>
<td>David Geffen School of Med at UCLA</td>
<td>Los Angeles, CA, United States</td>
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<td>Brad Welling, MD</td>
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<td>Cameron Wick, MD</td>
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<td>R Mark Wiet, MD</td>
<td>Rush University Medical Center</td>
<td>Chicago, IL, United States</td>
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<td>Ted Wladis, MD</td>
<td>Slingerlands, NY, US</td>
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<td>Erika Woodson, MD</td>
<td>Cleveland Clinic Foundation</td>
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<td>Bradford Alan Woodworth, MD</td>
<td>Univ of AL at Birmingham</td>
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<td>Kaan Yagmurlu, MD</td>
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<td>Charlottesville, VA, US</td>
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<td>T. Jonathan Yang, MD</td>
<td>New York, NY</td>
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<td>Isaac Yang, MD</td>
<td>UCLA</td>
<td>Los Angeles, CA, United States</td>
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<td>Yu Lan Mary Ying, MD</td>
<td>Rutgers</td>
<td>Newark, NJ, United States</td>
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<td>A. Samy Youssef, MD, PhD</td>
<td>University of Colorado School of Medicine</td>
<td>Aurora, CO, United States</td>
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<td>Eugene Yu, MD</td>
<td>Princess Margaret Hsp</td>
<td>Toronto, ON, Canada</td>
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<td>Jenny Yu</td>
<td>University of Pittsburgh Medical Center - UPMC Eye Center</td>
<td>Pittsburgh, PA, United States</td>
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<td>Gabriel Zadeh, MD, PhD, FRCS(c)</td>
<td>Toronto Western Hosp</td>
<td>Toronto, ON, Canada</td>
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<td>Adam Mikial Zanation, MD</td>
<td>Univ of NC at Chapel Hill</td>
<td>Chapel Hill, NC, United States</td>
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<td>Georgios A Zenonos</td>
<td>University of Pittsburgh Medical Center</td>
<td>Miami, FL, United States</td>
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<td>Alice Zhao-Maxfield, MD</td>
<td>WESLESLEY HILLS, MA, US</td>
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<td>Lee Zimmer, MD, PhD</td>
<td>Cincinnati, OH, United States</td>
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<td>Nathan T Zwagerman, MD</td>
<td>Medical college of wisconsin</td>
<td>Milwaukee, WI, United States</td>
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## Friday, February 7

### Day 1: Annual Meeting

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<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tr>
<td>6:00am-6:30am</td>
<td>Registration</td>
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<tr>
<td>7:00am-7:30am</td>
<td>Breakfast</td>
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<td>7:30am-8:30am</td>
<td><strong>Scientific Sessions</strong></td>
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<td><strong>Main Topic 1: Trigeminal Schwannoma Surgery</strong> – Moderators: Michael Link &amp; A. Samy Youssef&lt;br&gt;Michael Link, Siviero Agazzi, Clementino Arturo Solares, Walfavan Sivakumar, Dukagjin M Blakaj</td>
<td>San Xavier</td>
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<td><strong>Main Topic 2: Clivial Chordomas</strong> – Moderators: Laligam Sekhar &amp; Norbert Liebsch&lt;br&gt;Laligam Sekhar, Jean Anderson Eloy, Shaan M. Raza, Aashish Bhatt, Scott Okuno</td>
<td>San Miguel</td>
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<td><strong>Main Topic 3: Esthesioneuroblastoma</strong> – Moderator: Ehab Hanna &amp; Jamie Joseph Van Gompel&lt;br&gt;Jamie Joseph Van Gompel, Gary L Callia, Shirley Y. Su, Jeffrey R Janus, Robert Foote</td>
<td>San Gabriel</td>
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<td><strong>Main Topic 4: Value Based Skull Base Surgery</strong> – Moderators: Harry Van Loveren &amp; Bernard R. Bendok&lt;br&gt;Bernard R. Bendok, Amin B Kassam, Erin L. McKeen, Matthew G Ewend, Arjun Parasher</td>
<td>San Augustine</td>
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<td><strong>Main Topic 5: Recalcitrant Meningiomas</strong> – Moderators: Ossama Al-Mefty &amp; Alfredo Quinones-Hinojosa&lt;br&gt;Ossama Al-Mefty, Gelareh Zadeh, Franco DeMonte, T. Jonathan Yang</td>
<td>San Felipe</td>
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<tr>
<td>8:35am-9:35am</td>
<td><strong>Expert Debates</strong></td>
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<td><strong>Expert Debate 2: Protons for Chordomas, Cost/Benefit</strong> – Moderators: Chester Frank Griffiths &amp; Franco DeMonte&lt;br&gt;Lola B. Chambless, Norbert Liebsch, Shaan M. Raza, Chandranath Sen</td>
<td>San Miguel</td>
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<td><strong>Expert Debate 3: Sinonasal Malignancies, Neoadjuvative or Not?</strong> – Moderators: Zoukka Sargi &amp; Mark Vanvares&lt;br&gt;Zoukka Sargi, Mark Vanvares, Jong Park, Brian David Thorp, Christopher H. Rassekh, Michael G Moore</td>
<td>San Gabriel</td>
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<td><strong>Expert Debate 4: Skull Base Coding</strong> – Moderators: Carl Snyderman &amp; Rick Friedman&lt;br&gt;Carl Snyderman, Rick Friedman, Cristine N Klatt-Cromwell, Adam Folbe, Stephen C Hernandez</td>
<td>San Augustine</td>
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<tr>
<td>9:35am-10:05am</td>
<td>Break with Exhibitors</td>
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<td>10:05am-12:20pm</td>
<td><strong>General Session</strong></td>
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<td>» Presidential Address</td>
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<td>» Research Grant Committee Update</td>
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<td>» Honored Guest Speakers</td>
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<td>Ricardo Carrau, Howard Krauss, Michael Link, Shaan M. Raza, Anand K. Devaiah, Daniel Nuss, Laligam Sekhar</td>
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<td>12:20pm-1:20pm</td>
<td>Lunch in Exhibit Hall</td>
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<td>1:20pm-2:20pm</td>
<td><strong>Hot Topic Sessions</strong></td>
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<td><strong>Hot Topic 1: Topics in Orbital Surgery</strong> – Moderators: Raymond I Cho &amp; William Couldwell&lt;br&gt;Jenny Yu, Doo-Sik Kang, Kris Moe, Andrei Koerbel</td>
<td>San Xavier</td>
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<td><strong>Hot Topic 2: Optimizing Endoscopic Skull Base Reconstruction</strong> – Moderators: Raj Sindwani&lt;br&gt;Mindy Robyn Rabinowitz, Cristine N Klatt-Cromwell, Jarrett Elbert Walsh</td>
<td>San Miguel</td>
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<td><strong>Hot Topic 3: Complex Pituitary Tumors: Giant Pituitary Adenomas or Invasive Pituitary Adenomas</strong> – Moderators: Nelson M Oyesiku &amp; Ian F. Dunn</td>
<td>San Gabriel</td>
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<td><strong>Hot Topic 4: Cavernous Sinus and Petroclival Meningiomas</strong> – Moderators: Giovanni Danesi &amp; James K. Liu&lt;br&gt;Anil Nanda, Deanna Sasaki-Adams, Adam Folbe, Christina Henson, Annie Moreau</td>
<td>San Augustine</td>
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<td>2:25pm-3:25pm</td>
<td><strong>Video Sessions</strong></td>
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<td><strong>Video Session 1: Orbital Approaches</strong> – Moderators: Miguel Soares Tepedino &amp; S Tonya Stefko&lt;br&gt;Tal Rubininstein, Janalee K Stokken, Raymond I Cho, Andrei Koerbel, Kris Moe, Alessandro Paluzzi</td>
<td>San Xavier</td>
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<td><strong>Video Session 2: Skull Base Reconstruction</strong> – Moderators: Vijay Agarwal &amp; Sanjeet V Pargarajan&lt;br&gt;Charles S. Ebert, Ramon Moreno-Luna, Patrick Michael Colley, Griffin D Santarelli, Allan D. Vescan, Samip N Patel</td>
<td>San Miguel</td>
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<tr>
<td>Time</td>
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<tr>
<td>3:00pm-5:00pm</td>
<td>Video Session 3: Extracapsular Tumor Surgery for Pituitary Tumors –</td>
<td>Moderators: Apio Antunes &amp; Victor Alcocer-Barradas</td>
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<td>Moderators: Apio Antunes &amp; Victor Alcocer-Barradas</td>
<td>Maria Peris Celda, Ralph Abi Hachem, Garni Barkhoudarian, Russell Lonser, Tyler James Kenning</td>
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<td>Video Session 4: Petroclival Meningiomas Surgery –</td>
<td>Moderators: Mustafa Baskaya &amp; Peter Morone</td>
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<td>Moderators: Mustafa Baskaya &amp; Peter Morone</td>
<td>Alejandro Monroy-Sosa, Clementino Arturo Solares, Carl Snyderman, Diego Mendez Rosito, Ossama Al-Mefty, Amir R. Dehdashti</td>
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<td>4:00pm-6:00pm</td>
<td>Acoustic Neuroma Education Day – See page __ for Schedule</td>
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<td>4:00pm-5:00pm</td>
<td>Competition Time – Moderator: Ricardo Carrau</td>
<td>Extra Mayo, Please vs. Miami Vice</td>
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<tr>
<td>4:00pm-5:00pm</td>
<td>Proffered Paper Sessions</td>
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### Proffered Papers 1: Pituitary 1 – Moderators: Thomas Beaumont & Apio Antunes

001: PRIMARY VISUAL CORTICAL THICKNESS CORRELATES WITH VISUAL FIELD DEFECTS IN PATIENTS WITH PITUITARY MACROADENOMAS: A STRUCTURAL 7 TESLA RETINOTOPIC ANALYSIS - John W Rutland, Bradley N Delman, Kuang-Han Huang, Gaurav Verma, Noah C Benson, Dillan F Villavisanim, Hung-Mo Lin, Joshua B Bederson, James Chelnis, Priti Balchandani, Raj K Shrivastava; Icahn School of Medicine at Mount Sinai, New York University

002: 7 TESLA DIFFUSION-WEIGHTED MRI APPARENT DIFFUSION COEFFICIENT FOR PREOPERATIVE EVALUATION OF PITUITARY ADENOMA CONSISTENCY - John W Rutland, Joshua Loewenstern, Daniel Ranti, Nadejda Tsankova, Joshua B Bederson, Bradley N Delman, Priti Balchandani, Raj K Shrivastava; Icahn School of Medicine at Mount Sinai

003: POST-OPERATIVE PAIN MANAGEMENT AND PERCEIVED PATIENT OUTCOMES FOLLOWING ENDOSCOPIC PITUITARY SURGERY - Austin T Hoke, BS, Madison Malftiano, BS, Lucas Frickey, BS, Adam J Kimple, MD, PhD, Adam M Zanation, MD, Charles S Ebert, MD, MPH, Brent A Senior, MD, Brian D Thorp, MD; UNC School of Medicine, UNC Otolaryngology / Head and Neck Surgery

004: A HIGHLY SENSITIVE AND SPECIFIC ACTH-BASED PREDICTOR OF LONG-TERM REMISSION AFTER SURGERY FOR CUSHING’S DISEASE - Marcus A Zachariah, MD, PhD, Santino G Cua, BS, Bradley A Otto, MD, Ricardo L Carrau, MD, Luma Ghalib, MD, Russel R Lonser, MD, Daniel M Prevedello, MD; The Ohio State University

005: REPEAT SERUM SODIUM VALUES OVER 145 PREDICT DIABETES INSIPIDUS AFTER ENDOSCOPIC TRANSPHENOIDAL PITUITARY TUMOR RESECTION - Rebecca Breese, MD, Avinash Chandran, PhD, Sebastian Gil, Weston Northam, MD, Elizabeth Harris, MD, Brian Thorp, MD, Adam Zanation, MD, Deanna Sasaki-Adams, MD, Matthew Ewenden, MD, Carolyn Quinsey, MD; Wake Forest Baptist Health, University of North Carolina, UNC School of Medicine

006: READMISSION AFTER ENDOSCOPIC TRANSPHENOIDAL PITUITARY SURGERY: ANALYSIS OF 584 CONSECUTIVE CASES - Iyan Younus, Georgiana Dobri, MD, Rohan Ramakrishna, MD, Theodore H Schwartz, MD, Weill Medical College/Cornell University

007: LONG TERM HYPOCORTISOLISM AFTER PITUITARY SURGERY: CAN POD1 STRESS RESPONSE PREDICT LONG-TERM OUTCOME? - Pascal Lavergne, MD, FRCSC, Prachi Patel, Chandala Chitguppi, MD, Tawfiq Khouri, MD, Mindy Rabinowitz, MD, Gurston G Nyquist, MD, Marc R Rosen, MD, Christopher J Farrell, MD, James J Evans, MD, Thomas Jefferson University

008: LONG-TERM OUTCOMES AFTER ENDOSCOPIC ENDonasal Surgery for Non-Functioning Pituitary Macroadenomas - Mina Gerges, MD, Kavelin Rumalla, BA, Saniya Godil, MD, Iyan Younus, Walid Elshamy, Viay K. Anand, MD, Theodore H. Schwartz, Georgiana Dobri; Department of Neurosurgery, Weill Cornell Medicine, New York Presbyterian Hospital, New York NY, 6Department of Biomedical and Health Informatics, University of Missouri-Kansas City School of Medicine, Kansas City, MO, USA
<table>
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<tr>
<th>Proffered Papers 2: Reconstruction 1 – Moderators: Arjun Parasher &amp; Ralph Abi Hachem</th>
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<tr>
<td><strong>009</strong>: DURAL SEALANTS DO NOT REDUCE POSTOPERATIVE CEREBROSPINAL FLUID LEAKS AFTER ENDOSCOPIC ENDONASAL SKULL BASE SURGERY - Michael McDowell, Rachel Jacobs, BS, Benita Valappil, Eric Wang, MD, Carl Snyderman, MD, MBA, Paul A Gardner, MD; University of Pittsburgh Medical Center</td>
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<td><strong>010</strong>: TRANSORBITAL ENDOSCOPIC APPROACH FOR REPAIR OF FRONTAL SINUS CEREBROSPINAL FLUID LEAKS: A SINGLE-INSTITUTIONAL EXPERIENCE - Baywat Noiphithak, MD, Pree Nimmanitya, MD, Vich Yindeedej, MD, Pataravit Rukskul, MD; Division of Neurosurgery, Department of Surgery, Faculty of Medicine, Thammasat University</td>
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<td><strong>011</strong>: A NOVEL SCORING SYSTEM FOR COMPLEXITY AND OPERATIVE SUCCESS OF OSTEOCUTANEOUS FREE-FLAP RECONSTRUCTION OF THE MIDFACE AND ORBIT - Brian Swendseid, MD, Swar Vimawala, BS, Matthew Stewart, BS, Tony Richa, MD, Ryan Heffelfinger, MD, Howard Krein, MD, PhD, Adam Luginbuhl, MD, Richard Goldman, MD, Joseph Curry, MD; Thomas Jefferson University Hospitals</td>
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<td><strong>012</strong>: HETEROGENEITY IN OUTCOMES REPORTING IN ENDOSCOPIC ENDONASAL SKULL BASE RECONSTRUCTION: A SYSTEMATIC REVIEW - Christina Dorismond, MPH, Griffin D Santarelli, MD, Brian D Thorp, MD, Adam J Kimple, MD, PhD, Charles S Ebert, MD, Adam M Zanation, MD; University of North Carolina School of Medicine, ²Barrow Neurological Institute</td>
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<td><strong>013</strong>: SINONASAL QUALITY-OF-LIFE OUTCOMES AFTER ENDOSCOPIC ENDONASAL TRANSSPHENOIDAL SURGERY WITH FREE MUCOSAL GRAFT RECONSTRUCTION - Tara J Wu, MD, Angela Chen, BS, Marvin Bergsneider, MD, Jivianne T Lee, Jeffrey D Suh, Marlene B Wang; UCLA Department of Head and Neck Surgery, ²UCLA Department of Neurosurgery</td>
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<td><strong>014</strong>: CORRELATION OF SKULL BASE CSF LEAK FLOW RATES WITH FLUID PATTERN ON EARLY, DELAYED AND SUBTRACTION VOLUMETRIC EXTENDED ECHO TRAIN T2 MRI - John W Rutland, Satish Govindaraj, Corey M Gill, Michael Shohet, Alfred Iloreta, Joshua B Bederson, Raj K Shrivastava, Bradley N Delman; Icahn School of Medicine at Mount Sinai</td>
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<td><strong>015</strong>: DECREASED RATE OF CSF LEAKS AFTER SKULL BASE FRACTURES IN THE 21ST CENTURY: A TWO-INSTITUTION EXPERIENCE - Brittany M Stopa, MPH, Oscar A Leyva, Cierra Harper, Kyla A Truman, Carleton E Corrales, MD, Timothy R Smith, MD, PhD, MPH, William B Gormley, MD, MPH, MBA; ²Computational Neuroscience Outcomes Center at Harvard, Brigham and Women’s Hospital, Department of Neurosurgery, Boston, MA, USA, ²Brigham and Women’s Hospital, Division of Otolaryngology, Boston, MA, USA</td>
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<td><strong>016</strong>: THE RECONSTRUCTIVE PHASE IN THE EXTENDED ENDOSCOPIC ENDONASAL APPROACHES TO THE SKULL BASE AND THE ANTERIOR CRANO-VERTEBRAL JUNCTION: FROM THE OPERATING ROOM TO THE E.N.T. OUTPATIENT CLINIC - L. G. M. Di Somma, M. Dobran, V. Liverotti, M. Capece, D. Aiudi, M. Iacoangeli; Department Of Neurosurgery, Marche Polytechnic University, Umberto I General Hospital, Ancona, Italy</td>
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Proffered Papers 3: Malignancies 1 – Moderators: Clementino Arturo Solares & Nyall R London
017: MULTI-CENTER ANALYSIS OF CLINICAL OUTCOMES AND BIOMARKERS OF ESTHESIONEUROBLASTOMA - Matt Lechner, MD, PhD1, Mario Hermesen, PhD2, Mario Turri-Zanoni, MD2, Volker H Schartinger, MD2, Sam Helman, MD3, Jordan Varghese3, C. Arturo Solares, MD4, Kelly Magliocca, MD6, Simon Wang, MD7, Susanne Sprung, MD6, David Howard, FRCR1, Nils Engel, MD10, David Capper, MD11, Ulrich Schueller, MD2, Martin Forster, PhD13, Amrita Jay, MBBS4, Cillian Forde, MBBS15, Jozsef Dudas, PhD2, Herbert Riechelmann, MD4, R. Peter Manes, MD15, Wendell G Yarbrough, MD16, Jose L Llorente, MD2, Sarah K Wise5, Paolo Castelnuovo, MD3, Valerie J Lund, CBE17; 1UCL Cancer Institute, University College London, 72 Huntley Street, London, WC1E 6DD, United Kingdom, 2Instituto de Investigación Sanitaria del Principado de Asturias (ISPA), Instituto Universitario de Oncología del Principado de Asturias (IUOPA), Centro de Investigación Biomédica en Red (CIBER-ONC), Oviedo, Spain, 3Department of Otorhinolaryngology-Head & Neck Surgery, University of Insubria, Varese, Italy, 4Department of Otorhinolaryngology-Head and Neck Surgery, Medical University of Innsbruck, Innsbruck, Austria, 5Department of Otorhinolaryngology-Head and Neck Surgery, Emory University, Atlanta, Georgia, US, 6Department of Pathology, Emory University, Atlanta, Georgia, US, 7Institute of Nuclear Medicine, University College London Hospitals NHS Trust, London, United Kingdom, 8Department of Pathology, Imperial College Healthcare NHS Trust, London, UK, 9Ludwig-Maximilians University, Munich, Germany, 10Department of Neuropathology, Charite University, Berlin, Germany, 11University Medical Center Hamburg-Eppendorf, Hamburg, Germany, 12Department of Pathology, Emory University, Atlanta, Georgia, US, 13Institute of Pathology, Medical University of Innsbruck, Innsbruck, Austria, 14Head and Neck Cancer Unit, Imperial College Healthcare NHS Trust, London, UK, 15Department of Otolaryngology, Johns Hopkins University, Baltimore, Maryland, US, 16Department of Otolaryngology, Stanford University, Stanford, California, US, 17Department of Otolaryngology, The Ohio State University, Columbus, Ohio, US, 18Royal National Throat, Nose and Ear Hospital, London, UK.

018: TREATMENT MODALITY ROLE IN SURVIVAL OF PATIENTS WITH ADVANCED SQUAMOUS CELL CARCINOMA OF THE SINONASAL CAVITY: A NATIONAL CANCER DATABASE STUDY - Chris Johnson, PharmD, MD, Augusta University

019: SURVIVAL OUTCOMES IN SINONASAL POORLY DIFFERENTIATED SQUAMOUS CELL CARCINOMA - Feras Y Ackall, MD1, Ian Barak, MS2, Khalil Issa, MD, Jordan Teitelbaum, DO1, David W Jung, MD1, Sin-Ho Jung, PhD1, Ralph Abi-Hachem, MD, MSc1; 1Duke University Medical Center, 2Duke University, Durham, NC, US.

020: MANAGEMENT OF SOFT TISSUE SARCOMAS OF THE SKULL BASE: FACTORS IMPACTING TUMOR CONTROL AND DISEASE-SPECIFIC SURVIVAL - Idara Edem, MD, Hipolito Demonte, MD, Ahmed Habib, MD, Shirley Su, MBBS, Ehab Hanna, MD, Paul Gidley, MD, Marc-elie Nader, MD, Michael Kupferman, MD, Jack Phan, MD, Shaan Raza, MD; The University of Texas M.D. Anderson Cancer Center

021: TREATMENT OF SINONASAL SQUAMOUS CELL CARCINOMA: THE EXPERIENCE AT A SINGLE TERTIARY CARE FACILITY OVER 32 YEARS. - Michael J Sylvester, Rachel Fenberg, Erin L McKean, MD, Kyle K VanKoevering, MD; University of Michigan

022: ANEURYSMAL BONE CYSTS OF THE PARANASAL SINUSES: THE MAYO CLINIC EXPERIENCE AND REVIEW OF THE LITERATURE - Alyssa J Smith, MD, Kathryn Van Abel, MD, Garret Choby, MD; Mayo Clinic

023: SINONASAL UNDIFFERENTIATED CARCINOMA: AN INSTITUTIONAL TREND TOWARDS INDUCTION CHEMOTHERAPY FOLLOWED BY DEFINITIVE CHEMORADIATION - Nyall London, MD, PhD1, Ahmed Mohyeldin2, George Daoud3, Dukagjin Blakaj3, Mauricio Gamez3, Ricardo Carrau3; 1Johns Hopkins University, 2Stanford University, 3The Ohio State University

024: SINONASAL SQUAMOUS CELL CARCINOMA OUTCOMES: DOES TREATMENT AT A HIGH-VOLUME CENTER CONFER SURVIVAL BENEFIT? - Jordan I Teitelbaum, DO, Ian Barak, Khalil Issa, MD, Feras Ackall, MD, Sin-Ho Jung, PhD, David Jung, MD, Ralph Abi-Hachem, MD, MSc; Duke University Medical Center

025: 1000 CONSECUTIVE ENDONASAL ENDOSCOPIC SKULL BASE CASES: HOW LONG IS THE LEARNING CURVE? - Ivan Younus, BS, Rafael Urbe-Cardenas, MD, Peter Morgenstern, MD, Mahmoud ElAlby, MSc, Ashutosh Kacker, MD, Vijay K Anand, MD, Theodore H Schwartz, MD, Weill Cornell Medicine

026: COMPLICATIONS FOLLOWING 1,002 ENDOSCOPIC ENDONASAL APPROACHES AT A SINGLE TERTIARY CENTER: LESSONS LEARNED 2010-2018 - Douglas A Hardysty, MD, Alaa Montaser, MD, Daniel Kretsaoulas, MD, Varun Shah, BA, Brad A Otto, Ricardo Carrau, MD, Daniel M Prevedello, MD; Ohio State University

027: DVT/PER RATES AND ETIOLOGIES AFTER ENDOSCOPIC/ENDOSCOPIC-ASSISTED SKULL BASE SURGERY - Kwainyarat Jitaroos, MD, Sun Hee Song, MD, Michael T Chang, MD, Yossawee Wongworawut, MD, Nour Ibrahim, MD, Juan C Fernandez-Miranda, MD, Zara M Patel, MD, Robert L Dodds, MD, Peter H Hwang, MD, Griffith R Harsh, MD, Jayakar V Nayak, MD; Stanford University, 1University of California, Davis

028: IMPACT OF FRAILTY ON OUTCOMES FOLLOWING ENDOSCOPIC ENDONASAL SKULL BASE SURGERY: A PROSPECTIVE COHORT ANALYSIS OF 152 PATIENTS - Ezekiel Goldschmidt, Nitin Agrawal, Tavis Taylor, Stefanie Altieri, Andrew Bilderback, Carl H Snyderman, Paul Gardner, Daniel Hall; University of Pittsburgh

029: CLINICAL OUTCOMES AND COMPLICATIONS FOLLOWING INTERNAL NEUROLYSIS FOR THE TREATMENT OF TRIGEMINAL NEURALGIA: AN INSTITUTIONAL CASE SERIES - Jacob Maizza, BS, Victor Sabournin, MD, Pascal Lavergne, MD, Jeyfford Head, BA, Tomas Garzon, MD, Donald Ye, MD, Anthony Stefanelli, MD, Fadi Al-Saiegh, MD, James J Evans, MD, Thomas Jefferson University

030: CLINICAL ANALYSIS OF 11 CASES OF PSEUDODAUNEURYSM HEMORRHAGE OF INTERNAL CAROTID ARTERY AFTER radiotherapy FOR NASOPHARYNGEAL CARCINOMA - Houyong Li, Dehui Wang, Huabin Li, Yurong Gu, Xicai Sun, Huapeng Yu, Quan Liu, Huankang Zhang; Department of Otolaryngology Eye, Ear, Nose and Throat Hospital Shanghai Medical College of Fudan University

031: POSTOPERATIVE NASAL DEBRIDEMENT IN THE OPERATING ROOM AFTER ENDOSCOPIC SKULL BASE SURGERY: WHEN IS IT INDICATED? - Adedamola Adepoju, MD, Kent Curran, BS, Maria Peris-Celda, MD, PhD, Tyler Kenning, MD, Carlos Pinheiro-Neto, MD, PhD; Department of Neurosurgery, Albany Medical Center, 1Albany Medical College, 2Division of Otolaryngology and Head and Neck Surgery, Department of Surgery, Albany Medical Center

032: THE EXPANDED ENDONASAL APPROACH: DOES GREATER EXPOSURE CHANGE RHINOLOGIC OUTCOMES? - John M Byrne IV, BA, Ari Stone, BA, Margaret Tallmadge, BS, Krista Brackman, BS, Bhavani Kura, MD, Juanita Celix, MD, MPH, Amin Kassam, MD, FRCSC, Sammy Khaillil, MD, MSc, FRCSC; 1Aurora Research Institute, 2Aurora Neuroscience Innovation Institute

5:00pm-6:00pm


033: COMBINED ENDOSCOPIC-ENDONASAL SUPRAHOLE KEYHOLE SURGERY FOR THE MANAGEMENT OF ANTERIOR SKULL BASE MENINGIOMAS: DIFFERENT VIEW OF THE SAME PATHOLOGY - V. Liverottini, G. Polonara, A. Donati, P. Martorano, F. Mancini, G. Bizzocchi, M. Iacoange, Ji; 1Department of Neurosurgery, Marche Polytechnic University, Umberto I General Hospital, Ancona, Italy, 2Department of Radiology, Section of Neuroradiology, Marche Polytechnic University, Umberto I General Hospital, Ancona, Italy, 3Department of Anesthesiology and Intensive Care, Umberto I General Hospital, Ancona, Italy, 4Department of Anesthesiology, Section of Neuroanesthesiology, Umberto I General Hospital, Ancona, Italy

034: DISTAL VASCULAR COMPRESSION (BEYOND THE OBERSTEINER REDLICH ZONE) DURING FULLY ENDOSCOPIC MICROVASCULAR DECOMPRESS\ION FOR TRIGEMINAL NEURALGIA - Rachel Blue, MD, John YK Lee, MD, MSCE, University of Pennsylvania

035: COMPARATIVE ANALYSIS OF ENDOSCOPIC TRANSORBITAL APPROACH AND EXTENDED MINI-TERIONAL APPROACH FOR SPHENOID WING MENINGIOMAS WITH OSSEOUS INVOLVE\MENT: PRELIMINARY SURGICAL RESULTS - Hun Ho Park, MD, Jihwan Yoo, MD, In-Sik Yun, MD, PhD, Chang-Ki Hong; 1Department of Neurosurgery, Gangnam Severance Hospital, Yonsei University, 2Department of Plastic surgery, Gangnam Severance Hospital, Yonsei University

036: EXTENT OF SURGICAL RESECTION OF EPIDERMID TUMORS AFFECTS RISK OF RECURRENCE: RESULTS OF THE LARGEST META-ANALYSIS OF 691 PATIENTS - Brian Shear, BS, Lan Jin, PhD, Yawei Zhang, MD, PhD, Wyatt David, MS, Elena Fomchenko, MD, PhD, E. Zeynep Ersin-Orom, PhD, Anita Huttner, MD, Robert K Fulbright, MD, Jennifer Moliterno, MD, Yale Department of Neurosurgery, Yale Department of Surgery, Yale Department of Pathology, Yale Department of Radiology

037: CHOROID PLEXUS PAPILLOMAS OF THE CEREBELLOPONTINE ANGLE AND FOURTH VENTRI\CLE: COHORT STUDY - Amanda Munoz Casabella, MD, Avital Perry, MD, Christopher S Graffeo, MD, Lucas P Carlstrom, MD, Michael J Link, MD, Mayo Clinic

038: ENDOSCOPIC ENDONASAL VERSUS TRANSCRANIAL APPROACH TO RESECTION OF OLFAC\TORY GROOVE MENINGIOMAS: A SYSTEMATIC REVIEW - Aarti Purohit, BS, Roshani Jha, MD, Theodore H Schwartz, MD, Weill Cornell Medicine

039: HIGH VARIABILITY OF “OUTSIDE RADIOLOGIST REPORTS” IN TRIGEMINAL NEURALGIA PATIENTS UNDERGOING ENDOSCOPIC MICROVASCULAR DECOMPRESS\ION - Rachel Blue, MD, Denise Miller, CRNP, Carrie Li, John YK Lee, MD, MSCE; University Of Pennsylvania

040: SURGICAL TIPS AND PITFALLS OF ENDOSCOPIC SUPERIOR EYELID TRANSORBITAL SURGERY FOR ORBIT, MIDDLE FOSSA AND MECKEL'S CAVE LESIONS - Doosik Kong, MD, PhD, Minsoo Kim, MD, Samsung Medical Center, Sungkyunkwan University
Proffered Papers 6: Endoscopic Endonasal – Moderators: Leo Ditzel & Gabriel Zada

044: THE ENDONASAL ENDOSCOPIC PERSPECTIVE OF PARACLINOID ANEURYSMS – A CADAVERIC ANATOMICAL ANALYSIS - Huy Q Truong, MD,1 Salomon Cohen-Cohen, MD,2 Nathan T Zwagerman, MD,1 Juan C Fernandez-Miranda, MD,1 Paul A Gardner, MD,3 1Medical College of Wisconsin, 2Mayo Clinic Rochester, 3Stanford University Medical Center, 4University of Pittsburgh Medical Center

042: ENDOSCOPIC ENDONASAL APPROACH FOR CRANIOPHARYNGIOMAS WITH INTRAVENTRICULAR EXTENSION: LONG-TERM OUTCOMES AND META-ANALYSIS - Hanna Alagattas, MD, Pradeep Setty, DO, Ezequiel Goldschmidt, MD, PhD, Eric W Wang, MD, Elizabeth Tyler-Kabara, PhD, Carl H Snyderman, MD, MBA, Paul A Gardner; UPMC

043: CLINICAL OUTCOMES OF ENDOSCOPIC ENDONASAL ODONTOID RESECTION: A SINGLE CENTER EXPERIENCE - Elysis Grose1, Ioana Moldovan, MD, MSc,2 Shaun Kilty, MD, FRCSC1, Charles Agbi, MB, BS, FRCS, FRSCSed, SN, FRCSC,2 Andre Lamothe, MD, FRCSC,2 Fahad Alkharyaf2, MD, MSc, CID, FRCSA1, 1Faculty of Medicine, University of Ottawa, Ottawa, Ontario, Canada, 2Division of Neurosurgery, Department of Surgery, The Ottawa Hospital Research Institute, Ottawa, Canada, 3Department of Otolaryngology- Head & Neck Surgery, University of Ottawa, Ottawa, Canada, 4Division of Neurosurgery, Department of Surgery, University of Ottawa, Ottawa, Ontario, Canada, 5Department of Otolaryngology- Head & Neck Surgery, The Ottawa Hospital, Ottawa, Canada

044: AN UPDATE ON THE ENDOSCOPIC ENDONASAL APPROACH TO ORBITAL AND ORBITAL APEX LESIONS: A SERIES OF 97 PATIENTS - Joel Franco, MD, Nathan Zwagerman, MD, Carl Snyderman, MD, Paul Gardner, MD, Tonya Stefko, MD, Eric Wang, MD, 1University of Pittsburgh Medical Center, 2Medical College of Wisconsin

045: ENDOSCOPIC TRANSORAL NASOPHARYNGECTOMY - Roberto M Soriano, MD, Rima S Rindler, MD, Samuel N Helman, MD, Gustavo Pradilla, MD, C. Arturo Solares, MD, Emory University (SSO)

047: IMPACT OF MEDICAID INSURANCE ON OUTCOMES FOLLOWING ENDOSCOPIC TRANSSPHENOIDAL PITUITARY SURGERY - Ivan Younus, BS, Rohan Ramakrishna, MD, Ashutosh Kacker, MD, Abtin Tabaei, MD, Vijay K Anand, MD, Theodore H Schwartz, MD, Weill Cornell Medicine

048: “EXTREME” INDICATION OF THE ENDOSCOPIC ENDONASAL APPROACH FOR COMPLEX C1-C2 FRACTURES. - M. Dobran, A. Marini, E. Carrassi, M. Capece, R. Paracino, M. Iacoangeli; Department of Neurological Surgery, Thomas Jefferson University Hospital, 2Division of Neurosurgery, Department of Surgery, University of Ottawa, Ottawa, Canada, 3Department of Otolaryngology- Head & Neck Surgery, The Ottawa Hospital, Ottawa, Canada

Proffered Papers 7: Advances and Outcomes – Moderators: Shaan M. Raza & Mateus Dal Fabro

049: DEVELOPMENT OF CLINICALLY APPLICABLE MOLECULAR MARKERS DISTINGUISHING SINONASAL UNDIFFERENTIATED CARCINOMA FROM SINONASAL SQUAMOUS CELL CARCINOMA - Yoko Takahashi, PhD,1 Frederico O Gleber-Netto, MSc, DDS, PhD, Diana Bell, MD, Dianna Roberts, PhD, Tong-Xin Xie, MD, PhD, Ahmed S Abdelmeguid, MD, PhD, Curtis Pickering, PhD, Jeffrey N Myers, MD, PhD, Ehab Y Hanna, MD; The University of Texas MD Anderson Cancer Center

050: SINONASAL MUCOSAL MELANOMA: A COMPARISON OF OUTCOMES BETWEEN SURGICAL RESECTION AND IMMUNE CHECKPOINT INHIBITION - Shivangi Lohia, MD, Stephanie Flukes, MD, Alexandre N Shoushtari, MD, Akash D Shah, MD, Ian Ganly, MD, Snehal G Patel, MD, Jennifer R Cracchiolo, MD, Christopher Barker, MD, Jatin P Shah, MD, Viviane S Tabar, MD, Marc Cohen, MD; Memorial Sloan Kettering Cancer Center

051: SURGICAL MANAGEMENT OF SKULL BASE/INFRATEMPORAL FOSSA MALIGNANCIES: PREDICTORS OF POST-OPERATIVE PERFORMANCE - Patrick J Hunt, MD, Amrit P Shah, MD, Christopher Barker, MD, Jatin P Shah, MD, Viviane S Tabar, MD, Marc Cohen, MD; Memorial Sloan Kettering Cancer Center

052: ENDOSCOPIC TRANSORAL NASOPHARYNGECTOMY: A SERIES OF 97 PATIENTS - Shivangi Lohia, MD, Stephanie Flukes, MD, Amrit P Shah, MD, Christopher Barker, MD, Jatin P Shah, MD, Viviane S Tabar, MD, Marc Cohen, MD; Memorial Sloan Kettering Cancer Center

053: IMPACT OF AGE ON THE TREATMENT AND SURVIVAL IN SINONASAL MALIGNANCIES - Chandana Chitguppi, MD, Tawfiq Khoury, MD, Pascal Lavergne, MD, Prachi Patel, BA, Kira Murphy, MD, Mindy Rabinowitz, MD, Gurston Nyquist, MD, James Evans, MD, Marc Rosen, MD, Department of Otolaryngology and Head and Neck Surgery, Thomas Jefferson University Hospital, Department of Neurological Surgery, Thomas Jefferson University Hospital

054: POST TREATMENT SURVEILLANCE FOR RECURRENCE IN SINONASAL MALIGNANCIES - Gurston Nyquist, MD, Prachi Patel, BA, Chandana Chitguppi, MD, Swar Viwamala, BS, Tawfiq Khoury, MD, Mindy Rabinowitz, MD, Pascal Lavergne, MD, FRCSC, James Evans, MD, Marc Rosen; Thomas Jefferson University, Department of Otolaryngology - Head and Neck Surgery, 2Thomas Jefferson University, Department of Neurosurgery

056: THE INFLUENCE OF HOSPITAL VOLUME ON THE OUTCOMES OF NASOPHARYNGEAL, SINONASAL AND SKULL-BASE TUMORS: A SYSTEMATIC REVIEW OF THE LITERATURE. - Rahul K Sharma, BS, Stephanie Flukes, MD, Marc A Cohen, MD, MPH, 1Columbia University Vagelos College of Physicians & Surgeons, New York, NY, USA, 2Head and Neck Service, Department of Surgery, Memorial Sloan Kettering Cancer Center, New York, NY, USA
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<tr>
<th>Paper Number</th>
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<tr>
<td>057</td>
<td>HYBRID ROBOTICS IN ENDOSCOPIC TRANSNASAL SKULL BASE SURGERY: REPORT OF AN INITIAL, SINGLE-CENTRE CLINICAL EXPERIENCE</td>
<td>Francesca Zappa et al.</td>
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<td>058</td>
<td>CONTRALATERAL TRANSMAXILLARY CORRIDOR TO THE CAVERNOUS SINUS: A USEFUL ADJUNCT TO THE ENDOSCOPIC ENDONASAL APPROACH TO THE PARASELLAR REGION</td>
<td>Yury Anania et al.</td>
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<td>059</td>
<td>3-DIMENSIONAL EXOSCOPIC TEMPORAL BONE RESECTIONS FOR ADVANCED HEAD AND NECK CANCER</td>
<td>Mallory J Raymond et al.</td>
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<td>060</td>
<td>ENDOCOSCOPIC ENDONASAL SKULL BASE SURGERY USING INDOCYANINE GREEN AND RELATIONSHIP TO PREOPERATIVE RADIOLOGICAL IMAGING</td>
<td>Mostafa Shahein et al.</td>
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<td>061</td>
<td>NEUROSURGICAL APPLICATIONS OF A NOVEL TOUGH ADHESIVE BIOMATERIAL</td>
<td>Kyle C Wu et al.</td>
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<td>062</td>
<td>SINGLE INSTITUTIONAL EXPERIENCE WITH BIOABSORBABLE STEROID ELUTING STENT TREATMENT OF RECURRENT RATHKE'S CLEFT CYST</td>
<td>Matthew Z Sun et al.</td>
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<td>063</td>
<td>ANATOMICAL ANALYSIS AND PROPOSED DESIGN OF AN ANGLED DRILL FOR ENDOCOSCOPIC ENDONASAL PETROSECTOMY</td>
<td>Huy Q Truong et al.</td>
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6:00pm-7:30pm Welcome Reception & Poster Viewing
Saturday, February 8
Day 2: Annual Meeting

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<tr>
<td>6:30am-6:00pm</td>
<td>Registration</td>
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<td>7:00am-7:30am</td>
<td>Breakfast</td>
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| 7:30am-9:35am | **Rhoton Room: Dissection Demonstration – Sellar Approach** – Moderators: Brian David Thorp & Juan C. Fernandez-Miranda
Brian David Thorp, Deanna Sasaki-Adams, Raj Sindwani, Pablo F. Recinos, Raj Sindwani, Maria Pieris Celda, Eric W. Wang, Paul A. Gardner
San Juan
| 7:30am-8:30am | **Main Topics**                                                        |                   |
|               | **Main Topic 6: Highlights from AN Day** – Moderators: Marc Schwartz & Moises Arriaga
Moises Arriaga, Brad Welling, Benedict J Panizza, John Golfinos, Ted McRackan, Marc Schwartz
San Xavier
|               | **Main Topic 7: Spontaneous CSF Leak: Short and Long Term Management** – Moderators: Mark Tabor & Bradford Alan Woodworth
Bradford Alan Woodworth, Seilesh Babu, Matthew Luke Carlson, Zoukaa Sargi, Garret W Choby
San Miguel
|               | **Main Topic 8: Skull Base Surgery Complications** – Moderators: Andrew P. Carlson & A. Samy Youssef
A. Samy Youssef, Vijay Agarwal, Alexandre Felippu, Gabriel Zada, Marc A. Tewfik
San Gabriel
|               | **Main Topic 9: Skull Base Syndromes You Should Know** – Moderators: Tarek A Rayan & Azam Syed Ahmed
Tarek A Rayan, Gregory J Basura, Colin L. W. Driscoll, William Couldwell, Wenya Linda Bi
San Augustine
|               | **Main Topic 10: Parasellar Nonpituitary Surgery** – Moderators: Leo Ditzel & Kaisorn Chaichana
Leo Ditzel, Daniel F. Kelly, Michael Kohanski, Luma Chalib, Jeremy N Ciporen
San Felipe
|               | **Expert Debates**                                                     |                   |
|               | **Expert Debate 6: Treatment of Slow Growing Asymptomatic Ans** – Moderators: Neal M Jackson & Peter Morone
Peter Morone, Neal M Jackson, Marcos Tatakiba, Oliver F Adunka, Jennifer A Moliterno Gunel, Mustafa Baskaya
San Xavier
|               | **Expert Debate 7: Medical Advances in Skull Base Tumor Management: Current and Future** – Moderators: Shirley Y. Su & Gelareh Zadeh
Shirley Y. Su, Gelareh Zadeh, Ian F. Dunn, Konstantina Stankovic, Diana Bell, Waleed Abuzeid
San Miguel
|               | **Expert Debate 8: Running Multiple Rooms: Is It Legal? Is It Ethical?** – Moderators: Daniel F. Kelly
Daniel F. Kelly, Kibwe A McKinney, Nelson M Oyesiku, Jamie Joseph Van Gompel, Christopher H. Rassekh
San Gabriel
|               | **Expert Debate 9: Endovascular or Open Treatment of AVMs and Aneurysms** – Moderators: Bob S. Carter & Jacques J. Marcos
San Augustine
Pete Batra, Zoukaa Sargi, Jeffrey M Blumberg, Kyle K VanKoevering, Vijay Agarwal, Stephen Y Kang
San Felipe
| 9:35am-10:05am | Break with Exhibitors                                                 |                   |
| 10:05am-12:20 | **General Session**                                                   | La Cantera Ballroom
« **Keynote Speaker**
Ricardo Carrau, Ivo Janecka, Adam Mikial Zanation, Daniel M. Prevedello, Jeffrey M. Sorenson, John Golfinos, Hugh Curtin, Amin B Kassam
| 12:20pm-1:00pm | Lunch in Exhibit Hall                                                | San Juan
| 1:20pm-3:25pm | **Rhoton Room: Dissection Demonstration – Infratemporal Fossa** – Moderators: Arjun Parasher & Marc Rosen
Carlos Pinheiro-Neto, Ivan El-Sayed, Clementino Arturo Solares, Alejandro Monroy-Sosa, Amin B Kassam
San Juan
| 1:20pm - 2:20pm | **Hot Topics & Special Session**                                     |                   |
|               | **Hot Topic 5: Jugular Foramen Tumors** – Moderators: Giovanni Danesi & James K. Liu
James K. Liu, Joseph Paul Roche, Matthew Luke Carlson, Chad A. Glenn, Deanna Sasaki-Adams
San Xavier
|               | **Hot Topic 6: Imaging Advances in Skull Base Pathologies** – Moderators: Benjamin Y Huang & Hugh Curtin
Benjamin Y Huang, Theodore H. Schwartz, Alfred Marc Cala Illoreta
San Miguel
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<td><strong>Special Session 1: Leadership and Development in Skull Base Surgery</strong></td>
<td>Moderator: Raewyn G Campbell, Marilene Beth Wang, Carolyn Quinsey, Stacey Gray, Yvonne Chan, Carl Snyderman, Stella Lee, Jennifer Strahle, Corinna Levine</td>
<td>San Gabriel</td>
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<td><strong>Competition Time</strong> – Moderator: Jacques J. Morcos</td>
<td>NYU Team vs. Quaker Skull Base Possee</td>
<td>Palo Duro</td>
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<td><strong>Video Sessions &amp; Special Session</strong></td>
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<td><strong>Special Session 2: NexGen Imaging Modalities in Skull Base Pathologies</strong> – Moderators: Lola B. Chambless &amp; Michael Chicoine</td>
<td>Michael Chicoine, Eugene Yu, John Y.K. Lee, Joshua Bederson, Anthony G. Del Signore, Joshua Palmer, Jeffrey T. Jacob, Claudia F.E. Kirsch</td>
<td>San Gabriel</td>
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<td><strong>3:30pm-4:00pm</strong> Break with Exhibitors</td>
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<td><strong>4:00pm-6:00pm</strong> Rhoton Room: Dissection Demonstration - Orbitozygomatic Craniotomy – Moderators: Deanna Sasaki-Adams &amp; Silvio Agazzi</td>
<td>Kaan Yagmurlu, Ossama Al-Mefty, Michael Lawton</td>
<td>San Juan</td>
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<td><strong>4:00pm-5:00pm</strong> Proffered Papers &amp; Special Session</td>
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<td><strong>Proffered Papers 9: Meningioma 1</strong> – Moderators: Georgios A Zenonos &amp; Jacques J. Morcos</td>
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<td>San Xavier</td>
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**Proffered Papers**

- **065: GLYCEROL RHIZOTOMY FOR THE MANAGEMENT OF TUMOR ASSOCIATED TRIGEMINAL NEURALGIA** - Christina Jackson, MD, Jennifer Franke, BS, Michael Lim, MD, Johns Hopkins School of Medicine
- **066: ADJUVANT RADIOtherapy IN SKull BASE-LOCATED GRADE II, ATypical MENINGIOMA** - David P Bray, MD, Bryan Buster, MD, MPH, Joseph W Quillin, MD, Robert H Press, MD, Bree R Eaton, MD, Jeffrey J Olson, Department of Neurosurgery, Emory University Medical Center, Department of Radiation Oncology, Emory University Medical Center
- **067: IMAGING-BASED SCORE FOR PREDICTING HIGHER GRADE MENINGIOMAS** - Yaroslav Gelfand, MD, Abigail Funari, BS, Michael Longo, BA, Samuel Ahmad, BA, Sadiq Rahman, BA, Vijay Agarwal, MD, Albert Einstein College of Medicine, Montefiore Medical Center
- **068: INHIBITION OF PDGFR MAY BE A VIABLE TREATMENT OPTION FOR MENINGIOMAS** - Tadeusz Wroblewski, Philip D Tatman, Anthony Fringuello, William Foreman, Samuel Scherer, Denise Damek, MD, Kevin Lillehei, MD, Randy Jensen, MD, PhD, David Ormond, MD, Michael Graner, PhD, University of Colorado, University of Utah
- **271: SURGICAL MANAGEMENT OF PETROCLIVAL MENINGIOMAS BASED ON A RADIOGRAPHIC CLASSIFICATION WITH UPDATED FOLLOW-UP** - Zhen Wu, Da Li, Jun-Ting Zhang, Beijing Tiantan Hospital, Capital Medical University
- **070: CLINICAL FRAILTY IS AN IMPORTANT PREDICTOR OF FUNCTIONAL OUTCOME FOLLOWING SURGICAL RESECTION IN PATIENTS WITH HIGH GRADE MENINGIOMAS** - Jianning Shao, BA, Pranay Soni, MD, Arbaz Momin, BS, Diana Lopez, BA, Konrad K Knusel, BS, Patrick J Elsworth, BA, Varun Kshettry, MD, Pablo F Recinos, MD, Cleveland Clinic Lerner College of Medicine at Case Western Reserve University, Department of Neurosurgery, Cleveland Clinic, Case Western Reserve University School of Medicine, Cleveland Clinic, Section Head – Skull Base Surgery, Department of Neurosurgery, Cleveland Clinic
- **071: EXTENT OF RESECTION AND SURVIVAL OUTCOMES IN WORLD HEALTH ORGANIZATION GRADE II AND III MENINGIOMAS** - Pranay Soni, MD, Jianning Shao, BA, Arbaz Momin, BS, Diana Lopez, BA, Konrad K Knusel, BA, Patrick J Elsworth, BS, Varun R Kshettry, MD, Pablo F Recinos, MD, Cleveland Clinic
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<th>Proffered Papers 10: Schwannomas 1 – Moderators: Oliver F Adunaka &amp; Marcos Tatagiba</th>
<th>San Miguel</th>
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<td><strong>072:</strong> DELAYED OTOLGIC COMPLICATIONS FOLLOWING THE TRANSLABYRINTHINE APPROACH FOR ACOUSTIC NEUROMA RESECTION - John P Leonetti, MD, Michael Hutz, MD, Sam Marzo, MD, Matthew Kircher, MD, Dennis Moore, MD, Douglas Anderson, MD, Loyola</td>
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<td><strong>073:</strong> INCIDENCE OF IATROGENIC INNER EAR BREACHES FROM VESTIBULAR SCHWANNOMA SURGERY: A REVIEW OF 1153 HEARING PRESERVATION APPROACHES - Nir Ben-Shlomo, A Rahimi, AM Abunimeh, JP Guenet, MD, A Juliano, MD, J Jayender, PhD, CE Corrales, MD, Brigham and Women's Hospital, 2Harvard Medical School, 3Massachusetts Eye and Ear Infirmary</td>
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<td><strong>074:</strong> FACIAL NERVE FUNCTION AND RISK FACTORS IN RESECTION OF LARGE CYSTIC VESTIBULAR SCHWANNOMAS - Daniela Stastna, Richard Mannion, Patrick Axon, Neil Donnelly, James Tysome, Mahonar Bance, David Moffat, David Hardy, Robert Macfarlane; Addenbrooke's Hospital, Cambridge University NHS Foundation Trust, Cambridge, UK</td>
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<td><strong>075:</strong> SURGERY VERSUS RADIO SURGERY FOR FACIAL NERVE SCHWANOMA: SYSTEMATIC REVIEW AND META-ANALYSIS OF FACIAL NERVE FUNCTION - Juliana Rotter, MD, Victor M Lu, MBBS, PhD, Avital Perry, MD, Christopher S Graffeo, MD, MS, Matthew L Carlson, MD, Colin L Driscoll, MD, Michael J Link, MD; Mayo Clinic</td>
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<td><strong>076:</strong> SAFETY AND EFFICACY OF POSTOPERATIVE ANTI COAGULATION FOR DEEP VEIN THROMBOSIS PROPHYLAXIS IN VESTIBULAR SCHWANNOMA MICRO SURGICAL RESECTION - Malika Bharqeya, MD, Komal Naem, MD, Randall W Porter, MD; Barrow Neurological Institute</td>
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<td><strong>077:</strong> EVIDENCE FOR A BIOLOGICAL SHIFT BEHIND THE INCREASING INCIDENCE OF SPORADIC VESTIBULAR SCHWANNOMA - John P Marinelli, MD, Matthew L Carlson, MD; Department of Otolaryngology-Head and Neck Surgery, San Antonio Military Medical Center, San Antonio, TX, 2Departments of Otolaryngology-Head and Neck Surgery and Neurologic Surgery, Mayo Clinic, Rochester, MN</td>
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<td><strong>078:</strong> LOCAL CONTROL AND RADIOLOGIC RESPONSE AS A FUNCTION OF ISODOSE ADJUSTMENT IN STEREOTACTIC RADIOSURGERY TREATMENT FOR SPORADIC VESTIBULAR SCHWANNOMA - Avital Perry, MD, Achiraya Teayateeti, MD, Christopher S Graffeo, MD, Paul D Brown, MD, Bruce E Pollock, MD, Michael J Link; Mayo Clinic</td>
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<td><strong>079:</strong> ANTI-COAGULATION FOR CEREBRAL VENOUS SINUS THROMBOSIS AFTER POSTERIOR FOSSA SCHWANNOMA SURGERY: WORTH THE RISK? - Christina Jackson, MD, Payan Shah, BS, Laura Saleh, BS, Gary Gallia, MD, PhD, Chetan Bettegowda, MD, PhD, Jon Weingart, MD, Henry Brem, MD, Rafael Tamargo, MD, Michael Lim, MD; Johns Hopkins School of Medicine</td>
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<th>Proffered Papers 11: Pediatric 1 – Moderators: Patrick C Walz &amp; Alaa Montaser</th>
<th>San Gabriel</th>
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<td><strong>080:</strong> COMPREHENSIVE APPROACH TO TREATMENT OF PEDIATRIC SKULL BASE LESIONS: A CASE SERIES - Craig Miller, MD, Alizna Weber, BA, Kate Carroll, MD, Neeraja Konuthula, MD, Abdullah Feroze, Jacob Ruzevick, MD, Manuel Ferreira, MD, Kris S Moe, MD, Randall A Bly, MD; University of Washington</td>
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<td><strong>081:</strong> RECONSTRUCTION OF PEDIATRIC SKULL BASE DEFECTS: A RETROSPECTIVE ANALYSIS EMPHASIZING THE VERY YOUNG - Nyall London, MD, PhD, Gustavo G Rangel, Amanda Onwuka, Ricardo L Carrau, Daniel Prevedello, Jeffrey Leonard, Patrick Walz, Johns Hopkins University/NIDOCD, The Ohio State University, Nationwide Children’s</td>
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<td><strong>082:</strong> EFFECTS OF PREOPERATIVE VASCULAR EMBOLIZATION ON JUVENILE NASOPHARYNGEAL ANGIOFIBROMA SURGICAL OUTCOMES: A STUDY OF THE KIDS’ INPATIENT DATABASE - Jonathan Choi, MD, Justin Yu, BS, Benjamin Lovin, MD, K. Kelly Gallagher, MD; Baylor College of Medicine</td>
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<td><strong>083:</strong> PEDIATRIC TRAUMA PATIENTS WITH TEMPORAL BONE FRACTURES ARE AT RISK FOR MULTIPLE CRANIAL CT SCANS - Joshua Ewy, BS, Martin Piazza, MD, Brian Thorp, MD, Michael Phillips, MD, Carolyn Quinsey, MD; UNC School of Medicine</td>
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<td><strong>084:</strong> SIMULATION OF PEDIATRIC ANTERIOR SKULL BASE ANATOMY USING A 3-D PRINTED MODEL - Nyall London, MD, PhD, Gustavo G Rangel, Kyle VanKoeveering, Ashley Zhang, Allison Powell, Daniel Prevedello, Ricardo L Carrau, Patrick Walz, Johns Hopkins University/NIDOCD, The Ohio State University, Nationwide Children’s</td>
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<td><strong>085:</strong> MULTI-INSTITUTIONAL EXPERIENCE WITH PEDIATRIC OLFACTORY NEUROBLASTOMA - Na-deem R Kolia, MD, Shirley Y Su, MBBS, Ehab Y Hanna, MD, Uma S Ramaswamy, MD, Eric W Wang, Paul A Gardner, MD, Carl H Snyderman, MD, MBA; University of Pittsburgh Medical Center, The University of Texas MD Anderson Cancer Center, Texas Children’s Hospital</td>
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<td><strong>086:</strong> PEDIATRIC PITUITARY SURGERY: CLAIMS-BASED ANALYSIS OF PRACTICE PATTERNS AND CLINICAL OUTCOMES - Vijay A Patel, MD, Eric W Schaefer, MS, Brad E Zacharia, MD, MS, Neerav Goyal, MD, MPH, Chan Shen, PhD, Meghan N Wilson, MD; Penn State Health Milton S. Hershey Medical Center</td>
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<td><strong>087:</strong> APPLICATIONS OF THE ENDOSCOPIC ENDONASAL APPROACH IN EARLY CHILDHOOD - Michael M McDowell, Georgios Zenonos, MD, Eric Wang, MD, Carl Snyderman, MD, MBA, Elizabeth Tyler-Kabara, MD, PhD, Paul A Gardner, MD, UPDC</td>
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Proffered Papers 12: Radiosurgery – Moderators: Joshua Palmer & Dukagjin M Blakaj

088: RISK OF INTERNAL CAROTID ARTERY STENOSIS OR OCCLUSION AFTER SINGLE-FRACTION RADIOSURGERY OF BENIGN PARASELLAR TUMORS - Christopher S Graffeo, MD, Michael J Link, MD, Scott L Stafford, MD, Ian F Parney, MD, PhD, Robert L Foote, MD, Bruce E Pollock, MD; Mayo Clinic

089: BIOLOGICAL EFFECTIVE DOSE AS A PREDICTOR OF HYPOPITUITARISM AFTER SINGLE-FRACTION PITUITARY ADENOMA RADIATURE: DOSEMERIC ANALYSIS COHORT STUDY OF PATIENTS TREATED USING CONTEMPORARY TECHNIQUES - Christopher S Graffeo, MD, Avital Perry, MD, Michael J Link, MD, Paul D Brown, MD, William F Young, MD, Bruce E Pollock, MD; Mayo Clinic

090: COMPLICATIONS AFTER PROTON BEAM THERAPY TO SKULL BASE TUMORS – FINAL RESULTS OF A CASE SERIES - Gustavo C Rangel, MD, Thiago A Felicio, MD, Mostafa Shahein, MD, Mauricio Gamez, MD, Dukagjin Blakaj, Daniel Prevedello, MD, Ricardo Carrau, MD; Nationwide Children’s Hospital - OSU, ‘Ohio State University

091: A PHASE I/II CLINICAL TRIAL OF PROTON THERAPY FOR CHORDOMAS AND CHONDROSARCOMAS - Alexandra D Dreyfuss, BSE; Michael J LaRiviere, MD, MSc, Jahan J Mohiuddin, MD, Brian C Baumann, MD, David M Miller, BA, Susan Mazzoni, MS, Robert A Lustig, MD, Jay F Dorsey, MD, PhD, Alexander Lin, MD, Sean M Grady, MD, Bert W O’Malley, MD, John Y Lee, MD, Jason G Newman, MD, James M Schuster, MD, Michelle Alonso-Basanta, MD, PhD; Department of Radiation Oncology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA 19104, Department of Radiation Oncology, Washington University School of Medicine, St. Louis, MO 63110, Department of Neurosurgery, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA 19104, Department of Neurosurgery, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA 19104

092: OUTCOMES WITH IMRT VERSUS SRS SALVAGE RADIOTHERAPY FOR RECURRENT HIGH GRADE MENINGIOMA - Arbaz Momin, BS, Pranay Soni, MD, Jianing Shao, BA, Diana Lopez, BS, Patrick Elsworth, BS, Konrad Knusel, BA, Pablo F Recinos, MD, Varun R Kshettry, MD; Lerner College of Medicine, Cleveland Clinic, Cleveland, OH, USA, Department of Neurosurgery, Cleveland Clinic, Cleveland, OH, USA, Case Western Reserve School of Medicine, Cleveland, OH, USA, ‘Rose Ella Burbkhardt Brain Tumor & Neuro-Oncology Center, Cleveland Clinic, Cleveland, OH, USA

093: A MULTIDISCIPLINARY CENTRAL NERVOUS SYSTEM CLINIC MODEL FOR RADIATION ONCOLOGY AND NEUROSURGERY (RADISANS): THREE-YEAR EXPERIENCE WITH BRAIN AND SKULL BASE LESIONS IN A COMMUNITY HOSPITAL SETTING - Wencesley Paez, MD, Rohi Cheewala, BS, Shearwood McClelland, III, MD, Jerry J Jaboin, MD, PhD, Charles R Thomas Jr., MD, Timur Mitin, MD, PhD, Jeremy N Ciporen, MD; Department of Radiation Medicine, Oregon Health and Science University, Department of Neurosurgery, Oregon Health and Science University, Department of Radiation Oncology, Indiana University School of Medicine, University of North Carolina

094: FUNDAL FLUID CAP IS ASSOCIATED WITH SHORT TERM HEARING PRESERVATION IN THE RADIOSURGICAL TREATMENT OF VESTIBULAR SCHWANNOMA - Dennis Bojrab II, Michigan Ear Institute


096: BIOMETRIC ANALYSIS OF SIMULATION OF SYLVIAN FISSURE DISSECTION AND CEREBROVASCULAR Bypass UNDER SUBARACHNOID HEMORRHAGE CONDITIONS - Avital Perry, MD, Christopher Graffeo, MD, Lucas P Carlstrom, MD, William J Anding, Kenton Kaufman, PhD, Michael J Link, MD, MD; Mayo Clinic

097: NETWORK ANALYSIS OF NASBS MEMBERSHIP - John Luebs, MD, Carl Snyderman, MD; SUNY Downstate Health Sciences University, University of Pittsburgh

098: ENDOSCOPIC SKULL BASE AND ADVANCED RHINOLGY TRAINING IN NEURO-RHINOLOGY FELLOWSHIPS: STANDARDIZATION AND CASE CLASSIFICATION OF OPERATIVE VOLUME - Satyan Breenath, MD, Mark Gelpi, MD, Brian D Thorp, MD, Adam J Kimpke, MD, Adam M Zanation, MD; University of North Carolina

099: NETWORK ANALYSIS OF PAST NASBS PRESIDENTS - John Luebs, MD, Carl Snyderman, MD; SUNY Downstate Health Sciences University, University of Pittsburgh

100: INTRAOPERATIVE PROTOCOL FOR THE MANAGEMENT OF CAROTID ARTERY INJURY DURING ENDOSCOPIC ENDONASAL SURGERY - Zachary Kassir, MD, Carl H Snyderman, MD, MBA, Paul A Gardner, MD, Eric W Wang, MD, Georgios A Zenonos, MD; University of Pittsburgh School of Medicine, UPMC Center for Cranial Base Surgery

102: A MODEL IS WORTH 1,000 PICTURES: APPLICATIONS OF 3D-MODELING IN SKULL BASE SURGERY NEUROANATOMY EDUCATION - Christopher S Graffeo, MD, MS, Avital Perry, MD, Lucas P Carlstrom, MD, PhD, Michael J Link, MD, Jonathan Morris, MD; Mayo Clinic

103: 3D TRACTOGRAPHY IN SKULL BASE SURGERY: TECHNOLOGICAL ADVANCES AND FEASIBILITY-INITIAL EXPERIENCE - Srikant S Chakravarthi, MD, MSc, Melanie B Fukui, MD, Alejandro Monroy-Sosa, MD, Jonathan E Jennings, MD, Austin Epping, BSc, Sammy Khalili, MD, Lior Gonen, MD, Juanita M Celix, MD, Bhavani Kura, MD, Nathaniel Kojs, MBA, Richard A Rovin, MD, Amin K Bassam, MD; Aurora Neuroscience Innovation Institute
Proffered Papers 14: Meningiomas 2 – Moderators: Douglas A Hardesty & Maurizio Iacoangeli

104: WHO GRADE III MENINGIOMAS: DE NOVO TUMORS SHOW IMPROVED PROGRESSION FREE SURVIVAL COMPARED TO SECONDARY PROGRESSIVE TUMORS - Jacob Ruzevick, MD, Sam Emerson, MD, PhD, Kate Carroll, MD, Manuel Ferreira Jr, MD, PhD; University of Washington

105: ROMIDEPSIN IS A POSSIBLE TREATMENT FOR MENINGIOMAS THROUGH DUAL INHIBITION OF CLASS I AND 2 HDACs. - Philip D Tatman, Anthony Fringuelli, William Foreman, Samuel Scherer, Tadeusz Wroblewski, Randy Jensen, MD, PhD, Denise Damen, MD, Kevin Lillehei, MD, David Ormond, MD, Michael Graner, PhD; 1University of Colorado, 2University of Utah

106: THE SIMPSON GRADING SCALE CONTINUES TO HOLD STRONG PROGNOSTIC VALUE IN MODERN MENINGIOMA SURGERY: 10-YEAR SINGLE INSTITUTION EXPERIENCE - Colin J Przybylewski, MD, Benjamin Hendricks, MD, XiaoChun Zhao, MD, Claudio Cavallo, MD, Leandro Borba Moreira, MD, ein Gandhi, MD, Nader Sanai, MD, Khait K Almefty, MD, Andrew S Little, MD; Barrow Neurological Institute

107: INCIDENCE OF SURGERY AFTER GAMMA KNIFE RADIOSURGERY FOR PARASAGITTAL MENINGIOMAS IS HIGHER THAN MENINGIOMAS IN OTHER LOCATIONS: A 10-YEAR REVIEW. - Andrew J Montoure, MD, Jennifer Connelly, MD, Joseph Bovi, MD, Nathan Zwagerman, MD; Medical College of Wisconsin

108: BRACHYTHERAPY WITH SURGICAL RESECTION AS SALVAGE TREATMENT FOR RECURRENT HIGH-GRADE MENINGIOMAS: A MATCHED COHORT STUDY - Michael A Mooney, MD 1, Wenya L Bi, MD, PhD, Jonathan Cantalino, MD, Kyle Wu, MD, Thomas Harris, PhD, Lucas Possatti, Parikshat Juvekar, Lianne Hsu, MD, Ian F Dunn, MD, Ossama Al-Mefty, MD, Philip M Devlin, MD; 1Barrow Neurological Institute, 2Brigham and Women’s Hospital

109: THE IMPACT OF PATIENT FRAILTY ON HOSPITAL STAY AND DISCHARGE DISPOSITION FOLLOWING SURGICAL RESECTION IN PATIENTS WITH HIGH GRADE MENINGIOMAS - Jianning Shao, BA, Arbaz Momir, BS, Pranay Soni, MD, Diana Lopez, BA, Konrad K Knusel, BA, Patrick J Elsworth, BS, Varun R Kshetry, MD, Pablo F Recinos, MD; Cleveland Clinic Lerner College of Medicine at Case Western Reserve University, 2Department of Neurosurgery, Cleveland Clinic, 3Case Western Reserve University School of Medicine, 4Section Head--Skull Base Surgery, Department of Neurosurgery, Cleveland Clinic

110: ADJUVANT RADIATION DOES NOT DECREASE THE RISK OF SHORT-TERM TUMOR RECURRANCE IN PATIENTS WITH ATYPICAL MENINGIOMA - Jacob Ruzevick, MD, Timothy Woodwiss, MD, Sam Emerson, MD, PhD, Kate Carroll, MD, Jason Rockhill, MD, PhD, Patrick Civino, MD, PhD, Luis Gonzalez-Cuyar, Laligam Sekhar, MD, Manuel Ferreira Jr., MD, PhD; University of Washington

111: PRE-OPERATIVE CRANIAL NERVE DEFICITS AS CRUCIAL OUTCOME PREDICTOR FOR SKULL BASE MENINGIOMAS - Sebastian Liao, MD, Shao-Ching Chen, MD, Sanford Hsu, MD; 1Taiichung Veterans General Hospital, 2Taipei Veterans General Hospital

112: THE SOUND OF HAPPINESS: HEARING-RELATED QUALITY-OF-LIFE AND PATIENT SATISFACTION WITH MANAGEMENT DECISION-MAKING IN VESTIBULAR SCHWANNOMA - Lucas P Carlstrom, MD, PhD, Maria Peris Celda, MD, PhD, Avital Perry, MD, Christopher S Graffeo, MD, Geoffen Klein-Bell, Matthew L Carlson, MD, Michael J Link, MD; Mayo Clinic, 2Albany Med, 3Department of Otolaryngology-Head and Neck Surgery, Mayo Clinic, Rochester, MN, 4Acoustic Neuroma Association Patient Registry

113: INTERNAL AUDITORY CANAL VARIABILITY AND FACIAL NERVE OUTCOME AFTER TRANSLABYRINTHINE RESECTION OF VESTIBULAR SCHWANNOMAS - Michael A Cohen, MD, Forrest Hammrick, BS, Austin S Gamblin, BS, Michael Karsky, MD, PhD, Richard Gurgel, MD, Clough Shelton, MD, William T Couldwell, MD, PhD; University of Utah

114: COCHLEAR FIESTA SIGNAL INTENSITY PREDICTS HEARING OUTCOMES AFTER MIDDLE FOSSA RESECTION OF ACOUSTIC NEUROMA - Kareem O Tawfik, MD, Marin McDonald, MD, Yin Ren, MD, PhD, Omrid Moshtagh, MD, Marc S Schwartz, MD, Rick A Friedman, MD, PhD; University of California San Diego

115: EVOLUTION IN MANAGEMENT TRENDS OF SPORADIC VESTIBULAR SCHWANNOMA FROM 1970 THROUGH 2019 USING THE ACOUSTIC NEUROMA ASSOCIATION PATIENT REGISTRY - Stephen A Chan, MD, John P Marinelli, MD, Debbie L Hahs-Vaughn, PhD, Michael J Link, MD, Alison Feldman, MPA, Chad Nye, PhD, Matthew L Carlson, MD; Department of Otolaryngology-Head and Neck Surgery, Mayo Clinic, MN, 2Department of Learning Sciences and Educational Research, University of Central Florida, Orlando, FL, 3Departments of Neurologic Surgery and Otolaryngology-Head and Neck Surgery, Mayo Clinic, Rochester, MN, 4Acoustic Neuroma Association, Cumming, GA

116: SET YOUR PHASERS TO KILL: OUTCOMES AFTER HIGH-ROSE STEREOTACTIC RADIOSURGERY FOR VESTIBULAR SCHWANNOMA - Lucas P Carlstrom, MD, PhD, Avital Perry, MD, Christopher S Graffeo, MD, Bruce E Pollock, MD, Michael J Link, MD; Mayo Clinic

117: CEREBROSPINAL FLUID LEAK FOLLOWING VESTIBULAR SCHWANNOMA SURGERY - FACTORS THAT IMPACT OUTCOMES - Anne M Selleck, MD, Sarah Hodge, Kevin Brown; UNC

118: BLOOD-LABYRINTHINE BARRIER PERMEABILITY ASSESSED USING POST-CONTRAST DELAYED 3D-FLAIR MRI IMAGING IN VESTIBULAR SCHWANNOMA - Andrew J Bowden, MD, MS, Michael L Carlson, MD, John I Lane, MD; Mayo Clinic Department of Otorhinolaryngology

Proffered Papers 15: Schwannomas 2 – Moderators: Mustafa Baskaya & Byron Gregory Thompson

119: WHO GRADE III MENINGIOMAS: DE NOVO TUMORS SHOW IMPROVED PROGRESSION FREE SURVIVAL COMPARED TO SECONDARY PROGRESSIVE TUMORS - Jacob Ruzevick, MD, Sam Emerson, MD, PhD, Kate Carroll, MD, Manuel Ferreira Jr, MD, PhD; University of Washington
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<th>Proferred Papers 16: Quality of Life</th>
<th>Moderators: Alexander A. Farag &amp; Ahmed Mohyeldin</th>
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<td><strong>120: EMOTIONAL LABILITY AS A SYMPTOM OF EXTRA-AXIAL POSTERIOR FOSSA TUMOURS: A CASE-CONTROL REVIEW OF NEUROANATOMY AND PATIENT-REPORTED QUALITY OF LIFE</strong> - <strong>Swetha Prakash,</strong> Ryozo Akagami, MD, BSc, MHSc, FRCS; University of British Columbia</td>
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<td><strong>121: VALIDATION OF THE SKULL BASE INVENTORY QUALITY OF LIFE QUESTIONNAIRE IN A MULTI-INSTITUTIONAL PROSPECTIVE COHORT STUDY OF PATIENTS UNDERGOING OPEN AND ENDOSCOPIC SKULL BASE SURGERY</strong> - <strong>David Forner, MD</strong>, Katrina Hueniken, MPH, Tom Yoannidis, Ian Witterick, MD, MSc, FRCS, Eric Monteiro, MD, MSc, FRCS, Allan Vescan, MD, MSc, FRCS, Gelareh Zadeh, MD, PhD, FRCS, Patrick Gullane, MB, FRCS, FACS, FRACS, Carl Snyderman, MD, MBA, Eric Wang, MD, Paul Gardner, MD, Benita Valappil, MPH, Dan Fliss, MD, Barak Ringel, MD, Ziv Gil, MD, PhD, Shorook Na’ara, MD, Nidal Muhanna, MD, PhD, Eng Ooi, MBBS, PhD, FRACS, David Goldstein, MD, MSc, FRCS, Fred Gentili, MD, John de Almeida, MD, MSc, FRCS, Otolaryngology -- Head &amp; Neck Surgery, University Health Network, Otolaryngology -- Head &amp; Neck Surgery, Sinai Health System, Neurosurgery, University Health Network, Neurosurgery, University of Pittsburgh Medical Center, University of Pittsburgh Medical Center, Otolaryngology -- Head &amp; Neck Surgery, Tel-Aviv Sourasky Medical Center, Otolaryngology -- Head &amp; Neck Surgery, Rambam Medical Center, Otolaryngology -- Head &amp; Neck Surgery, Flinders Medical Centre</td>
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<td><strong>122: ASSESSMENT OF PSYCHOLOGICAL WELL-BEING IN NASOPHARYNGEAL CARCINOMA SURVIVORS</strong> - <strong>Kira A Murphy, MD</strong>, Chandala Chitguppi, MD, Alexander Graf, BS, Tawfiq Khoury, MD, James J Evans, MD, Marc R Rosen, MD, Gurston G Nyquist, MD, Mindy Rabinowitz, MD, Department of Otolaryngology – Head and Neck Surgery, Thomas Jefferson University Hospital, Thomas Jefferson University Hospital</td>
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<td><strong>123: SINONASAL OUTCOMES AFTER PITUITARY SURGERY IN PATIENTS WITH CUSHING’S DISEASE</strong> - <strong>Nadeem R Kolia, MD</strong>, Paul A Gardner, MD, Carl H Snyderman, MD, MBA, Eric W Wang, MD, University of Pittsburgh Medical Center</td>
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<td><strong>124: QUALITY FROM THE PATIENT’S PERSPECTIVE: IMPLEMENTATION OF AN ESTABLISHED PATIENT REPORTED OUTCOME PLATFORM IN A MULTIDISCIPLINARY SKULL BASE TUMOR CLINIC</strong> - <strong>Stephanie Flukes, MD</strong>, Jennifer Cracchiolo, MD, Eliza Geer, MD, David Goldstein, MD, John de Almeida, MD, Vivian Tabar, MD, Marc A Cohen, MD, Multidisciplinary Pituitary and Skull Base Program, Memorial Sloan Kettering Cancer Center, Department of Otolaryngology Head &amp; Neck Surgery, Prince Margaret Cancer Centre</td>
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<td><strong>125: COMPARING SINONASAL OUTCOMES BETWEEN FUNCTIONAL AND NON-FUNCTIONAL PITUITARY LESIONS AFTER ENDOSCOPIC SELLAR AND PARASELLAR SURGERY</strong> - Yossawee Wangworawut, MD, Kawinyarat Jitaroon, MD, Peter H Hwang, Jayakar Y Nayak, MD, PhD, Juan Fernandez-Miranda, Robert Dodd, MD, PhD, Zara M Patel, MD, Stanford University</td>
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<td><strong>126: INTERNAL NEUROLYSIS FOR THE TREATMENT OF TRIGEMINAL NEURALGIA: SYSTEMATIC REVIEW</strong> - Victor Sabourin, Jacob Mazza, Jeffery Head, Pascal Lavergne, Tomas Garzon, Anthony Stefanelli, Fadi Al-Saiegh, James Evans, Thomas Jefferson University Hospital</td>
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<td><strong>127: ERGONOMICS IN ENDOSCOPIC TRANS-SPHENOIDAL SURGERY: A SURVEY OF THE NORTH AMERICAN SKULL BASE SOCIETY</strong> - <strong>Piero Paolo Matta,</strong> Davide Mattavelli, MD, Filippo Marciano, PhD, Alberto Schreiber, Paola Cotta, PhD, Piero Nicolai, Edward R Laws, Jr., Ian Witterick, Shaan M Raza, Anand K Devaiah, Liverana Laurotti, Alessandro Olivi, Marco M Fontanella, Fred Gentili, Francesco Dodiello, Neurosurgery, Agostino Gemelli Foundation, Rome, Italy, Department of Medical and Surgical Specialties, Radiological Sciences and Public Health, University of Brescia, Brescia, Italy, Department of Mechanical and Industrial Engineering, University of Brescia, Brescia, Italy, Pituitary and Neuroendocrine Center, Department of Neurosurgery, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts, USA, Department of Otolaryngology-Head and Neck Surgery, University of Toronto, Toronto, Ontario, Canada, Department of Neurosurgery, The University of Texas MD Anderson Cancer Center, Houston, Texas, Department of Otolaryngology-Head and Neck Surgery, Boston University School of Medicine, Boston Medical Center, Boston, Massachusetts, United States, Neurosurgery, Department of Medical and Surgical Specialties, Radiological Sciences and Public Health, University of Brescia, Brescia, Italy, Department of Neurosurgery, Toronto Western Hospital, University of Toronto, Toronto, Ontario, Canada</td>
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### Proferred Papers 17: Malignancies 2 – Moderators: Matthew Owen Old & Ivan El-Sayed

128: STENTING FOR PREVENTION OF CAROTID BLOWOUT SYNDROME IN HIGH RISK HEAD AND NECK CANCER PATIENTS. - Bradley Kolb, MD, Andre Beer-Furlan, MD, PhD, Bledi Brahimaj, MD, Hormuzdiyar Daseinbrock, MD, Samer Al-Khudari, Demetrius Lopes, MD, Michael Chen, MD, R. Webster Crowley, MD; Rush University Medical Center, Advocate Aurora Health

129: SURGICAL OUTCOMES WITH MIDLINE VS. LATERAL APPROACHES FOR SKULL BASE CHORDOMAS: A SYSTEMATIC REVIEW AND META-ANALYSIS - Devi P Patra, MD, Ryan Hess, BSE, Evelyn Turcotte, Matthew Welz, MS, Rudy Rahme, MD, Tanmoy Maiti, MD, Karl Abi-Aad, MD, Ahmed Almekkawi, MD, Sameer Keole, MD, Devyani Lal, MD, Michael Marino, MD, Maciej Mrugala, MD, Alyx Porter, MD, Sujoy Vora, MD, Bernard R Bendok, MD; Mayo Clinic, Phoenix, Arizona

130: COMPUTED TOMOGRAPHY FINDINGS OF BONY ANTERIOR CRANIAL BASE EROSION AS A PREDICTOR OF PATHOLOGIC CRANIAL BASE INVASION IN SINONASAL MALIGNANCIES - Tawfiq Khoury, MD, Aarti Agarwal, MD, Pascal Lavergne, MD, Chandala Chitguppi, MD, James J Evans, MD, Mindy Rabinowitz, MD, Gurston Nyquist, MD, Marc Rosen, MD; Thomas Jefferson University

131: SINONASAL MALIGNANT MELANOMA AND THE ORBIT - Justin N Karlin, MD, MS; Mark Jameson, MD, PhD, Steven A Newman, MD; UCLA US

132: SURVIVAL AND PATTERNS OF RELAPSE OF HEAD AND NECK MALIGNANCIES WITH LARGE NERVE PERINEURAL SPREAD (PNS) AFTER SKULL BASE SURGERY AND POSTOPERATIVE RADIATION THERAPY - Ryan Sommerville, DR, Charles Lin, DR, Papacostas Jason, DR; Royal Brisbane and Women's Hospital

133: HIGH-THROUGHPUT SCREENING OF EPIGENETIC INHIBITORS IN CHORDOMA AND CHONDRO-SARCOMA - William Foreman, Philip D Tatman, Anthony Fringuello, Tadeusz Wroblewski, Samuel Scherer, Randy Jensen, MD, PhD, Kevin Lillehei, MD, Denise Darmek, MD, Michael Graner, PhD; University of Colorado, University of Utah

134: CLINICOPATHOLOGIC ASSOCIATIONS OF PARTIAL-EMT IN SINONASAL SQUAMOUS CELL CARCINOMA - Anuraag S Parikh, Shekhar S Parikh, MD, Eric Barbarite, MD, Stacey T Lin, MD, William C Faquin, MD, PhD, Sidharth V Puram, MD, PhD, Derric T Lin, MD; Massachusetts Eye and Ear, Washington University Department of Otolaryngology

135: EN BLOC MODIFIED SUBTOTAL TEMPORAL BONE RESECTION FOR ADVANCED SQUAMOUS CELL CARCINOMA OF THE TEMPORAL BONE - Noritaka Komune, Satoshi Matsuo, Takashi Nakagawa; Kyushu University Hospital, Clinical Research Institute, National Hospital Organization, Kyushu Medical Center

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<td>6:30pm-7:30pm</td>
<td>New Member Reception</td>
<td>Plaza San Saba</td>
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<td>7:30pm-10:00pm</td>
<td>Main Social Event</td>
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### Sunday, February 9

#### Day 3: Annual Meeting

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<tr>
<td>7:00am-7:30am</td>
<td>Breakfast</td>
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<td>7:30am-9:35am</td>
<td><strong>Rhoton Room: Dissection Demonstration – Lateral Approach</strong> – Moderators: Joseph Paul Roche &amp; Brendan P O’Connell&lt;br volta&gt;Jeffrey M. Sorenson, Oliver F Adunka, Ken Matsushima, L Madison Michael</td>
<td>San Juan</td>
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<td>7:30am-9:35am</td>
<td><strong>Special Session 4: New Technology and Techniques for Skull Base Tumor Removal</strong> – Moderators: Mateus Dal Fabro &amp; Gelareh Zadeh&lt;br volta&gt;Gelareh Zadeh, Raewyn G Campbell, Amin B Kassam, Ivan El-Sayed, Isaac Yang, Amin B Kassam</td>
<td>San Juan</td>
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<td>7:30am-9:35am</td>
<td><strong>Special Session 5: Updates in Management of Functional Pituitary Tumors</strong> – Moderators: Wenxin Shi &amp; Apio Antunes&lt;br volta&gt;Apio Antunes, Luma Ghalib, John Anthony Jane, Stella Lee, Albert Kim, Julie Silverstein</td>
<td>San Miguel</td>
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<tr>
<td>7:00am-9:30am</td>
<td><strong>Proffered Papers and Special Sessions</strong></td>
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<td>136: TAILORING THE SURGICAL CORRIDOR TO THE BASILAR APEX IN THE PRETEMPORAL TRANSCAVERNOUS APPROACH: MORPHOMETRIC ANALYSIS OF DIFFERENT NEUROVASCULAR MOBILIZATION MANEUVERS – Mohamed Labib, X Zhao, DR, Komal Naeem, M Preul, M Lawton; Barrow Neurological Institute</td>
<td>San Augustine A &amp; B</td>
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<td>139: THE UPPER PETROCLIVAL REGION AS SEEN THROUGH DIFFERENT SURGICAL WINDOWS: AN EXTENSIVE ANATOMOSURGICAL STUDY – Michael G Kim, Filippo Veneziani Santonio, Lara Mastino, Lukasz Przepiórka, Philip E Stieg, Alexander I Evins, Antonio Bernardo; Weill Cornell Medicine, Neurological Surgery</td>
<td>San Augustine A &amp; B</td>
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<td>140: FOUNDATIONS OF ADVANCED NEUROANATOMY: TECHNICAL GUIDELINES FOR SPECIMEN PREPARATION, DISSECTION, AND 3D-PHOTODOCUMNTATION IN A SURGICAL ANATOMY LABORATORY – Luciano Cesare Foleon, PhD, Lucas P Carlstrom, MD, PhD, Christopher S Grafeo, MD, PhD, Avital Perry, MD, Carlos Diogenes Pinheiro-Neto, MD, PhD, Jeffrey Sorenson, MD, Michael J Link, MD, Maria Peris-Celda, MD, PhD; Northeast Professor Rhoton Skull Base Dissection Laboratory, Department of Neuroscience and Experimental Therapeutics, Albany Medical Center, Albany, NY, Department of Neurologic Surgery, Mayo Clinic, Rochester, MN, Department of Neurological Surgery, University of Tennessee and Semmes-Murphy Clinic, Memphis, TN</td>
<td>San Augustine A &amp; B</td>
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<td>142: THE LATERAL CRANIOPHARYNGEAL CANAL (STERNBERG’S CANAL) IN PEDIATRIC AND ADULT POPULATIONS – Acedamila Aceppou, MD, Lucas P Carlstrom, MD, PhD, Avital Perry, MD, Carlos D Pinheiro-Neto, MD, PhD, Michael J Link, MD, Maria Peris-Celda, MD, PhD; Department of Neurological Surgery, Albany Medical Center, Department of Neurologic Surgery, Mayo Clinic, Rochester MN, Division of Otolaryngology and Head and Neck Surgery, Department of Surgery, Albany Medical Center</td>
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**Proffered Papers 18: Anatomy**

143: COMPARING THE PTERIONAL, SUPRAORBITAL, SUPRAORBITAL WITH ORBITAL OSTEOTOMY, AND EXTENDED ENDOSCOPIC TRANPLANUM APPROACHES FOR REACHING THE ANTERIOR COMMUNICATING ARTERY COMPLEX: AN ANATOMICAL STUDY – Hongwei Zuy, MD, PhD, Amandeep S Ahluwalia, Abid A Abla, MD, MD, Ivan El-Sayed, MD, Roberto Rodriguez Rubio, MD, Department of Neurological Surgery, The First Affiliated Hospital of Xiamen University, Xiamen, China, Skull Base & Cerebrovascular Laboratory, UCSF, University of Chicago, Department of Neurosurgery, UCSF, Department of Otolaryngology – Head and Neck Surgery, UCSF
Proffered Papers 19: Vascular – Moderators: Deanna Sasaki-Adams & A. Samy Youssef

144: CEREBRAL REVASCULARIZATION FOR ANEURYSM TREATMENT IN THE ERA OF ENDOVASCULAR FLOW DIVERSION - Mohsen Nouri, MD, Julia R Schneider, Kevin Shah, MD, David J Bond, MD, Amir R Dehdashti, MD; Department of Neurosurgery, North Shore University Hospital, Northwell Health, Manhasset, New York.

145: CLINICAL OUTCOMES OF THE SUPERIOR OPHTHALMIC VEIN (SOV) APPROACH FOR CLOSURE OF CAROTID Cavernous Fistulas - Juri R Bilyk, MD, Archana Srinivasan, MD, Ann P Murchison, MD, MPH, Stavroupola I Tjoumakaris, MD, Pascal M Jabbour, MD, Bells Eye Hospital, Thomas Jefferson University Hospital.


147: ANALYSIS OF THE SAFETY AND ADVANTAGE OF LIGATION/TRANSECTION OF THE SUPERIOR Sagittal Sinus at the Level of Crista Galli. - BASAL INTERHEMISPHERIC APPROACH FOR ANTERIOR COMMUNICATING ARTERY ANEURYSMS - Junichi Yamamoto, MD, PhD; Department of Neurosurgery, Albany Medical Center.

148: TRANSETHMOIDAL ENDOANASAL ENDONASAL ANEURYSM CLIPPING - Matthew E Welz, MS, David E Welz, MD, Karl Rabi Aad, Devi P Patra; Mayo Clinic.

8:35am-9:35am

Proffered Papers Sessions

8:35am-9:35am

Proffered Papers 20: Pituitary 2 – Moderators: Manish Aghi & Pablo F. Recinos

152: EPIDEMIOLOGY, NATURAL HISTORY, AND OPTIMAL MANAGEMENT OF NEUROHYPOPHYSEAL GERMIN CELL TUMORS - Avital Perry, MD, Hirokazu Takami, MD, PhD, Christopher S Graffeo, MD, Caterina Giannini, David J Daniels, MD, PhD; Mayo Clinic.

153: ENDOSCOPIC ENDOANASAL SURGERY AS AN ALTERNATIVE TO RADIOTHERAPY FOR RECURRENT OR RESIDUAL PITUITARY ADENOMAS - Eugenio Cardenas, MD, PhD, Ariel Koen, MD, PhD, Edison Najera, MD, Pablo Remon, MD, Ignacio Martin Schrader, MD, Alfonso Soto, MD; Department of Neurological Surgery, Hospital Universitario Virgen del Rocio, Sevilla, Spain.

154: INTRAOPERATIVE, HISTOLOGICAL, AND STIMULATED RAMAN SCATTER MICROSCOPY EVALUATION OF Cavernous Sinus Medial Wall Disease in Functional Pituitary Tumors - Ahmed Mohyeldin, MD, PhD, Ayoe Doniz-Gonzalez, MD, Pedro Augusto Sousa Rodrigues, MD, Guillermo Blasco Garcia de Andoain, MD, Kumar Abhinav, MD, Juan C Fernandez-Miranda, MD; Stanford University.

155: OUTCOMES OF INTRAOPERATIVE ULTRASOUND FOR ENDOSCOPIC ENDOANASAL TransSPHENOIDAL PITUITARY SURGERY - Joseph Domino, MD, Domenico Gattozzi, MD, Megan Jack, MD, PhD, Charoo Iyer, MBBS, Nick Harn, MD, PhD, David Beahm, MD, Roukouz Chamoun, MD; University of Kansas Medical Center, Medical College, Majaraja Sayajirao University of Baroda.

156: PREDICTORS OF FUNCTIONAL OUTCOME IN PATIENTS WITH POOR-GRADE ANEURYSMAL SUBARACHNOID HEMORRHAGE - Sami Khairy, MD, Munir Ababs, MD, Ahmed Alikhani, MD, PhD; King Abdulaziz Medical City - Riyadh.

157: INITIAL EXPERIENCE WITH EXOSCOPIC-BASED INTRAOPERATIVE INDOCYANINE GREEN FLUORESCENCE VIDEO ANGIOGRAPHY IN CEREBROVASCULAR SURGERY: ASSESSMENT OF FEASIBILITY, SAFETY AND NEXT GENERATION FORM-FACTOR - William Smithee, BSc, Srikant Chakravarthi, MD, MSc, Austin Epping, BSc, Mikaee Kasmam, BSc, Alejandro Monroy-Sosa, MD, Bhavani Kura, MD, Richard A Rovin, MD, Melanie B Fukui, MD, Amin B Kassam, MD; Aurora Neuroscience Innovation Institute.

158: UNEXPECTED RESIDUAL AFTER ENDOSCOPIC TRANS-SPHENOIDAL SURGERY FOR LARGE AND GIANT PITUITARY ADENOMAS - Ivo Peto, MD, Timothy G White, MD, Abdullah M Abunimer, MD, Hussam Abou-Al-Shaar, MD, Kevin Kwan, MD, Katherine Wagner, MD, Mark B Eisenberg, MD, Margherita Bruni, MD, Amir R Dehdashti, MD; University of South Florida, Hofstra Northwell School of Medicine, Harvard Medical School, University of Pittsburgh Medical Center.

159: RECURRENCE OF Rathke’s Cleft Cysts Based on Gross Total Resection of Cyst Wall: A META-ANALYSIS - Victor Lu, MD, PhD, Avital Perry, Christopher Graffeo, MD, Krishnan Ravindran, Jamie Van Compel, Mayo Clinic; University of Florida.
### Proffered Papers 21: Endoscopic Endonasal

- Moderators: Kilbwe A McKinney & Nathan T Zwagerman

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<td><strong>160: PREDICTORS OF POSTOPERATIVE VISUAL OUTCOMES FOLLOWING SURGICAL OPERATION FOR CRANIOPHARYNGIOMAS</strong></td>
<td>Srujan Kopparapu, Adham M Khalafallah, MD, Masaru Ishii, MD, PhD, Gary L Gaillia, MD, PhD, Nicholas Rowan, MD, Debraj Mukherjee, MD, MPH; Johns Hopkins University School of Medicine</td>
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<td><strong>162: THE BENEFITS OF PROGRESSIVE OCCIPITAL CONDUIT APPENDAGE IN ENHANCING THE FAR LATERAL APPROACH TO THE FORAMEN MAGNUM</strong></td>
<td>Alexander X Taji, MD1, Aalap Herur-Raman2, Walter C Jean, MD3, <em>Medstar Georgetown University Hospital, Surgical Theater, George Washington University</em></td>
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<td><strong>163: COMPARISON OF THE IMPACT ON SIMULATED AIRFLOW AND HEAT TRANSPORT BETWEEN THE SUPERIOR ETHMOIDAL APPROACH FOR ENDOSCOPIC ENDONASAL ANTERIOR CRANIAL BASE RESECTION AND THE TRADITIONAL ENDOSCOPIC ANTERIOR CRANIAL BASE APPROACH</strong></td>
<td>Varun Patel, MD1, Rohan Viswanathan, BS2, Maria Peris-Celda, MD, PhD3, Tyler Kenning, MD4, Carlos Pinheiro-Neto, MD, PhD5; Division of Otolaryngology / Head and Neck Surgery, Department of Surgery, Albany Medical Center, Albany, New York, Albany Medical College, Albany, New York, Department of Neurosurgery, Albany Medical Center, Albany, New York*</td>
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<td><strong>164: ENDOSCOPIC ENDONASAL ORBITAL SURGERY</strong></td>
<td>Jeffrey Glicksman, MD1, Maria Peris-Celda, MD, PhD2, Tyler Kenning, MD3, Edward Wladis, MD4, Carlos Pinheiro-Neto, MD, PhD5; Division of Otolaryngology / Head and Neck Surgery, Department of Surgery, Albany Medical Center, Albany, New York, Department of Neurosurgery, Albany Medical Center, Albany, New York, Adjunct Assistant Professor, Department of Neurosurgery, Mayo Clinic, Rochester, Minnesota, Department of Ophthalmology, Albany Medical Center, Albany, New York</td>
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<td><strong>165: GAINS REALIZED IN PITUITARY CARCINOMA SURVIVAL: A CONTEMPORARY EVALUATION USING THE SEER DATABASE.</strong></td>
<td>Nathan J Wallace, BS1, Anand K Devaiah, MD2; Boston University School of Medicine</td>
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<td><strong>166: ENDOSCOPIC TRANSNASAL OMENTOIDECTOMY: A SINGLE-CENTER’S EXPERIENCE AND APPROACH TO PATHOLOGY OF THE CRANIOCERVICAL JUNCTION</strong></td>
<td>Rocco M Dabecco, Raj Nanugnoori, Alexander Yu; Allegheny General Hospital</td>
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<td><strong>167: DISCONTINUATION OF POSTOPERATIVE PROPHYLACTIC ANTIBIOTICS FOR ENDOSCOPIC ENDONASAL SURGERY</strong></td>
<td>Carolina G Benjamin, MD1, Yosef Dastagirzada, MD2, Julia Bevilacqua, AGACP-BC, ANPC2, Jason Gurewitz, BA1, Chandra Sen, MD2, John G Golfinos2, Dimitris Placantonakis2, Jafar J Jafar2, Rich Lebowtiz2, Seth Lieberman2, Ariane Lewis, MD2, Donato Pacione, MD2; University of Miami, NYU Langone Medical Center</td>
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### Proffered Papers 22: Meningiomas 3

- Moderators: Jose Landeiro & James K. Liu

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<td><strong>168: AUTOMATED MENINGIOMA DETECTION AND SEGMENTATION USING DEEP NEURAL NETWORKS</strong></td>
<td>Maya Harary1, Alessandro Boaro2, Vasilios Kavouridis2, Jakub Kaczmarzyk3, Marco Mammi4, Hassan Dawood5, Satraijt Ghosh1, Omar Arnaout2; Department of Neurosurgery, David Geffen School of Medicine, University of California Los Angeles, Computational Neuroscience Outcomes Center, Department of Neurosurgery, Brigham and Women’s Hospital, McGovern Institute, Massachusetts Institute of Technology</td>
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<td><strong>169: MOLECULAR TAXONOMY OF MENINGIOMA</strong></td>
<td>Wenya Linda Bi, MD1, Samantha Hoffman, BS1, Eleanor Woodward, BS1, Joseph Driver, MD1, Sherwin Tavakol, BA1, Ayal A Aizer, MD1, Malak Abeldathagii1, Ossama Al-Mefty, MD2, Ian F Dunn3, Sandra Santagata, MD, PhD1, Brigham and Women’s Hospital, Surgical Pathology, King Fahad Medical City, King Abdulaziz City for Science and Technology, Oklahoma University Health Science Center</td>
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<td><strong>170: GAMMA KNIFE RADIOSURGERY FOR PATIENTS WITH FORAMEN MAGNUM MENINGIOMAS: COHORT STUDY.</strong></td>
<td>Salomon Cohen, MD1, Avital Perry, MD, Christopher S Graffeo, MD, Carlstrom P Lucs, MD1, Pollock E Bruce, MD, Link J Michael1, Mayo Clinic, Rochester, Department of Neurologic Surgery</td>
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<td><strong>171: SURGICAL IMPLICATION OF THE SUPRALABYRINTHINE AIRCELL TRACT IN COMBINED PETROCLIVAL MENINGIOMA</strong></td>
<td>Kentaro Watanabe, MD1, Ossama Al-Mefty, MD2, Ian F Dunn3, Sandro Santagata, MD, PhD1, Brigham and Women’s Hospital, Surgical Pathology, King Fahad Medical City, King Abdulaziz City for Science and Technology, Oklahoma University Health Science Center</td>
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<td><strong>172: ACCESS CORRIDOR FOR INTENTIONALLY TARGET DEVESCAPORIZATION OF FEEDING ARTERIES OF THE PETROCLIVAL MENINGIOMA</strong></td>
<td>Kentaro Watanabe, MD1, Jikei Medical University</td>
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<td><strong>173: PHOSPHOPROTEOMIC AND KINOMIC SIGNATURE OF CLINICALLY AGGRESSIVE GRADE I (LIS) MENINGIOMAS REVEALS RB1 SIGNALING AS A NOVEL MEDIATOR AND BIOMARKER</strong></td>
<td>Jacob Ruzevik, MD1, Sam Emerson, MD, PhD, Kate Carroll, Manuel Ferreira Jr; University of Washington</td>
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<td><strong>174: PREDICTING DISCHARGE DISPOSITION FOLLOWING MENINGIOMA RESECTION USING A MULTI-INSTITUTIONAL NATURAL LANGUAGE PROCESSING MODEL</strong></td>
<td>Meredith A Monsour, BS1, Whitney E Muhlestein, MD2, Gabriel Friedman, MD2, Aniket Zinzuwadia, AB2, Marcus Zachariah, MD3, Jean-Valery Coumans, MD2, Bob Carter, MD, PhD4, Lola B Chambless, MD5; Vanderbilt University School of Medicine, Department of Neurosurgery, University of Michigan Medical Center, Ann Arbor, MI, USA, Department of Neurosurgery, Massachusetts General Hospital, Boston, MA, USA, Department of Neurological Surgery, Vanderbilt University Medical Center, Nashville, TN, USA</td>
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### Proffered Papers 23: Schwannomas

- **175: EXPLORING WHETHER STATINS OR METFORMIN INFLUENCE THE GROWTH OF VESTIBULAR SCHWANNOMAS** - Shafeen Qazi, Sophia Tran, Sanjana Balachandra, Daniel E Killeen, MD, Jacob B Hunter, MD; University of Texas Southwestern Medical Center
- **176: VESTIBULAR SCHWANNOMAS GUIDELINES** - Roberto Leal Da Silveira, PhD, Eder da Silva Rocha, MD; Madre Teresa institute
- **177: SUPERIOR SEMICIRCULAR CANAL DEHISCENCE REVISIONAL SURGERY OUTCOMES** - Kevin Ding, BS, Prasanth Romiya, BS, Edwin Ng, BS, Dillon Dejam, BS, Roan N Anderson, Adam Enomoto, Courtney Duong, BS, John P Sheppard, Matthew Z Sun, MD, H. Westley Phillips, MD, Quinton Gopen, MD; UCLA Department of Neurosurgery, 2UCLA Department of Head and Neck Surgery
- **178: TRANS TEMPORAL VENOUS DECOMPRESSION FOR PULSATILE TINNITUS** - Patrick Slater, MD; Austin Ear Clinic
- **179: COCHLEAR IMPLANTATION AFTER RADIOSURGERY FOR VESTIBULAR SCHWANNOMA** - Neil S Patel, MD, Michael J Link, MD, Brian A Neff, MD, Matthew L Carlson, MD, Colin L Driscoll, MD; Mayo Clinic
- **180: CAN'T STOP, WON'T STOP: ASSESSING THE IMPACT OF TINNITUS ON PATIENT-REPORTED HEARING-RELATED QUALITY-OF-LIFE OUTCOMES IN VESTIBULAR SCHWANNOMA** - Avital Perry, MD, Christopher S Graffeo, MD, Maria Peris-Celda, MD, PhD, Lucas P Carlstrom, MD, PhD, Geffen Kleinman, PhD, Matthew L Carlson, MD, PhD; Mayo Clinic, 2Northshore University Hospital
- **181: KEYHOLE MIDDLE FOSSA APPROACH WITH TITANIUM MESH “GULL WING” REPAIR FOR TEG-MEN DEFECTS** - Andrew K Wong, MD, Michael Shinners, MD, Ricky H Wong, MD; Rush University Medical Center
- **182: VESTIBULAR SCHWANNOMA CLINICAL PHENOTYPES ARE ASSOCIATED WITH DIFFERENTIAL METHYLATION PATTERNS** - Avital Perry, MD, Christopher S Graffeo, MD, Lucas P Carlstrom, MD, PhD, Amanda Munoz Casabella, MD, Matthew L Carlson, MD, Colin L Driscoll, MD, Michael J Link, MD; Mayo Clinic

### Proffered Papers 24: Reconstruction

- **183: THE RHINOPHARYNGEAL (RP) FLAP AS AN ADJUNCT TO ENDOSCOPIC ENDONASAL RECONSTRUCTION OF LOWER CLIVAL AND CRANIOVERTEBRAL JUNCTION DEFECTS** - Pierre-Olivier Champagne, MD, Georgios Zenonos, MD, Eric E Wang, MD, Carl H Snyderman, MD, Paul A Gardner, MD; University of Pittsburgh Medical Center
- **184: PETROUS APEX CEPHALOCELES: RADIOLOGY FEATURES AND SURGICAL MANAGEMENT OF A RARE ENTITY** - Madeline Epsten, Mehmet Kocak, MD, Andre Beer Furlan, MD, Bledi C Brahijaj, MD, Richard W Byrne, MD, R. Mark Wiet, MD; Rush University Medical Center
- **185: EVALUATING SELLAR HEALING FOLLOWING VARIOUS RECONSTRUCTION TECHNIQUES IN TRANSSPHENOIDAL SURGERY: AN IMAGING AND ENDOSCOPIC REVIEW** - Mark B Chaskes, MD, MBA, Joshua Mccambridge, MD, Chandala Chitguppi, MD, Tawfiq Khoury, MD, Pascal Lavergne, MD, Mindy R Rabinowitz, MD, Gurston G Nyquist, MD, Marc Rosen, Adam E Flanders, MD, James J Evans, MD; Thomas Jefferson University Hospital
- **186: INFERIOR MEATUS MUCOSAL FLAP BASED ON THE INCISIVE FORAMEN ARTERY FOR SEPTAL RECONSTRUCTION AND RESURFACING OF SEPTUM DONOR SITE AFTER NASOSEPTAL FLAP HARVEST** - Randall S Ruffner, MD, Marcelo Charles, MD, Tyler Kenning, MD, Maria Peris-Celda, MD, PhD, Carlos Pinheiro-Neto, MD, MD; Albany Medical Center
- **187: COMPARATIVE ANALYSIS OF AUTOGRAFT AND XENOGRAFT BASED SPINAL FLUID LEAK PREVENTION AFTER TRANSLABYRINTHINE RESECTION OF CEREBELLOPONTINE ANGLE TUMORS** - Douglas J Totten, BA, Nauman F Manzoor, MD, Alexander D Sherry, BS, Robert J Yawn, MD, Reid C Thompson, MD, David S Haynes, MD, Alejandro Rivas, MD; Vanderbilt University School of Medicine, 2Department of Otolaryngology, Vanderbilt University Medical Center, 3Department of Otolaryngology, University of Tennessee Health Science Center, 4Department of Neurologic Surgery, Vanderbilt University Medical Center
- **188: OPERATIVE STRATEGY IN LATERAL SKULL BASE RECONSTRUCTION: COMPARATIVE OF RIGID AND NON RIGID TECHNIQUES** - Kristen Yancey, MD, Nauman F Manzoor, MD, Douglas J Totten, BA, Alexander D Sherry, BS, Alejandro Rivas, MD, David S Haynes, MD; Department of Otolaryngology, Vanderbilt University Medical Center, 3Vanderbilt University School of Medicine
- **189: SPONTANEOUS CEREBROSPINAL FLUID LEAKS FROM MULTIPLE ANTERIOR AND LATERAL SKULL BASE DEFECTS** - Nofrat Schwartz, Deanna Sasaki-Adams, Kevin D Brown, Adam M Zanation, Brian D Thorp, Brendan P O’Connell; University of North Carolina School of Medicine
- **190: THE ROLE OF DIAMOX AND HIGH-VOLUME LUMBAR PUNCTURE FOR TREATMENT OF IATROGENIC POST-OPERATIVE CEREBROSPINAL FLUID LEAK** - Aria Jamshidi, MD, Aashish Shah, Rick Komotor, MD, Michael Ivan; Jackson Memorial Hospital

**9:40am-10:40am Proffered Papers Sessions**
Proffered Papers 25: Pituitary 3 – Moderators: Garni Barkhoudarian & Pablo Ajler

191: THE IMPORTANCE OF LONG TERM FOLLOW UP AFTER ENDOSCOPIC PITUITARY SURGERY: DURABILITY OF RESULTS AND TUMOR RECURRENTITY - João Paulo Almeida, MD, Hirokazu Takami, MD, Raha Tabasinejad, MD, Miguel Marigil Sanchez, MD, PhD, Carlos Velasquez, MD, PhD, Gelareh Zadeh, MD, PhD, Fred Gentili, MD; University of Toronto

192: LONG-TERM OUTCOMES OF TRANSPHENOIDAL SURGERY FOR MANAGEMENT OF GROWTH-HORMONE SECRETING ADENOMAS: SINGLE CENTER RESULTS - Mohammed Asha, Asha, MD, Hirokazu Takami, MD, Carlos Velasquez, MD, Selly Oswari, MD, João Paulo Almeida, MD, Gelareh Zadeh, MD, PhD, Fred Gentili, MD; University of Toronto

193: PITUITARY INCIDENTALOMA AND NON-INCIDENTALOMA: A COMPARISON OF PRETREATMENT AND POSTTREATMENT CHARACTERISTICS - Kurren S Gill, MD, Chandala Chitguppi, MD, Rahul Alapati, Sarah Collopy, Prachi Patel, Tawfiq Khoury, MD, Pascal Lavergne, MD, Mindy Rabinowitz, MD, Gurston Nyquist, MD, Marc Rosen, MD, Christopher Farrell, MD, James Evans, MD, Thomas Jefferson University Hospital

194: DO WE NEED INTRAOPERATIVE MAGNETIC RESONANCE IMAGING IN ALL ENDOSCOPIC ENDOonasal pituitary adenoma surgery cases? A RETROSPECTIVE STUDY - Emrah Celtikci, MD, Hakan Emmez, MD, Gazi University Faculty of Medicine Department of Neurosurgery

195: ASSOCIATION OF PREOPERATIVE HEMORRHAGE WITH POSTOPERATIVE HORMONAL DYSFUNCTION IN SURGICALLY RESECTED PITUITARY ADENOMAS - Beyanne Strong, MD, Nathan Quig, MD, Avinash Chandran, PhD, Carlos Zamora, MD, Carolyn Quinsey, MD, University of North Carolina School of Medicine, Department of Neurosurgery, University of North Carolina School of Medicine, "Matthew Celrier Sport-Related TBI Research Center, Department of Exercise and Sport Science, University of North Carolina, "Department of Radiology, Division of Neuroradiology, University of North Carolina School of Medicine

196: PITUATy APPOLEXY: MANAGEMENT AND OUTCOMES AT A SINGLE CENTER OVER 15 YEAR EXPERIENCE - Scott C Seaman, MD, Mark C Dougherty, MD, Mario Zanaty, MD, Leslie A Bruch, MD, Scott M Graham, MD, Jeremy D Greenlee, MD, University of Iowa Hospitals and Clinics

197: ENDOSCOPIC ENDOnasal APPROACH TO GIANT PITUITARY ADENOMAS IN LOW INCOME COUNTRY: SINGLE SURGEON EXPERIENCE FROM AZERBAIJAN. - Tural Rahimli, DR; Baku Medical Plaza

198: PREDICTING PITUITARY ADENOMAS CONSISTENCY WITH PREOPERATIVE MAGNETIC RESONANCE ELASTOGRAPHY - Salomon Cohen Cohen, MD, Joshua D Hughes, MD, Ziying Yin, PhD, Matthew K Ball, DO, MS, John Huston III, MD, Jamie J Van Gompel, MD, James Evans, MD, Thomas Jefferson University Hospital


199: ADENOID CYSTIC CARCINOMA OF THE SKULL BASE: RETROSPECTIVE NATIONAL COHORT ANALYSIS OF TREATMENT PARADIGMS AND OUTCOMES - Shekhar K Gadkaree, MD, Anuraag S Parikh, MD, Eric Barbarite, MD, Andrew Holcomb, MD, Justin McCarty, MD, Stacey T Gray, MD, Derrick T Lin, MD, Massachusetts Eye and Ear, Harvard Medical School, "Department of Surgery, St. Elizabeth's Medical Center, Tufts University School of Medicine, Boston, MA

200: DECISION-TREE CLASSIFICATION OF CHORDOMAS AND CHONDROSARCOMAS - John Luebs, MD, Tyson Tragon, MD, Katie Taylor, MD, Carl H Snyderman, MD, MBA, SUNY Downstate Health Sciences University, Department of Radiology, University of Pittsburgh Medical Center, "UPMC Center for Cranial Base Surgery

201: THE ROLE OF CERVICAL AND PAROTID LYMPH NODES IN SURGICAL MANAGEMENT OF MALIGNANT TUMORS OF THE LACRIMAL SAC - Brian Swendsen, MD, Joseph Godovchik, MD, Swar Vimawala, MD, Samuel Garrett, MD, Michael Topf, MD, Adam Lugnibuhl, MD, David Cognetti, MD, Joseph Curry, MD, Thomas Jefferson University Hospitals, "Stanford University

202: NEW CLASSIFICATION OF ENDOSCOPIC TRANSDURAL NASOPHARYNGECTOMY FOR RECURRENT NASOPHARYNGEAL CARCINOMA: SHANGHAI EENT HOSPITAL EXPERIENCE - Hongmeng Xu, Quan Liu, Xicai Sun, Yurong Gu, Houyong Li, Dehui Wang, Qingguo Meng, Department of Otolaryngology Eye, Ear, Nose and Throat Hospital Shanghai Medical College of Fudan University, Department of Otolaryngology, Shenzhen Second People's Hospital

203: ENDOscopic ENDOnasal NASOPHARYngectomy AND ITS USE IN RT3 AND RT4 RECURRENT NASOPHARYNGEAL CARCINOMA - Roberto M Soriano, MD, Rima S Rindler, MD, Gustavo Pradilla, MD, C. Arturo Solares, MD; Emory University (SSO)

204: RADIOLOGICAL FINDINGS OF MEDIAL ORBITAL WALL BONY AND PERIORBITAL DEIHENCE IN SINONASAL MALIGNANCIES AS A PREDICTOR OF FINAL HISTOPATHOLOGICAL ORBITAL INVASION - Prachi N Patel, BA, Tawfiq Khoury, MD, Chandala Chitguppi, MD, Kurren Gill, MD, Gurston Nyquist, MD, Marc Rosen, MD, Pascal Lavergne, MD, FRCS, James Evans, MD, Mindy Rabinowitz, MD, Thomas Jefferson University, Department of Otolaryngology - Head and Neck Surgery, "Thomas Jefferson University, Department of Neurosurgery

205: SURGICAL MANAGEMENT OF SKULL BASE CHORDOMAS: SINGLE CENTER RESULTS IN THE LAST 10 YEARS - Joao Paulo Almeida, MD, Randy Van Ommeren, MD, Jeffrey Zuccato, MD, Allan Vescan, MD, John de Almeida, MD, Eric Monteiro, MD, Ian Witterick, MD, Fred Gentili, MD, Gelareh Zadeh, MD, PhD; University of Toronto

206: THE IMPACT OF INDUCTION CHEMOTHERAPY AND SOCIOECONOMIC FACTORS ON SURVIVAL IN SINONASAL UNDIFFERENTIATED CARCINOMA - Khodayar Goshtasbi, BS, Brandon M Lehman, BS, Arash Abiri, BS, Tyler Yasaka, BS, Frank Hsu, MD, PhD, Gilbert Cadena, MD, Edward C Kuani, University of California Irvine Department of Otolaryngology - Head and Neck Surgery, "University of California Irvine, "University of California Irvine Department of Neurological Surgery
Proffered Papers 27: Meningiomas 4 – Moderators: Edward T El Rassi & Francisco Guzman

207: THIRTY-DAY COMPLICATIONS FOLLOWING INTRADURAL VERSUS EXTRADURAL EXCISION OF THE SKULL BASE - Khodayar Goshtasbi, BS1, Arash Abiri, BS1, Mehdi Abouzari, MD1, Ronald Sahyouni, PhD1; Harrison W Lin, MD1, Hamid R Djallilian, MD1, Edward C Kuan, MD, MBA1; 1University of California Irvine Department of Otolaryngology - Head and Neck Surgery, 2University of California Irvine

208: CASE SERIES OF SKULL BASE MENINGIOMA RESECTIONS IN THE OCTOGENARIAN POPULATION - Dorian M Kusyk, MD, Gordon Mao, MD, Alexander Yu, MD; Allegheny General Hospital

209: IDENTIFICATION OF THE AGGRESSIVE ATYPICAL MENINGIOMA: HISTOPATHOLOGY, PROTEOMIC SIGNATURES AND GENOTYPING - Kate Carroll, MD, Jake Ruzevick, MD, Sam Emerson, MD, PhD, Manuel Ferreira Jr., University of Washington

210: MANAGEMENT OF PETROCLIVAL TUMORS - Diego Mendez Rosito, MD; Centro Medico Nacional de Noviembre, ISSSTE

211: EVALUATING THE SAFETY OF LIGATING THE ANTERIOR SUPERIOR SAGITTAL SINUS - Racheal Peterson, MD, Jennifer Kosty, MD, Bharat Ghikonda, MD; LSUHSC Shreveport

212: SHORT TERM OLFACTORY CHANGES AFTER ENDOSCOPIC TRANSSPHENOIDAL PITUITARY SURGERIES: IDENTIFICATION, DISCRIMINATION AND THRESHOLD RESULTS - Hazan Basak, Deniz Uluc, Suha Beton, Assoc Prof, Cem Mecko, Prof; Ankara University

213: FREE RECONSTRUCTION OF SKULL BASE DEFECTS: A RETROSPECTIVE REVIEW - Sen J Nanan, BA, Katherine Liu, BA, Todd Spock, MD, Eric Lee, MD, Andrey Filimonov, MD, Brett Miles, MD, Alfred M Iloreta, MD; Ichahn School of Medicine at Mount Sinai

214: EFFICACY AND SAFETY OF BEVACIZUMAB FOR VESTIBULAR SCHWANNOMA IN NEUROFIBROMATOSIS TYPE 2: A SYSTEMATIC REVIEW AND META-ANALYSIS OF TREATMENT OUTCOMES - Victor Lu1, Ravindran Krishnan2, Christopher Graffeo1, Avital Perry1, Jamie Van Gompel1, David Daniels1, Michael Link1; 1Mayo Clinic, 2University of Florida

215: NOVEL GRADING SYSTEM OF SIGMOID SINUS DEHISCENCE FOR RADIOLOGIC EVALUATION OF PULSATILE TINNITUS - Shelby Willis, BS1, Courtney Duong, BS1, Isaac Yang, MD1, Quinton Gopen, MD1; Department of Head and Neck Surgery, University of California Los Angeles, 2Department of Neurosurgery, University of California Los Angeles

216: THE CLINICAL IMPLICATIONS OF SPONTANEOUS HEMORRHAGE IN VESTIBULAR SCHWANNOMAS - Christopher S Hong, MD, Lan Jin, PhD, Yawaei Zhang, PhD, Wyatt B David, MS, Brian Shear, BS, E Z Esern-Omay, PhD, Robert K Fulbright, MD, Anita Huttner, MD, John Kveton, MD, Jennifer Moliterno, MD; Yale University School of Medicine

217: SURGERY AFTER SURGERY FOR VESTIBULAR SCHWANNOMA - Lukasz Przepiorka, MD1, Przemyslaw Kunert, MD, PhD1, Tomasz Dziedzic, MD, PhD1, Wiktoria Rutkowska1, Andrzej Marchel, MD, PhD1; Department of Neurosurgery, Medical University of Warsaw, Warsaw, Poland, 2Medical University of Warsaw, Warsaw, Poland

218: QUALITY OF LIFE ASSESSMENT AMONG VESTIBULAR SCHWANNOMA PATIENTS TREATED WITH MICROSURGERY VS. STEREOTACTIC RADIOSURGERY VS. OBSERVATION - Komal Naeem, MD, Mohamed Labib, MD, Malika Bhardava, MSc, Alana Leal, RN, Rahul Porter; Barrow Neurological Institute

219: SURGERY AFTER SURGERY FOR VESTIBULAR SCHWANNOMA - Max Whitmeyer1, Bledi C Brahimaj, MD1, Andre Beer Furlan, MD1, Sameer Alvi, MD1, Richard W Byrne, MD1, Madeline Epsten, R. Mark Wiet, MD1, Oh State University, 2Rush University Medical Center, 3Northwestern Medicine Regional Medical Group

220: SIGMOID SINUS PATENCY FOLLOWING VESTIBULAR SCHWANNOMA RESECTION VIA RETROSIGMOID VERSUS TRANSLABYRINTHINE RESECTION - Andrea M Ziegler, MD1, Nadeem El-Kouri, MD2, Zaneta Dymon, MD1, David Serrano, MD1, Mariah Bashir, MD1, Douglas Anderson, MD1, John Leonetti, MD1; Loyola University Medical Center, 2Loyola University Stritch School of Medicine
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<th>Proffered Papers 29: Reconstruction 3 – Moderators: Lee Zimmer &amp; Somasundaram Subramaniam</th>
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<td>223: MINIMIZING POSTOPERATIVE CSF LEAKS: AN ALGORITHM FOR SELLA RECONSTRUCTION FOLLOWING TRANSPHENOIDAL PITUITARY SURGERY - Stephanie Flukes, MD, Lily Mclaughlin, Marc A Cohen, MD, Vivian Tabar, MD; Multidisciplinary Pituitary and Skull Base Tumor Program, Memorial Sloan Kettering Cancer Center</td>
<td>10:45am-11:45am Proffered Papers Sessions</td>
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<td>224: SURGICAL OUTCOMES OF THE ENDONASAL ENDOSCOPIC APPROACH WITHIN A STANDARDIZED MANAGEMENT PROTOCOL FOR REPAIR OF SPONTANEOUS CSF LEAKS: A RETROSPECTIVE REVIEW OF 46 PATIENTS - Daniel Kreatsoulas, MD, Varun Shah, BS, Douglas Hardesty, MD; The Ohio State University Wexner Medical Center, The Ohio State University College of Medicine</td>
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<td>225: INSTITUTIONAL INSIGHT ON FATLESS RECONSTRUCTION OF THE SKULL BASE FOR CSF LEAK REPAIR FOLLOWING ENDOSCOPIC TRANSPHENOIDAL SURGERY: 44 CASE SERIES - Sophie M Peeters, MD, Marvin Bergsneider, MD, Marilene Wang, MD, Jivianne Lee, MD, Jeffrey Suh, MD, Won Kim, MD; UCLA</td>
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<td>226: OUTCOMES FOR REPAIR OF MIDDLE CRANIAL FOSSA ENCEPHALOCELES USING PEDICLED TEMPORALIS MYOFASCIAL FLAPS WITH BONE GRAFTS - Matthew R Bartindale, MD, Douglas D Backous, MD; Puget Sound ENT</td>
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<td>227: STRAWS DON'T SUCK - Erin K Reilly, MD, Mindy R Rabinowitz, MD, Colin T Huntley, MD, Maurits S Boon, MD, Judd Fastenberg, MD, Gregory A Epps, MD, Swar Vimawala, Chandala Chitguppi, Jena Patel, Gurston G Nyquist, Marc R Rosen, James J Evans; Thomas Jefferson University Hospital</td>
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<td>229: RELATIONSHIP BETWEEN RECURRENCE RATES OF RATHKE'S CLEFT CYSTS AND SURGICAL APPROACHES TO SELLA RECONSTRUCTION - Rebecca Limb, BMBS, BMedSci, James King, FRACS, MBBS, PhD; Royal Melbourne Hospital, Melbourne, Australia</td>
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<td>230: SOFT GASKET SEAL: REFINING THE CLOSURE TECHNIQUE FOLLOWING EEA. CASE SERIES AND REVIEW OF LITERATURE - Thiaqu Albonette Felicio, MD, Gustavo Guimarães Rangel, MD, Mostafa Shahein, MD, Giuliano Schmidt Bertazzo Silveira, MD, Rafael Martinez-Perez, MD, Marcus Zachariah, MD, PhD, Luís C Requena-Requena, MD, Douglas Hardesty, MD, Bradley A Otto, MD, Ricardo L Carrau, MD, Daniel M Prevedello, MD; The Ohio State University Wexner Medical Center, Department of Neurological Surgery, The Ohio State University Wexner Medical Center, Department of Otolaryngology and Head and Neck, Aswan University, Department of Neurological Surgery, Aswan, Egypt</td>
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231: VISUAL AND ENDOCRINE RECOVERY FOLLOWING CONSERVATIVE AND SURGICAL TREATMENT OF PITUITARY APOPLEXY: A META-ANALYSIS - Khodayar Goshtasbi, BS, Arash Abiri, BS, Ronald Sahyouni, PhD, Hossein Mahboubi, MD, Sophia Raefsky, BS, Edward C Kuan, MD, MBA, Frank P Hsu, MD, PhD, Gilbert Cadena, MD; University of California Irvine

233: PITUITARY ADENOMA RECURRENCE: MODELLING USING A NEW MODIFICATION OF THE SIPAP CLASSIFICATION - Mohammed S Alahmari, MD, Fahad Alkherayf, MSc, MD, Andrea Lasso, MSc, Fatmahalzahra Banaz, MD, Sepideh Mohajeri, MD, Pourya Masoudian, MD, Andre Lamote, MD, Charles Agbi, MD, Lisa Caulley, MSc, MD, Mohammad Alshardan, MD, Shaun Kittly, MD; Department of Otolaryngology-Head and Neck Surgery, University of Ottawa, Ottawa, Canada.

234: MARSUPIALIZATION OF RATHKE’S CLEFT CYSTS DOES NOT INCREASE THE RISK OF POST-OPERATIVE INTRACRANIAL INFECTION. - Thad W Vickery, MD, Sophie Peeters, MD, Aлина Chen, BA, Sahyouni Ronald, BS, Edward C Kuan, MD, MBA, Marvin Bergsneider, MD, Wang Marilene, MD; David Geffen School of Medicine at UCLA, Department of Head and Neck Surgery, Thomas Jefferson University Hospital.

235: SURGICAL OUTCOME OF ENDOSCOPIC TRANSSPHENOIDAL PITUITARY ADENOMA RESECTION IN ELDERLY PATIENTS COMPARED TO YOUNGER PATIENTS. - Kira A Murphy, MD, Chandala Chitguppi, MD, Pascal Lavergne, MD, Prachi Patel, BA, Tawfiq Khoury, MD, Mindy Rabinowitz, MD, Gurston G Nyquist, MD, Marc R Rosen, MD, Christopher J Farrell, MD, James J Evans, MD; Department of Otolaryngology – Head and Neck Surgery, Thomas Jefferson University Hospital, National Institutes of Health.

236: RACIAL AND ETHNIC DIFFERENCES IN PRESENTING CHARACTERISTICS OF PITUITARY ADENOMA PATIENTS AND OUTCOMES - Angela M Richardson, Taylor Hartlein, G D Brusko, Ricardo J Komotar, Jacques J Morcos, Corinna G Levine; University of Miami / Jackson Memorial Hospital

237: CAVERNOUS SINUS EXPLORATION IN CUSHING’S DISEASE: INDICATIONS AND OUTCOMES - Elizabeth Hogan, MD, Gretchen Scott, RN, Charlamos Lysikatos-Lysikatos, MD, Raven McGlotten, RN, Constantine Strakatis, MD, DSc, Lynnette Nieman, MD, Prashant Chittiboina, MD; George Washington University Department of Neurosurgery and Surgical Neurology Branch, National Institute of Neurological Disorders and Stroke, National Institutes of Health.

238: ANALYSIS OF PREOPERATIVE IMAGING AS A PREDICTIVE MARKER FOR INTRAOPERATIVE AND POSTOPERATIVE SURGICAL MANAGEMENT IN THE ENDOSCOPIC ENDONASAL RESECTION OF PITUITARY MACROADENOMAS - Laila Perez de San Roman Mena, MD, Srikant Chakravarthi, MD, Melanie B Fukui, MD, Austin Epping, BSc, Alejandro Monroy-Sosa, MD, Sammy Khalili, MD, Juanita M Celix, MD, Bhavani Kura, MD, Richard A Rovin, MD, Amin B Kassam, MD, Aurora Neuroscience Innovation Institute
239: TRANSSPHENOIDAL APPROACH FOR PITUITARY ADENOMAS IN THE ELDERLY: META-ANALYSIS OF SAFETY AND SURGICAL EFFICACY - Angela M Richardson, Sumedh S Shah, Justin Cheng, Ricardo J Komotar, Michael E Ivan, Jacques J Morcos; University of Miami / Jackson Memorial Hospital.

240: FIRST-IN-HUMAN INTRAOPERATIVE MRI COIL FOR HIGH RESOLUTION IMAGING DURING TRANSSPHENOIDAL SURGERY - Elizabeth Hogan, MD, Lalith Talagala, PhD, Joelle Sarlids, PhD, Hellmut Merkle, PhD, Alan Koretsky, Gretchen Scott, RN, John Butman, MD, PhD, Prashant Chittiotina, MD; George Washington University Department of Neurosurgery and Surgical Neurology Branch, National Institute of Neurological Disorders and Stroke, NIH MRI Research Facility, Laboratory of Functional and Molecular Imaging, National Institute of Neurological Disorders and Stroke, Surgical Neurology Branch, National Institute of Neurological Disorders and Stroke, Radiology and Imaging Sciences, the National Institutes of Health.

241: A SINGLE-CENTER EXPERIENCE IN BRACHYTHERAPY FOR TREATMENT-REFRACTORY NON-SECRETING PITUITARY ADENOMAS - Aaron R Plitt, MD, Ashleigh Halderman, MD, Robert Timmerman, MD, Bruce Mickey, MD, Samuel L Barnett, MD; UT Southwestern.

242: A PATIENT-DRIVEN QUALITY IMPROVEMENT INITIATIVE FOR PITUITARY ADENOMA CARE - Irene Druce, MD, MSc, Mary-Anne Doyle, MD, Amel Arnaout, MD, Dora Liu, MD, Fahad Alkherayf, MD, MSc, Charles Agbi, MD, Erin Keely, MD, Janine Malcolm, MD; University of Ottawa.

243: MORPHOMETRIC CHANGES IN THE SKULL IN ACROMEGALIC PATIENTS: ANATOMICAL PERSPECTIVE AND SURGICAL IMPLICATIONS - Danielle de Lara, MD, Joao G Valim1, Louise B Willrich1, Thiago B Sonogo, MD; Universidade Regional de Blumenau, Hospital Santa Isabel.

244: SURGICAL OUTCOME OF ENDOSCOPIC ENDONASAL VERSUS MICROSURGICAL TRANSSPHENOIDAL APPROACH FOR PITUITARY ADENOMAS: AN INSTITUTIONAL EXPERIENCE - Ovanes Akobyan, MD, Yury Shulev, PhD, Marat Yusupov, MD; City Hospital 2, North-Western State Medical University Named After I.I. Mechnikov.

245: RECOVERY OF CRANIAL NERVE DEFICITS IN PATIENTS PRESENTING WITH PITUITARY APoplexy: A CASE SERIES - Mohammed Alahmari, MD, Fahad Alkherayf, MSc, MD, Andrea Lasso, MSc, Fatmahalzahra Banaz, MD, Sepideh Mohajeri, MD, Pourya Masoudian, MD, Andre Lamothe, MD, Charles Agbi, MD, Lisa Caulley, MSc, MD, Mohammad Alashardan, MD, Shaun Kilty, MD; Department of Otolaryngology-Head and Neck Surgery, University of Ottawa, Ottawa, Canada, Division of Neurosurgery, Department of Surgery, University of Ottawa, Ottawa, Canada.

246: ENDOSCOPIC VERSUS NON-ENDOSCOPIC SURGERY FOR RESECTION OF PITUITARY ADENOMAS: A NATIONAL CANCER DATABASE STUDY - Khodayar Goshtasbi, BS, Brandom M Lehrich, BS, Arash Abiri, BS, Mehdi Abouzari, MD, PhD, Tyler Yasaka, BS, Frank P Hsu, MD, PhD, Gilbert Cadena, MD, Edward C Kuan, MD, MBA; University of California Irvine Department of Otolaryngology-Head and Neck Surgery, University of California Irvine, University of California Irvine Department of Neurological Surgery.
Proffered Papers 32: Interesting – Moderators: Howard Krauss & Mostafa Shahein

247: CSF FLOW IMPROVEMENT AFTER CHIARI MALFORMATION TYPE I SURGERY AS A PROGNOSTIC INDICATOR FOR CLINICAL IMPROVEMENT - Luke Mugge, MD, Camila Dassi, MD, Thiago Albonette Felicio, MD, Rafael Martinez-Perez, MD, Giuliano Schmidt Bertazzo Silveira, MD, Mostafa Shahein, MD, Gustavo Guimarães Rangel, MD, Marcus Zachariah, MD, PhD, Douglas Hardesty, MD, Daniel M Prevedello, MD, The University of Toledo Medical Center, Department of Neurosurgery, The Ohio State University Wexner Medical Center, Department of Neurological Surgery, Aswan University, Department of Neurosurgery, Aswan, Egypt, The Ohio State Wexner Medical Center, Department of Otolaryngology and Head and Neck

248: GIANT SOLITARY FIBROUS TUMOR: CASE SERIES AND EFFECTIVE MANAGEMENT - Mostafa Shahein, MD, Thomas L Beaumont, MD, PhD, Bradley A Otto, MD, Ricardo L Carrau, MD, Oliver Adunka, MD, Daniel M Prevedello, MD, Department of Neurosurgical Surgery, The Ohio State University Wexner Medical Center, Columbus, Ohio, Department of Neurosurgery, Aswan University, Egypt, Department of Neurosurgical Surgery Department. University of California, San Diego, Department of Otolaryngology–Head and Neck Surgery, The Ohio State University, Wexner Medical Center Columbus, Ohio


250: THE SELECTIVE VESTIBULAR NEURECTOMY FOR INTRACTABLE MÉNIÈRE’S DISEASE IN THE ERA OF ENDOSCOPY AND INTRAOPERATIVE ADVANCED NEUROMONITORING. - F. Salvinelli, F. Greco, F. Capuano, M. Della Costanza, A. Marinii, M. Iacoangeli, Department of E.N.T. Surgery, Campus Biomedico University, Rome, Italy, Department of Neurosurgery, Marche Polytechnic University, Umberto I General Hospital, Ancona, Italy

251: CLINICAL CHARACTERIZATION OF THIN BONE OVERLYING THE SUPERIOR SEMICIRCULAR CANAL - Michelle K Hong, BS, BA, Courtney Duong, BS, Isaac Yang, MD, Quinton Gopen, MD, David Geffen School of Medicine at UCLA, Department of Neurosurgery, UCLA, Department of Head and Neck Surgery, UCLA

252: A MODEL OF SUCCESS: INCORPORATING 3D-PRINTED MODELS OF SKULL BASE PATHOLOGY FOR SURGICAL APPROACH PLANNING - Lucas P Carlstrom, MD, PhD, Avital Perry, MD, Christopher S Graffeo, MD, Colin L Driscoll, MD, Michael J Link, MD, Jonathan M Morris, MD, Mayo Clinic

253: MRI T2-WEIGHTED COCHLEAR INTENSITY AS A PREDICTOR OF HEARING LOSS WITH VESTIBULAR SCHWANNOMA PATIENTS - Peter Q Luong, BA, Claudia I Cabrera, MD, MS, Nirav Patil, MBBS, MPH, Hammad A Khan, BS, Carlito Lagman, MD, Thomas A Ostergard, MD, Gary Huang, MD, Nicholas C Bambikidas, MD, Sarah E Mowry, MD, Case Western Reserve University School of Medicine, Department of Otolaryngology, University Hospitals Cleveland Medical Center, University Hospitals Cleveland Medical Center/Case Western Reserve University, Department of Neurological Surgery, University Hospitals Cleveland Medical Center

254: RETROSIGMOID INTRADURAL SUPRAMEATAL APPROACH (RISA): A SINGLE-CENTER EXPERIENCE WITH 19 CASES. - Minsoo Kim, MD, Samsung Medical Center, Seoul, Korea
255: ASSESSMENT OF VASCULAR CONFIGURATIONS OF THE SUPRACHAMATIC REGION USING ENDOSCOPIC ENDONASAL CORRIDORS: A CADAVERIC ANATOMICAL STUDY - Honowei Zhu, MD, PhD1, Amandeep S Aaluwalia1, Ivan El-Sayed1, MD2, Adib A Abla, MD2, Roberto Rodriguez Rubio, MD2,3; Department of Neurosurgery, The First Affiliated Hospital of Xiamen University, Xiamen, China, 2Skull Base & Cerebrovascular Laboratory, UCSF, 3University of Chicago, 4Department of Otolaryngology – Head and Neck Surgery, UCSF, 5Department of Neurological Surgery, UCSF

256: COMPARATIVE ANALYSIS OF MICROSURGICAL TECHNIQUES FOR THE EXPOSURE OF INTERNAL MAXILLARY ARTERY: A CADAVER STUDY OF A MAJOR DONOR FOR CEREBRAL REVASCULARIZATION - Xiong Li, MD, PhD1, Atakan Orsceilk, MD2, Ivan H El-Sayed2, MD2, Ricardo L Carrau, MD3, Daniel M Prevedello, MD4; The Ohio State University Wexner Medical Center, Department of Neurosurgical Surgery, 5Department of Neurosurgery, Beijing Chao-Yang Hospital, Capital Medical School, Beijing, China, 6Skull Base & Cerebrovascular Laboratory, UCSF, 7Department of Otolaryngology – Head and Neck Surgery, UCSF, 8Department of Neurological Surgery, UCSF, 9Department of Neurosurgery, and Head and Neck, 10Departments of Neurosurgery and Head and Neck Surgery, Wexner Medical Center, The Ohio State University. Columbus, OH, USA

258: THE ROLE OF ENDOSCOPIC CONDYLECTOMY IN ENDONASAL INFERIOR CLIVECTOMY AND EXTENDED FAR MEDIAL APPROACHES: DEMONSTRATION OF STEREOTACTIC CT LANDMARKS IN CADAVERIC DISSECTION WITH CLINICAL CORRELATION. - Giuliano S Bertazzo-Silveira, MD1, Sunil V Manjila, MD1, Rafael Martinez-Perez, PhD2, Thiago F Albonette, MD1, Luciano M Prevedello, MD1, Ricardo L Carrau, MD2, Daniel M Prevedello, MD2; The Ohio State University Wexner Medical Center, Department of Neurological Surgery, 3Department of Neurosurgery, McLaren Hospital, Bay Region, Bay City MI, USA, 4The Ohio State University Wexner Medical Center, Department of Otolaryngology and Head and Neck, 5Departments of Neurosurgery and Head and Neck Surgery, Wexner Medical Center, The Ohio State University. Columbus, OH, USA

259: VOLUMETRIC ASSESSMENT OF ENDOSCOPIC ENDONASAL ANTERIOR CLINOIDECTOMY - Pierre-Olivier Champagne, MD1, Georgios Zenonos, MD2, Eric E Wang, MD1, Carl H Snyderman, MD1, Paul A Gardner, MD1; University of Pittsburgh Medical Center

260: MORPHOMETRIC ANALYSIS OF THE PETROCLIVAL REGION AND THE EFFECTS OF CLIVAL DIMENSIONS ON SURGICAL APPROACH SELECTION. - Zeid Alhouroani, MD1, Ahmad Alhouroani, MD2, Candice Nguyen, BS1, Heegok Yeo, BS2, Brian Williams, MD1, Norberto Andaluz, MD1; University of Louisville and Head and Neck, 2Departments of Neurosurgery and Head and Neck Surgery, Wexner Medical Center, The Ohio State University. Columbus, OH, USA

262: BONY DEHISCENCE IN THE LATERAL WALL OF THE SPHENOID SINUS: PREVALENCE AND ITS IMPLICATION - Sung-Woo Cho, Kihwan Hwang, Tae-Bin Won, MD, PhD1; Seoul National University Bundang Hospital

### Proffered Papers 34: Pediatric 2

263: NASAL CHONDROMESENCHYMAL HAMARTOMA INVOLVING ANTERIOR SKULL BASE – A CASE SERIES IN A PEDIATRIC POPULATION - Gustavo Rangel1, Erin Hamersley1, Gregory Wiet2, Brad Otto2, Rachel Mariani1, Annie Drapeau1, Ricardo Carrau1, Daniel Prevedello1, Patrick Walz2; Nationwide Children’s Hospital - OSU, 3OSU

264: PEDIATRIC ENDOSCOPIC ENDONASAL SKULL BASE SURGERY: AN INSTITUTIONAL EXPERIENCE OF 54 PATIENTS - Cem Meco, Prof, Gokmen Kahilogullari, Assoc Prof, Suha Beton, Assoc Prof, Murat Zaimoglu, Onur Ozgural, Hazan Basak, Melih Bozkurt, Assoc Prof, Agahan Unlu, Prof, Dr; Ankara University

265: SINONASAL SYMPTOM OUTCOMES FOLLOWING ENDOSCOPIC ANTERIOR CRANIAL BASE SURGERY IN THE PEDIATRIC POPULATION - Taylor R Carle, MD1, Anthony P Heaney, MD, Harvey K Chiu, MD, Jeffrey D Suh, Marilene B Wang, MD2; UCLA

266: JUVENILE NASOPHARYNGEAL ANGIOFIBROMA: A RETROSPECTIVE INSTITUTIONAL SURGICAL CASE SERIES - Salomon Cohen Cohen, MD1; Michael J Link, MD1, Jeffrey R Janus, MD2, Garret W Cho, MD2, Eric J Moore, MD2, Jan Kasperbauer, MD2, Jamie J Van Gompel, MD, 3Mayo Clinic, Rochester, Department of Neurologic Surgery, 4Department of Neurological Surgery, 5Department of Neurosurgery, 6University Bundang Hospital, 7University of Chicago, 8Institute of Otorhinolaryngology

267: ANTERIOR CLINOIDECTOMY: REPORT ON CHARACTERISTICS AND OUTCOMES - Ariel Kaen, MD, PhD1, Eugenio Cardenas, MD, PhD2, Edinson Najera, MD2, Pablo Remon, MD2, Ignacio Martin Schrader, MD2; Department of Neurological Surgery, Hospital Universitario Virgen del Rocio, Sevilla, Spain, 2Department of Endocrinology and Nutrition, Hospital Universitario Virgen del Rocio, Sevilla, Spain

270: ENDOSCOPIC ENDONASAL SURGERY FOR "INOPERABLE" CRANIOPHARYNGIOMAS: INTRAOPERATIVE CHALLENGES AND MANAGEMENT OF COMPLICATIONS - Juan C Fernandez-Miranda, MD, FACS; Ahmed MoyalPhinell, MD, PhD, Zara Patel, Jayakar Nayak, Peter Hwang; Stanford University
**Poster Listings**

**P001: EARLY INVESTIGATION ASSESSING THE FEASIBILITY OF ELECTROSPINNING OF CYANOACRYLATE GLUE FOR ENDONASAL SKULL BASE REPAIR** - Ivanna Nebor, MD, Daewoo Han, PhD, Kora Montemagno, MS, Rebecca Fumagalli, MS, Ikrame Labiad, MS, Alice Xu, BS, Andrew J. Steckl, PhD, Ahmad Sedaghat, MD, Mario Zuccarello, PhD, Jonathan Forbes, MD; University of Cincinnati Medical Center

**P002: MANAGING CSF LEAK WITH TEMPORALIS MUSCLE FLAP FOR CHALLENGING SKULL BASE DEFECT AFTER RADIATION THERAPY** - Wei-Hein Wang, MD, Ming-Ying Lan, MD, PhD; Department of Neurosurgery, Taipei Veterans General Hospital, National Yang-Ming University, Taiwan, MD; Department of Otologyngology, Taipei Veterans General Hospital, National Yang-Ming University, Taiwan

**P003: MICROSURGICAL ANATOMY OF THE LABYRINTHINE AND SUBARCULATE ARTERIES AND CLINICAL IMPLICATIONS** - Laura Salgado-Lopez, MD, Maria Peris-Celda, MD, PhD; Department of Neurosurgery, Albany Medical Center, Albany, NY

**P004: CLASSIFICATION OF THE SUPRAMEATAL TUBERCLE AND MORPHOMETRIC ANALYSIS WITH SURGICAL APPROACH TO THE TEMPORAL BONE** - Humberto Reyna, MD, Sergio Reyna, MD, Jose Espinoza, MD, Enrique Lopez, MD, Diego Mendez, PhD; CMN 20 Noviembre ISSSTE

**P005: AN ANATOMIC STUDY OF THE INTERCAVERNOUS SINUSES** - Timothy Banks, Jennifer Kosty, MD, Racheal Wolfson, MD, Rimmel Dossani, MD, Bharat Guthikonda, MD; Louisiana State University Shreveport, Shreveport, LA; University at Buffalo, Buffalo, NY

**P006: ANATOMICAL STEP-BY-STEP DISSECTION OF COMPLEX SKULL BASE APPROACHES FOR TRAINEES: SURGICAL ANATOMY OF THE RETROSGIMOID APPROACH** - Christopher S Graffeo, MD, Maria Peris Celda, MD, PhD, Avital Perry, MD, Lucas P Carstrom, MD, Colin L Driscoll, MD, Michael J Link, MD; Mayo Clinic, Rochester, MN

**P007: SKULL BASE ANATOMY IN CHARGE PATIENTS WITH BILATERAL CHONAL ATRESIA** - Christopher Pool, MD, Einat Slonimsky, MD, Roshan Nayak, BS, Linda Engle, BS, Jay Zhu, PhD, Meghan Wilson, MD; Penn State Hershey Medical Center, Hershey, PA

**P008: MICROSURGICAL ANATOMY OF THE INFERIOR PETROCLIVAL VEIN: AN ANATOMIC AND RADIOLOGIC STUDY** - Satoshi Matsuo, MD, Noritaka Komune, MD, Sojiri Yamashita, MD, Yuichiro Miyamatsu, MD, Toshiyuki Amano, MD, Akira Nakamizo, MD; Department of Neurosurgery, Clinical Research Institute, National Hospital Organization Kyushu Medical Center, Department of Otorhinolaryngology, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan

**P009: HISTOLOGY OF THE VERTEBRAL ARTERY-DURAL JUNCTION: RELEVANCE TO POSTEROLATERAL APPROACHES TO THE SKULL BASE** - Robert Rennert, MD, Martin Powers, Jeffrey Steinberg, Takahiro Ono, John Day, Alexander Khelessi, Michael Levy; UCSD, UCSD, University of Arkansas

**P010: EAR THROUGH NOSE: AN ENDOSCOPIC ENDONASAL APPROACH TO IAC AND COCHLEA. ANATOMIC STUDY** - Yury Anania, MD, Ricardo Gomez Arroyo, MD, Eric W Wang, MD, Georgios Zonos, MD, Cari H Snyderman, MD, MBB, Gardner A Paul, MD; Center for Cranial Base Surgery, University of Pittsburgh, Department of Otolaryngology, University of Pittsburgh Medical Center, Department of Neurosurgery, University of Pittsburgh Medical Center

**P011: MORPHOMETRIC ANALYSIS OF THE PETROCLIVAL ANGLE IN ADULTS USING HIGH RESOLUTION CT SCANS** - Ahmad Alhourani, MD, Zaid Aljuboori, MD, Candice Nguyen, BS, Heegok Yeo, BS, Brian Williams, MD, Norberto Andaluz, MD; University of Louisville

**P012: ANATOMICAL STUDY OF THE JUGULAR FORAMEN IN CADAVEROUS SPECIMENS IN THE MEXICAN POPULATION, VARIETIES AND CONSTANTS** - Alfredo Espinosa Mora, MD, Humberto Reyna Mendez, MD, Enrique Lopez Berumen, MD, Carlos Erosa Velázquez, MD, Diego Méndez Rosito, MD; CMN 20 DE Noviembre

**P013: MICROSURGICAL ANATOMY OF THE TRIANGLES OF THE POSTERIOR FOSSA: NEUROSURGICAL RELEVANCE** - Alejandro Monroy-Sosa, MD, Srikant Chakravarti, MD, Jonathan Ortiz Rafael, MD, Austin Epping, Richard Rovin, MD, Melanie Fukui, Amin Kassam; Aurora Neuroscience Innovation Institute

**P014: SURGICAL-ANATOMICAL PILLARS OF POSTERIOR PETROSECTOMY: A TRIDIMENSIONAL VIEW** - Alejandro Monroy-Sosa, MD, Srikant Chakravarti, MD, Austin Epping, Richard Rovin, MD, Melanie Fukui, Amin Kassam; Aurora Neuroscience Innovation Institute

**P015: NUANCES OF THE SURGICAL MANAGEMENT OF THE PARANASAL AND VENTRAL CRANIAL BASE MALIGNANCIES: THE ENDONASAL ENDOSCOPIC APPROACH** - Alejandro Monroy-Sosa, MD, Srikant Chakravarti, MD, MSc, Austin Epping, BSc, Juanita M Celix, MD, Richard A Rovin, MD, Melanie B Fukui, MD, Amin B Kassam; Aurora Neuroscience Innovation Institute

**P016: THE ROLE OF THE PETROCLIVAL FISSURE AS A SURGICAL LANDMARK FOR THE HYPOGLOSAL CANAL** - Roberto M Soriano, MD, Gustavo Pradilla, MD, C. Arturo Solares, MD; Emory University (SSO)

**P017: PERICILINOID AND PERICAVERNOUS SURGICAL CORRIDORS TO THE CAVERNOUS SINUS: AN EXTENSIVE ANATOMOSURGICAL ANALYSIS** - Alexander I Evins, Giovanni Barbagli, Lukasz Przepiorka, Michael G Kim, Jimmy J Xia, Gabri- el M Longo, Paolo Di Russo, Philip E Stieg, Antonio Bernardo; Weill Cornell Medicine, Neurological Surgery

**P018: NEAR DEHISCENCE OF THE ENDOLYMPHATIC DUCT AND SAC** - Erika Moxley, MS, Anna K Bareiss, MD, Markus Lammle, MD, Peter Amenta, MD, FAANS, Neal M Jackson, MD; Tulane University

**P019: ANATOMICAL STEP-BY-STEP DISSECTION OF COMPLEX SKULL BASE APPROACHES FOR TRAINEES: SURGICAL ANATOMY OF THE TRANSLABYRINTHINE APPROACH** - Avital Berry, MD, Christopher S Graffeo, MD, Lucas Carstrom, MD, Colin L Driscoll, MD, Michael J Link, MD, Maria Peris-Celda, MD, PhD; Mayo Clinic, Rochester, MN

**P020: EXTREME HYPERPNEUMATIZATION OF THE SKULL BASE AND C-SPINE ASSOCIATED WITH Meningitis: Mechanisms and Management** - Emily Pascal, BS, Keonho A Kong, MD, Kevin McLaughlin, MD, Dwayne Anderson, MD, Daniel W Nuss, MD, FACS; Louisiana State University Health Sciences Center - New Orleans, Tufts University, Department of Radiology, Our Lady of the Lake Regional Medical Center
P021: THE ANTERIOR TENTORIAL FOLDS: SURGICAL SIGNIFICANCE AND MANAGEMENT - Michael G Kim, Alexander I Evins, Philip E Stieg, Antonio Bernardo; 1Department of Neurosurgery, Westchester Medical Center, 2Weill Cornell Medicine, Neurosurgical Research

P022: A SKULL BASE SURGEON’S GPS: 27 ANATOMICAL TRIANGLES OF THE ANTERIOR, POSTERIOR AND MIDDLE FOSSAE - Dimitri Benner, Benjamin K Hendricks, MD; 1Mark C Preul, MD; 2Michael T Lawton, MD; 31Medical University of Vienna, 2Barrow Neurological Institute

P023: THE CLINOID SPACE: SURGICAL ANATOMY AND RELATIONSHIP FOR ENDOSCOPIC APPROACHES - Pedro Augusto Sousa Rodrigues, MD, Ayoze Doniz-Gonzalez, MD, Ahmed Mohamed Hany El-Kholy, MD, PhD, Qingguo Meng, MD, Kumar Abhinav, Juan C. Fernandez-Miranda, MD; Stanford University Medical Center

P024: THE PETROUS PROCESS OF SPHENOID BONE: A SURGICAL LANDMARK FOR THE IDENTIFICATION OF ABDUCENS NERVE IN ENDOSCOPIC ENDONASAL SURGERY - Ayoze Doniz-Gonzalez, MD; Pedro Augusto Sousa Rodrigues, MD, Guillermo Blasco Garcia de Andoain, Ahmed Mohamed Hany El-Kholy, MD, PhD, Qingguo Meng, MD, Ping Guigui, MD, Juan C. Fernandez-Miranda, MD; Stanford University Medical Center

P025: THE ANTERIOR INCISURAL WIDTH AS A PREOPERATIVE ANALOGUE OF THE DOUBLE ORIGIN POSTERIOR INFERIOR CEREBELLAR ARTERY FOR TREATMENT OF A RUPTURED, FUSIFORM PICA ANEURYSM - Fabio Frisoli, MD; Joshua S Catapano, MD, Stefan Koester, Gabriella Paisan, MD, Michael Lang, MD, Michael T Lawton, MD, Barrow Neurological Institute

P026: THE ANTERIOR INCISURAL WIDTH AS A PREOPERATIVE ANALOGUE OF THE DOUBLE ORIGIN POSTERIOR INFERIOR CEREBELLAR ARTERY FOR TREATMENT OF A RUPTURED, FUSIFORM PICA ANEURYSM - Fabio Frisoli, MD; Joshua S Catapano, MD, Stefan Koester, Gabriella Paisan, MD, Michael Lang, MD, Michael T Lawton, MD, Barrow Neurological Institute

P027: DOLENC APPROACH FOR THE CRANIOTOMY CLIPPING OF A CAROTID-OPHTHALMIC GIANT ANEURYSM: A CASE REPORT - Gaoyang Fan, Lei Zhao, Yanchun Sun, Hao Hant, Chunhai Su, Lijian Zheng, Lei Feng; ‘Jining No.1 People’s Hospital, 2Air Force Medical University

P028: COMPARATIVE ANATOMICAL ANALYSIS BETWEEN MINIPERIDIONAL AND SUPRAPRIMAL APPROACHES IN THE TREATMENT OF ANTERIOR CIRCULATION ANEURYSMS - Rafael Martinez-Perez, Thiago Albonette-Felicio, Giuliano Silva-Vertazza, Luis Requena, Ruichun Li, Douglas Hardesty, Ricardo Carrau, Daniel Prevedello; Wexner Medical Center, The Ohio State University

P029: RE-IMPLANTATION BYPASS USING ONE LIMB OF A DOUBLE ORIGIN POSTERIOR INFERIOR CEREBELLAR ARTERY FOR TREATMENT OF A RUPTURED, FUSIFORM PICA ANEURYSM - Fabio Frisoli, MD; Joshua S Catapano, MD, Stefan Koester, Gabriella Paisan, MD, Michael Lang, MD, Michael T Lawton, MD, Barrow Neurological Institute

P030: FLOW DIVERSION OF A TRAUMATIC MIDDLE CEREBRAL ARTERY PSEUDANEURYSM WITH THE PIPELINE FLEX EMBOLIZATION DEVICE - Zaid Aliuboori, MD; Nicolas Khattar, MD, Dale Ding, MD, Robert James, MD; University of Louisville

P032: THE NEED FOR CRITICAL APPRAISAL OF BIG DATA RESEARCH IN CEREBROVASCULAR NEUROSURGERY - Kristen M Scheitter, MD; Christopher S Graefee, MD, MS; Avital Perry, MD, MD, Lucas P Carlstrom, MD, PhD; L. Madison Michael II, MD, Michael J Link, MD, Paul Klimo Jr, MD, MPH; 4Mayo Clinic, 5University of Tennessee Health Science Center

P033: EFFECTS OF PREOPERATIVE EMBOLIZATION ON PETROCLIVAL MENINGIOMAS: OPERATIVE IMPACT, OUTCOMES AND COMPLICATIONS - Sam Emerson, MD, PhD, Jake Ruzevick, MD, Rajeev Sen, MD, Kate Carroll, MD, Manuel Ferreira Jr, MD, PhD; University of Washington

P034: ECTOPIC RATHKE’S CLEFT CYSTS: REVIEW OF AN UNUSUAL ENTITY - S Newman, BA; 1R Rindler, MD, 2A Boucher, MD, 3S Neill, MD, 4G Pradilla, MD; 1Emory University School of Medicine, 2Emory University Department of Neurosurgery

P035: VOLUMETRIC GROWTH RATES OF UNTREATED Cavernous Sinus Meningiomas - Carolina Benjamin, MD; Kimberly Ashayeri, Zane Schnurman, MD, Eman Kazi, BS; Reed Mullen, Donato Pacione, MD, Chandra Sen, MD, John G Colfinos, MD, Jafar Jafar, Dimitris Placantonakis, MD, Douglas Kondziolka; 1University of Miami, 2NYU Langone Medical Center

P036: TREATMENT STRATEGY AND CLINICAL OUTCOME FOR Cavernous Sinus Lesion - Takashi Sugawara, PhD, Yoji Tanaka, PhD, Takanori Maehara, PhD; Department of Neurosurgery, Tokyo Medical and Dental University

P037: ANOTHER Cavernous Sinus Syndrome - Steven A Newman, MD; University of Virginia

P038: BILATERAL SEQUENTIAL SPONTANEOUS OTOGENIC PNEUMOCEPHALUS: LESSONS IN PATHOPHYSIOLOGY AND MANAGEMENT - Scott B Shapiro, MD, Noga Lipschitz, MD, Parker Tumlin, Bryan Krueger, MD, Jonathan A Forbes, MD, Ravi N Samy, MD; University of Cincinnati College of Medicine

P039: POLYMICROBIAL INTRACEREBRAL ABSCESS GROWING ACHROMOBACTER XYLOSEXIDANS AND MYCOBACTERIUM AVIUM COMPLEX - Juliana Rotter, MD; Christopher S Graefee, MD, MS, Hannah E Gilder, MD, Lucas P Carlstrom, MD, PhD, Avital Perry, Michael J Link, MD; Mayo Clinic

P040: FETAL BOVINE COLLAGEN GRAFTS FOR REPAIR OF TEGMEN DEFECTS AND ENCEPHALOCOELES VIA MIDDLE CRANIAL FOSSA APPROACH - Anand Patel, MS; Matthew Bartindale, MD, 2Jehad A Zakaria, MD, 3Anand V Germanwala, MD, 4Douglas E Anderson, MD, 5Sam J Marzo, MD; 1Emory University School of Medicine, 2Department of Neurosurgery, 3Department of Otolaryngology, 4University of Tennessee Health Science Center

P041: PRESENTATION AND MANAGEMENT OF WOUND CLOSURE FAILURE AFTER Spheno-clival Expanded Endonasal Surgery: Single Institution Experience - Abel David, MD; Nicole Jiam, MD, Jose Guirrola II, Manish Agh, MD, Philip Theodosopolous, Michael W Mcdermott, MD, Ivan H El-Sayed; University California San Francisco

P042: IATROGENIC CEREBROSPINAL LEAK ARISING FROM A PERSISTENT FONTICULUS FRONTALIS - William C Harris, MD, MS; Edward D McCool, MD, MPH; 1Tulane University Department of Otorhinolaryngology, 2Ochsner Clinic Foundation Department of Otorhinolaryngology; Tulane University Depart-
Poster Listings (Cont.)

P043: LIQUORHEA  • CONSERVATIVE OR SURGERY, OR BUT BOTH OF THEM IS TRUE?  • Jan Hemza, MD, PhD, PhD, MPA; Dpt. of Neurosurgery Faculty Hospital at Saint Ann

P044: IDIOPATHIC INTRACRANIAL HYPERTENSION PRESENTING AS SPONTANEOUS CSF LEAK  • Christopher S Hong, MD, Eugenia M Vining, MD, R P Manes, MD, Sacit B Omay, MD; Yale University School of Medicine

P045: A SIMPLIFIED TRANSPERKYOID TECHNIQUE TO LATERAL SPHENOID ENCEPHALECTOMY: A SHORTER RUN FOR A LONGER SLIDE  • Dennis M Tang, MD, Jonathan Y Ting, Troy D Woodard, MD, Pablo F Recinos, MD, Varun R Kshetry, MD, João Paulo Almeida, MD, Elisa Illing, Kolin Rubel, Aaron Cohen-Gadol, MD, Raj Sindwani, MD; Cleveland Clinic Foundation, Indiana University Health

P046: MANAGEMENT OF CEREBELLAR DYSPLASIA, CHIARI I MALFORMATION, SYRINGOMYELIA AND HYDROCEPHALUS IN A PATIENT WITH BANNAYAN-RILEY-RUVALCABA SYNDROME  • Ali O Jamshidi; Kaiser Permanente

P049: COMBINED TRANS-ORAL, TRANS-NASAL ENDO-SCOPIC SURGERY WITH IMMEDIATE CRANIO-CERVICAL FUSION FOR GIANT CHORDOMAS OF THE CLIVUS AND CRANIO-CERVICAL JUNCTION • STATE OF THE ART TEAM WORK  • Alessandra Cataldo Russomando, MD, Ron Eliashar, MD; Hadassah Medical Center

P050: ENDOSCOPIC ENDONASA APPROACH TO LARGE ANTERIOR SKULL BASE CHONDROSARCOMA: CASE REPORT  • Tural Hidayetov, MD, Tural Rahimbil, DR; Baku Medical Plaza

P051: CRANIAL NERVE VI Palsy AS PRESENTING SIGN OF PREVIOUSLY UNDIAGNOSED METASTATIC PROSTATE ADENOCARCINOMA TO THE CLIVUS  • Jennifer F Douglas, MD, John YK Lee, MD, MSCE, Karthik Rajasekaran, MD; Department of Otorhinolaryngology - Head and Neck Surgery, University of Pennsylvania Health System, Department of Neurosurgery, University of Pennsylvania Health System

P052: INTRA-OPERATIVE EVALUATION OF SIGMOID SINUS VELOCITY IN TRANSLABYRINTHINE CRANIOTOMIES FOR VESTIBULAR SCHWANNOMAS USING DOPPLER ULTRASOUND  • Zachary R Barnard, MD, MS, Anne K Maxwell, MD, Tommy J Muelleman, MD, William H Slattery, MD, Guatam U Mehta, MD, MS, Gregory P Lekovic, MD, PhD; House Institute

P054: MANAGEMENT OF FRONTAL MUCOCCELL FLAP RECONSTRUCTION OF ANTERIOR SKULL BASE RESECTION DEFECT  • Matthew Kim, MD, Carl Snyderman, MD, MBA; Andrew Tassler, MD; Weill Cornell Medical College, University of Pittsburgh School of Medicine

P056: DEFINING THE COMPLICATIONS LANDSCAPE OF IN-TERNAL NEUROLYSIS FOR THE TREATMENT OF TRIGEMINAL NEURALGIA VIA A SYSTEMATIC REVIEW OF THE LITERA-TURE  • Jacob Mazza, BS; Victor Sabourin, MD, Jeffery Head, BA, Pascal Lavergne, MD, Tomas Garzon, MD, Anthony Stefanelli, MD, Fadi Al-Salegh, MD, James J Evans, MD; Thomas Jefferson University

P057: COMBINED PELVINE EMBOLIZATION DEVICE WITH ENDOSCOPIC ENDONASA FASCIA LATA/MUSCLE GRAFT REPAIR AS A SALVAGE TECHNIQUE FOR TREATMENT OF IATROGENIC CAROTID ARTERY INJURY AND PSEUDO-EURYSM  • Jordina Rincon-Torrellea, MD, Ann Liu, MD, Matthew T. Bender, MD, Cameron G. McDougall, MD, Anthony P. Tufaro, DDS, MD, Alexander L. Coon, MD, Douglas D. Reh, MD, Gary L. Gallia, MD, PhD; Johns Hopkins Hospital

P058: COMPLICATIONS OF ENDOSCOPIC ENDONASA SKULL BASE SURGERY FOR SELLAR PATHOLOGY - AN INSTITUTIONAL EXPERIENCE  • Amey Saverdekar, Tim Banks, Jennifer Kosty, Bharat Guthikonda; Neurosurgery, LSUHSC, Shreveport

P059: ECONOMICS OF THE TREATMENT OF CRANIOSPINAL CHORDOMA AND CHONDROSARCOMA AND THE FEASIBILITY OF USING THE BUNDLED PAYMENT MODEL  • Zaid Aljuboori, MD, Beatrice Ugiliveneza, PhD, Norberto Andaluz, MD, Maxwell Boakye, MD, MPH/MA, Brian Williams, MD; University of Louisville

P060: AN ORBITAL FLOOR IMPLANT ANGLATION GUIDE WITH 3D PRINTED CUSTOMIZATION  • Henry Bahr, BS, Giancarlo A Garcia, MD, Emily Charlson, MD, Andrea Kossler, Benjamin P Erickson; Stanford University School of Medicine, Stanford, CA; Byers Eye Institute, Stanford University School of Medicine, CA

P061: SURGICAL STRATEGIES USING EXTENDED ENDOSCOPIC TRANSSPHENOIDAL APPROACH FOR CRANIOPHYRNYGIOMA: SINGLE CENTER EXPERIENCE  • Masahiko Tosaka, Rei Yamaguchi, Masanori Aihara, Takaaki Miyagishima, Yuhei Yoshimoto; Gunma University Graduate School of Medicine

P062: ENDOSCOPIC ENDONASA TRANSSPHENOIDAL SURGERY FOR CRANIOPHYRNYGIOMAS: PEARLS AND PITFALLS FROM A LARGE CASE SERIES  • Andrew B Boucher, MD, Sarah Newman, BS, Bray P David, MD, Adriana G Ioachimescu, MD, PhD, FACE, Nelson M Oyesiku, MD, PhD, FACS; Emory University School of Medicine

P064: ENDOVASCULAR ENDOASIAL SURGERY OF CRANIO-PHYRNYGIOMAS: A CASE SERIES  • Bakhtriyar Pashaev, MD, Dmitriy Bochkarev, MD, Valeriy Danilov, MD, Andrey Alekseev, MD, Gulnar Vagapova, MD; 1Regional Clinical Diagnostic Center, 2Kazan Medical State University, 3Kazan Medical State Academy

P066: MINIMALLY INVASIVE TUBULAR APPROACH FOR OCCIPITAL CONDYLAR BIOPSY AND RESECTION  • Andrew Platt, MD, Melissa Stamates, MD, Ricky Wong, MD; University of Chicago, Evanston Hospital

P067: RETRO-ODONTOID INTRADURAL SYNVOIAL CYST DE-COMPRESSED VIA AN ENDOSCOPE-ASSISTED FAR LATERAL APPROACH C1-C2 HEMILAMINECTOMY WITHOUT FUSION: USE OF DENTICULATE LIGAMENT AS INTRAOPERATIVE LANDMARK  • Christos F Deamont, DO, Michael Fana, MS, Donald Labarge, MD, Sunil Manjila, MD; 1North Community Hospital, 2McLaren Bay City Hospital

P068: INFEROLATERAL TRANSRBITAL APPROACH TO THE PETROUS Apex: AN ADJUNCTIVE APPROACH TO THE EEA  • Moustafa Ali, Janmais Marin, MD, Ricardo Carrau, MD, Professor of Otolaryngology; Ray Cho, MD, Ricardo Carrau, MD, Professor of Otolaryngology; Oh State University, 2Assiut University, Egypt

P069: TRANSRBITAL APPROACH TO THE THE INTERNAL CAROTID ARTERY: A NOVEL ADJUNCTIVE APPROACH TO
THE EEA - Moustafa Ali, MD, PhD, Ricardo L Carrau, MD, Professor Of Otolaryngology, Ankara University, Ankara, Turkey; Daniel Prevedello, MD, Professor Of Neurosurgery, Johns Hopkins School of Medicine, Baltimore, Maryland, US; Bradley A Otto, MD, Associate Professor Of Otolaryngology, Johns Hopkins University School of Medicine, Baltimore, Maryland, US.

P070: QUANTIFICATION AND MANAGEMENT OF MINIMALLY INVASIVE TECHNIQUES TO THE INFRATEMPORAL FOSSA - Moustafa Ali, MD, PhD, Ricardo L Carrau, MD, Professor Of Otolaryngology, Ankara University, Ankara, Turkey; Daniel Prevedello, MD, Professor Of Neurosurgery, Johns Hopkins School of Medicine, Baltimore, Maryland, US; Bradley A Otto, MD, Associate Professor Of Otolaryngology, Johns Hopkins University School of Medicine, Baltimore, Maryland, US.


P073: DO WE NEED PROPHYLACTIC ANTIINFECTION API IN ENDOSCOPIC TRANSSEQOIDINAL PITUITARY SURGERY? - Ioana D Moldovan, MD, MSc, Charles Agbi, MD, Shauny Kilty, MD, Fahad Alkherayf, MD, MSc, Ottawa Hospital Research Institute, University of Ottawa, Canada.

P074: ENDOSCOPIC ENDONASAL APPROACH TO THE ORBIT: AN ANATOMICAL AND CLINICAL STUDY - Matteo Zoli, MD, Thiago Albonette, MD, Giuliano Schmidt Bertazzo Silveira, MD, Rafael Martinez-Perez, MD, Gustavo Guimarães Rangel, MD, Mostafa Shahein, MD, PhD, Marcus Zachariah, MD, PhD, Douglas Hardesty, MD, Bradley A Otto, MD, Ricardo L Carrau, MD, Daniel M Prevedello, MD, Department of Surgery, The Ohio State University, Columbus, Ohio, USA.

P075: ENDONASAL ENDOSCOPY MANAGEMENT OF A CRANIOFACIAL CANAL SELLENOENCEPHALOCOELE IN A SIX-MONTH-OLD PATIENT - Hazan Basak, MD, Suha Beton, Assoc Prof, Cem Meco, Prof, Ankara University, Turkey; Dick Velders, MD, PhD, Anna Fakra, MD, PhD, Netherlands; Adam J. Brechman, MD, PhD, Department of Neurosurgery, Washington University School of Medicine, St. Louis, Missouri, USA.

P076: ENDOSCOPIC APPROACH OF METASTATIC RENAL CLEAR CELL CARCINOMA IN INFRATEMPORAL FOSSA - Hana Caroline Morais Higa, MD, Miguel Soares Tepedino, MD, PhD, Daniel Herchenhorn, MD, PhD, Ricardo José Lopes da Cruz, MD, Policlinica de Botafo, Rio de Janeiro, Brazil; Centro de Oncologia de D’Or, Rio de Janeiro, Hospital de Oncologia de D’Or, Rio de Janeiro, UHG, Rio de Janeiro.

P077: EXPANDED EXPOSURE AND DETAILED ANATOMIC ANALYSIS OF THE SUPERIOR ORBITAL FISSURE AND THE ASSOCIATED NEUROVASCULAR STRUCTURES - Lifeng Li, Nyall R. London Jr., Daniel M Prevedello, Ricardo L Carrau, MD, Department of Otolaryngology-Head & Neck Surgery, Johns Hopkins School of Medicine, Baltimore, Maryland, US; Department of Neurological Surgery, The James Cancer Hospital and Solove Research Institute, The Ohio State University, Columbus, Ohio, USA.

P078: COMPARISON OF ENDOSCOPIC TRANSTHOMIAL AND PELVIC APPROACHES FOR EXPOSURE OF THE MEDIAL INTRACRANIAL SPACE: A CADAVERIC STUDY - Lifeng Li, Nyall R. London Jr., Daniel M Prevedello, Ricardo L Carrau, MD, Department of Otolaryngology-Head & Neck Surgery, Johns Hopkins School of Medicine, Baltimore, Maryland, US; Department of Neurological Surgery, The James Cancer Hospital and Solove Research Institute, The Ohio State University, Columbus, Ohio, USA.

P079: OROPHARYNGEAL RECONSTRUCTION AFTER TRANSORAL ROBOTIC RADICAL TONSILLECTOMY: WHEN RECONSTRUCTION IS INDICATED? - Katherine P Lipinski, BA, Randal S Ruffner, MD, Karthik S Sha stri, MD, Lisa Galati, MD, Carlos D Pinheiro-Neto, MD, PhD, Albany Medical College, Albany, New York, US; Division of Otolaryngology / Head and Neck Surgery, Department of Surgery, Albany Medical College, Albany, New York, US.

P080: TRANSSEPTAL TRANSEQOIDINAL APPROACH TO HYPOPHYSISCTOMY: COMPARISONS OF SINONASAL QUALITY OF LIFE AND COMPLICATIONS - Alexander Zhu, Jonathan Simmonds, MD, Brian Duff, MD, Brown University, Tufts University.


P082: ENDOSCOPIC ENDONASAL TRANSTUBERCULUM TRANSLAMUS APPROACH FOR RESECTION OF GIANT PITUITARY ADENOMA: THE SECOND FLOOR STRATEGY TO AVOID POSTOPERATIVE PITUITARY APOPLEXY - Dante L Pezzutti, BS, Daniel M Prevedello, MD, The Ohio State University College of Medicine.

P083: ENDOSCOPIC ENDONASAL BENETRATION AND MARSUPIALIZATION OF PETROUS APEX CHOLESTEROL GRANULOMAS USING SILASTIC CIGARETTE STENT-ASSISTED NASOSEPTAL FLAP - Christopher Markosian, BA, Kevin Zhao, DO, Grant Arzumanov, DO, Pankaj Agarwalla, MD, Giant Lin, MD, Wayne D Hseuh, MD, Jean A Eloy, MD, James K Liu, MD, Rutgers New Jersey Medical School.

P084: USE OF ENDOSCOPIC TECHNIQUE IN RESECTION OF TRIGEMINAL SCHWANNOMA - Alice E Huang, Garret W Choby, MD, Jacob Dey, MD, Matthew L Carlson, MD, Jamie J Van Gompel, MD, Janalee K Stokken, MD, Mayo Clinic School of Medicine, Mayo Clinic Department of Otolaryngology, Mayo Clinic Department of Neurosurgery.

P085: THE ROLE OF ENDOSCOPIC ENDONASAL APPROACH TO THE AXIS COMBINED WITH INFERIOR CLIVECTOMY AND POSTER LISTINGS (Cont.)
P096: MORPHOMETRIC DATA ON THE WORKING ANGLE AND AREA OF NEUROSURGICAL EXPOSURE FOR ANTERO-MEDIAL SKULL BASE LESIONS USING EXTENDED ENDO-SCOPIC ENDONEUROSOFT TRANSCLIVAL APPROACHES: VALIDATION USING AMMIRATI MANEUVERABILITY GRADING SYSTEM AND NEURONAVIGATION. - Giuliano S Bertazzo-Silveira, MD1, Sunil V Manjila, MD2, Rafael Martinez-Perez, MD, Thiago F Albonette, MD, Ricardo L Carrau, MD, Daniel M Prevedello, MD1, The Ohio State University Wexner Medical Center, Department of Neurological Surgery, 2Department of Neurosurgery, McLaren Hospital, Bay Region, Bay City MI, USA, 3The Ohio State University Wexner Medical Center, Department of Otolaryngology and Head and Neck

P086: MORPHOMETRIC DATA ON THE WORKING ANGLE AND AREA OF NEUROSURGICAL EXPOSURE FOR ANTERO-MEDIAL SKULL BASE LESIONS USING EXTENDED ENDO-SCOPIC ENDONEUROSOFT TRANSCLIVAL APPROACHES: VALIDATION USING AMMIRATI MANEUVERABILITY GRADING SYSTEM AND NEURONAVIGATION. - Giuliano S Bertazzo-Silveira, MD1, Sunil V Manjila, MD2, Rafael Martinez-Perez, MD, Thiago F Albonette, MD, Ricardo L Carrau, MD, Daniel M Prevedello, MD1, The Ohio State University Wexner Medical Center, Department of Neurological Surgery, 2Department of Neurosurgery, McLaren Hospital, Bay Region, Bay City MI, USA, 3The Ohio State University Wexner Medical Center, Department of Otolaryngology and Head and Neck

P087: ENDOSCOPIC ENDONEUROSOFT SURGERY (EES) FOR CRANIOPHARYNGIOMAS: EXPERIENCE OF THE NEUROSURGERY INSTITUTE DR. ALFONSO ASENO, CHILE. - Patricio Sepulveda, MD, Matias Gomez, MD, Homero Sariego, MD, Patricia Walker, MD, Cristian Naudy, MD; Neurosurgery Institute Dr. Alfonso Aseno

P088: GIANT OSSIFYING FIBROMA OF THE ETMHOID SINUS, ORBIT AND ANTERIOR SKULL BASE: ENDO-SCOPIC ENDONEUROSOFT APPROACH - Danielle de Lara1, Thiago B Sonego, MD2, Beatriz Sartori, MD, Alaina E Sordi1, João C Valim1; 1Universidade Federal de Santa Catarina, 2Hospital Santa Isabel

P092: SKULL BASE TUMORS TREATED VIA ENDO-SCOPIC APPROACHES. CASE SERIES. - Bakhitvar Pashaev, MD1, Dmitriy Bochkarev, MD1, Valery Danilov, MD2, Aleksei Alekseev, MD1, Gulnar Vagapova, MD2, Vladimir Krasnozhen, MD1, 1Interrregional Clinical Diagnostic Center, 2Kazan Medical State University, 3Kazan Medical State Academy

P093: INTEGRATION OF AN ENHANCED RECOVERY AFTER ANESTHESIA PROGRAM FOR PATIENTS UNDERGOING SKULL BASE TUMOR SURGERY - Stephanie Flukes, MD, Ilya Lauffer, MD, Martin Hanson, MD, Jennifer Cracchiolo, Eliza Geer, MD, Vivian Tabar, MD, Marc A Cohen, MD; Multidisciplinary Pituitary and Skull Base Tumor Program, Memorial Sloan Kettering Cancer Center

P094: ENDO-SCOPIC REMOVAL OF A RETAINED BULLET FROM THE PLANUM SPHENOIDALE - William C Harris, MD, MS1, Edward D McCoull, MD, MPH1, 1Tulane University Department of Otorhinolaryngology, 2Tulane University Department of Otorhinolaryngology and Ochsner Clinic Foundation Department of Otorhinolaryngology

P095: ENDO-SCOPIC SURGERY FOR TUMORS IN AND AROUND THE THIRD VENTRICLE - Kenichi Oyama1, Tosho Hirohata, Keisuke Onoda, Shigeyuki Tahara2, Akira Teramoto3, Akio Morita4, Akira Matsuno1, 1Department of Neurosurgery, Teikyo University School of Medicine, 2Department of Neurological Surgery, Nippon Medical School, 3Shonan University of Medical Science

P097: ENDO-SCOPIC ENDONEUROSOFT FREE FLAP RECONSTRUC-
P107: INTER-RATER RELIABILITY AND ACCURACY OF CISS VERSUS CONTRASTED TIBI FOR THE VIBES OF OPTIC CANAL INVASION IN TUBERCULUM SELLA MINI-GOMAS - Hamid Borghaei-Razavi, Bahaeddin A Muhsen, Ingrid Wu, Alankrita Raghavan, Jenny Bullen, Christopher Karakashis, Sarah Stock, Matthew Poturaliski, Jonathan Lee, Varun Kshettry, Pablo Recinos; Department of Neurosurgery, Cleveland Clinic Florida, Weston, Florida, Imaging Institute, Cleveland Clinic, Cleveland, Ohio, Department of Neurosurgery, Cleveland Clinic, Cleveland, Ohio

P108: TOLOSA HUNT SYNDROME: CASE REPORT - Jesus Gimeno Hernandez, MD, PhD, Ricardo Ginestal Lopez, MD, PhD, Marta Vanesa Garcia Yepes, MD, Alberto Francisco Gomez Esteban, MD, Pablo Perez Alonso, MD, Ana Sanchez Prieto, MD, Rosario Garcia Monescillo, MD, Maria Cruz Iglesias Moreno, MD, PhD; Hospital Clínico San Carlos


P110: OUTCOMES OF EARLY FUNCTIONAL ENDOSCOPIC SINUS SURGERY FOR ORBITAL COMPLICATIONS OF ACUTE RHINOSINUSITIS - Saangyoung E Lee, BS, Mark W Gelpi, MD, William C Brown, MD, Adam M Zanation, MD, Brett A Senior, MD, Charles S Ebert Jr, MD, MPH, Adam J Kimple, MD, PhD, Brian D Thorp, MD; University of North Carolina at Chapel Hill Department of Otolaryngology/Head and Neck Surgery

P111: PAIN IS TEMPORARY, EBV IS FOREVER: EBSTEIN-BARR VIRUS-ASSOCIATED LYMPHOPROLIFERATIVE DISORDER CAUSING TRIGEMINAL NEUROPATHY - Cheyanne Silver, MD, Lucas P Carlstrom, MD, PhD, Christopher S Graffeo, MD, Avital Perry, MD, Michael J Link, MD; Department of Otorhinolaryngology, Mayo Clinic, Department of Neurologic Surgery, Mayo Clinic

P112: FACT IS STRANGER THAN FICTION: NOCARDIA FARCAUSING TRIGEMINAL NEUROPATHY - Kristen M Scheitler, MD, Lucas P Carlstrom, MD, Avital Perry, MD, Michael J Link, MD; Department of Otorhinolaryngology, Mayo Clinic

P114: EVALUATING THE CLINICAL, MEDICOLEGAL, AND ECONOMIC IMPACT OF CONTINUOUS TRACKING OF ACUTE TIDISCIPLINARY SKULL BASE CONFERENCE DISEASE AND PATIENT METRICS - Perry T Mansfield, MD, FRCSC, Hannah G Goldman, BS, Kathryn M Liang, Allison A Nguyen, Riley C Henderson; Sentia Clinic

P115: QUALITATIVE ASSESSMENT OF INTRANASAL PRESSURES DURING INCENTIVE SPIROMETRY - Swar Vimawala, BS, Erin Reilly, MD, Colin Huntley, MD, Mauritius Boon, MD, Gurston Nyaugis, MD, Marc R Rosen, MD, James Evans, MD, Mindy R Rabinowitz, MD; Cooper Medical School of Rowan University, Thomas Jefferson University Hospital - Department of Otolaryngology Head and Neck Surgery, Thomas Jefferson University Hospital - Department of Neurological Surgery

P116: ANATOMIC CONSIDERATIONS OF MICROVASCULAR FREE TISSUE RECONSTRUCTION OF CLIVAL DEFECTS: EXPANDING THE ALGORITHM FOR SKULL BASE RECONSTRUCTION IN ENDOSCOPIC ENDONASAL SURGERY - Leila J Mady, MD, PhD, MPH, Thomas M Kaffenberger, MD, Katie L Melder, MD, Paul A Gardner, MD, Carl H Snyderman, MD, Shaua Sridharan, MD, Eric W Wang, MD; University of Pittsburgh Medical Center

P117: PRIMARY DURAL REPAIR USING TITANIUM MICROCLIPS FOLLOWING LATERAL SKULL BASE SURGERY - Cameron K Milton, BS, Panayiotis Pelargos, MD, Ali Palejwala, MD, Griffin Ernst, MD, Rachad Mhaweji, MD, Greg A Krempl, MD, Alexander C Bien, MD, Chad A Glenn, MD; University of Oklahoma Health Sciences Center

P118: VERTICAL VECTOR SURGICAL KNOT IN ENDOSCOPIC EN DONASAL SURGERY AND REPAIR: AN EXONASAL KNOT FOR ENDONASAL APPLICATION - Karam Asmaro, MD, Jack Rock, MD, John Craig, MD; Henry Ford Health System

P119: FENESTRATION OF A SYMPTOMATIC INTRASELLAR ARACHNOID CYST THROUGH AN EYELID INCISION - Zaid Aljuoobi, MD, Jeremy Clark, MD, Brian Williams, MD; University of Louisville

P120: PREVALENCE OF PEDIATRIC ORBITAL ROOF FRACTURES AS A FUNCTION OF ORBITAL DIMENSIONS - Stephen C Dryden, MD, Adrianna Eder, Andrew G Meador, MD, Mason Schofield, James C Fleming, MD, FACS, Brian T Fowler, MD; University of Tennessee Health Science Center, Hamilton Eye Institute

P121: SKULL BASE APPROACHES TO CEREBROVASCULAR PATHOLOGIES: SURGICAL STRATEGIES AND OUTCOME ANALYSIS - Mohsen Nouri, MD, Julia R Schneider, Amrit K Chiluwal, MD, Timothy C White, MD, Amir R Dehdashi, MD; Department of Neurosurgery, North Shore University Hospital, Northwell Health, Manhasset, New York

P122: ROLE OF INTRAOPERATIVE MRI IN ENDOSCOPIC EN DONASAL TRANSPHENO IDAL PITUITARY SURGERY - Yosef Dastaagirzada, MD, Carolina G Benigni, MD, Julia Bevilacqua, AGACNP-BC, ANPCC, Jason Gurewitz, BA, John G Golfinos, MD, Dimitris Placantonakis, MD, Chandra Sen, MD, Jafar Jafar, MD, Sirish Fatterpekar, MD, Seth Lieberman, MD, Rich Lebowitz, MD, Donato Pacione, MD; NYU Langone Medical Center, University of Miami

P123: FRAMELESS STEREOTACTIC PLACEMENT OF BRACHYTHERAPY SEEDS WITHIN A PITUITARY ADENOMA VIA ENDOSCOPIC, EN DONASAL APPROACH: A TECHNICAL NOTE - Aaron R Plitt, MD, Ashleigh Halderman, MD, Robert Timmerman, MD, Samuel L Barnett, MD; UT Southwestern

P124: ROLE OF THE EXTRADURAL ANTERIOR CLINIDECTOMY TO APPROACH THE PARAACLINOID REGION USING MINIMALLY INvasive APPROACHES: AN ANATOMIC STUDY - Rafael Martinez-Perez, Thiago Albonette-Felicio, Giuliano Silveira-Bertazzo, Marcus Zachariah, Douglas Hardesty, Ricardo Carrau, Daniel Prevedello; Wexner Medical Center, The Ohio State University

P127: ANATOMIC ASSESSMENT OF THE LIMITS OF AN ENDOSCOPICALLY-ASSISTED RETROLABYRINTHINE APPROACH TO THE INTERNAL AUDITORY CANAL - Thomas J Muellerman, MD, Anne K Maxwell, MD, Kevin A Peng, MD, Derald E Brackmann, MD, Gregory P Lekovic, MD, PhD, Gautam U Mehta, MD; House Ear Institute

P128: FROM CHOLESTEATOMA TO SQUAMOUS CELL CARCINOMA: A CASE REPORT - Juan Carlos Yanez-Siller, Carissa Wentland, DO, Norman S Litofsky, MD, Arnaold L Rivera, MD; University of Missouri-Columbia
P129: THE RETROLABYRINTHINE PRE-SIGMOID APPROACH: AN UNDERUTILIZED APPROACH FOR SAFE RESECTION OF EXPANSIVE CP ANGLE TUMORS - Jacob Ruzevick, MD, Sam Emerson, MD, PhD, Kate Carroll, MD, Manuel Ferreira, MD, PhD; University of Washington

P130: ANATOMICAL STEP-BY-STEP DISSECTION OF COMPLEX SKULL BASE APPROACHES FOR TRAINEES: SURGICAL ANATOMY OF THE ANTERIOR PETROSA APPROACH - Laura Salgado-Lopez, MD; Christopher S Graffeo, MD, Lucas P Carlstrom, MD, PhD; Avital Perry, MD, Carlos D Pinheiro-Neto, MD, PhD; Collin L W Driscoll, MD; Michael J Link, MD; Maria Peris-Celda, MD, PhD; Department of Neurosurgery, Albany Medical Center, Albany, NY, Department of Neurologic Surgery, Mayo Clinic, Rochester, MN, Division of Otolaryngology and Head and Neck Surgery, Department of Surgery, Albany Medical Center, Albany, NY, Department of Otolaryngology, Mayo Clinic, Rochester, MN

P131: OBJECTIVE QUANTIFICATION OF HEARING LOSS IN PATIENTS WITH SUPERIOR SEMICIRCULAR CANAL DEHISCENCE. - Quentin Conron, MD; Dillon Dojcin, RS, Shelby Willis, BS, Michelle Hong, BS, Courtney Duong, BS, Meachelle Lum, Leslie Hwang, Taranjit Kaur, Tyler Miao, Michael Johannis, Alexis French, Isaac Yang, MD; University of California, Los Angeles

P132: THE ASTERION TO TRANSVERSE PROCESS OF THE ATLAS LINE AS A SURGICAL LANDMARK: ANATOMICAL AND RADIOLOGICAL STUDY - Jafar Basma, Dom E Mahoney, Christos Anagnostopoulos, L, Madison Michael, Jeffrey M Sorenson, Nickauls R Khan, Sanjeet Rangarajan, Angelo Pichierri; Department of Neurosurgery, University of Tennessee Health Science Center, Memphis, Tennessee, Faculty of Health Sciences, University of Bristol, Bristol, United Kingdom, Department of Neurosurgery, North Bristol Trust, Bristol, United Kingdom, Department of Otolaryngology, University of Tennessee Health Science Center, Memphis, Tennessee

P133: GLOBLASTOMA IN THE CEREBELLOPONTINE ANGLE IN A PATIENT WITH NEUROFIBROMATOSIS TYPE I: A CASE REPORT AND REVIEW OF THE LITERATURE - Mohammad K Shukairy, BS, Andrea Ziegler, MD; Douglas Anderson, MD, John Leonetti, MD; Wayne State University School of Medicine, Loyola University Medical Center

P134: ANTIBIOTIC USE IN LATERAL SKULL BASE SURGERY: A SURVEY OF THE NORTH AMERICAN SKULL BASE SOCIETY - K L Li, C H Fang, V S Haw, V Agarval, V R Khetttri, E Billie; N A Abaie, E L McKean, W M Abuzeid, H S Moskowitz; Department of Otorhinolaryngology-Head and Neck Surgery, Albert Einstein College of Medicine, Bronx, NY, Department of Neurosurgery, Albert Einstein College of Medicine, Bronx, NY, Department of Neurosurgery, Cleveland Clinic, Cleveland, OH, Department of Biostatistics, University of Michigan, Ann Arbor, MI, Department of Otolaryngology-Head and Neck Surgery, University of Michigan, Ann Arbor, MI

P135: ADVANCED CUTANEOUS SQUAMOUS CELL CARCINOMA EXTENDING TO THE TEMPORAL BONE - Michael Schachtel, Ben Panizza, Arturo Solares, Mitesh Gandhi, Mark Midwinter, James Bowman; Princess Alexandra Hospital, Brisbane, Emory University Hospital, Atlanta, University of Queensland, Brisbane

P136: PERINEURAL SPREAD OF THE FACIAL NERVE FROM CUTANEOUS SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK - EPIDEMIOLOGY AND SURVIVAL OUTCOMES - Michael Schachtel, Ben Panizza, James Bowman, Mitesh Gandhi; Princess Alexandra Hospital, Brisbane

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P138: POPULATION-BASED DATABASE SURVIVAL ANALYSES OF INTRACRANIAL Meningiomas. - Zaid Aliuobori, MD, Ahmad Alhouri, MD, Alexandra Schaber, APRN, Shiao Woo, MD, Eyas Hattab, MD, Mehran Yusuf, MD, Megan Nelson, MD, Norberto Anduluz, MD, Dale Ding, Brian Williams, MD; University of Louisville

P141: CHROMOSOME INSTABILITY AND TRANSCRIPTOMIC SUBPOPULATIONS UNDERLIE INTRATUMOR HETEROGENEITY IN MENINGIOMA - Stephen T Maqill, MD, PhD, Harish N Vasudevan, MD, PhD, Kyounghoo Seo, S. John Liu, PhD, Stephanie Hilz, PhD, Javier E Villanueva-Meyer, MD, Abrar Choudhury, Benjamin Demare, Steve E Braunstein, MD, Nancy Ann Oberheim Bush, MD, PhD, Manish K Aghi, MD, PhD, Philip V Thodosopoulos, MD, Penny K Sneed, MD, Adam R Abate, PhD, Mitchell S Berger, MD, Michael W McDermott, MD, Daniel A Lim, MD, PhD, Erik M Ullian, MD, PhD, Joseph F Costello, PhD, David R Raleigh, MD, PhD; University of California, San Francisco

P142: MIDDLE FOSSA MENINGIOMA PRESENTING WITH EXTERNAL AUDITORY CANAL MASS, CONDUCTIVE HEARING LOSS, AND FACIAL WEAKNESS - Joseph Lockwood, MD, Kendra Harris, MD, Rizwan Aslam, DO, Peter Amenta, MD, Neal Jackson, MD; Tulane Medical Center

P144: ENDOSCOPIC ENDONASAL TREATMENT OF FRONTAL SINUS Meningoencephalocele - Jesus Gimeno Hernandez, MD, PhD, Carla Fernandez Garcia, MD, Melchor Saiz Pardo-sanz, MD, Manuel Gomez Serrano, MD, Eduardo Castillo Serrano, MD, Andrea Lopez Salcedo, MD, PhD; Hospital Clinico San Carlos

P145: MANAGEMENT OF CHOLESTEATOMA AND TEGMEN DEHISCENCE: COMPLEXITIES AND NUANCE - Isaac D Erbele, MD, Gauri Mankekar, MD, PhD; Moises A Arriaga, MD; Louisiana State University Health Sciences Center, Louisiana State University Health Sciences Center Shreveport

P146: ENDOSCOPIC MICROVASCULAR DECOMPRESSION FOR CARDIAC SYCNOPE/ARRHYTHMIA & VASOGLOSSOPHARYNGEAL NEURALGIA - Rachel Blue, MD, Michael F Spadola, MD, Michael McAree, BS, John YK Lee, MD; University of Pennsylvania, Rowan School of Medicine

P147: TEFLON® OR IVALON®: A SCOPING REVIEW OF IMPLANTS USED IN MICROVASCULAR DECOMPRESSION FOR TRIGEMINAL NEURALGIA - Elliot Pressman, BS, BA, R. Tushar Jha, MD, Gleb Zavadskiy, MS, Jay I Kumar, MD, MBA, Ivo Petro, MD, Harry van Loveren, MD, Jamie J van Gompel, MD, Siviero Agazzi, MD; Department of Neurosurgery and Brain Repair, University of South Florida, Tampa, FL, USA, Muma College of Medicine, University of South Florida, Tampa, FL, Department of Neurosurgery, Mayo Clinic, Rochester, MN

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P150: RETRIEVAL OF AN INTRACRANIALY MIGRATED DENTAL INJECTION NEEDLE THROUGH THE FORAMEN OVALE USING AN EXTRA-DURAL APPROACH - Salah Aoun, Tarek El Ahmadieh, MD, Vin Shen Ban, MD, Hunt Batjer, MD, Sam Barnett, MD; The University of Texas Southwestern


P152: THE VALUE OF 68Ga-DOTATATE PET/CT IN SINO-NASAL NEUROENDOCRINE CARCINOMA MANAGEMENT AND DETECTION OF LOCAL AND DISTANT METASTASES: CASE STUDY AND REVIEW OF LITERATURE - Katherine Liu, Sen Ninan, David Goldrich, Andrei Filimonov, MD, Joshua Zeiger, MD, Satish Govindaraj, MD, Alfred Marc Iloreta, MD; Mount Sinai

P153: USE OF ADVANCED DIGITAL TECHNOLOGY TO ENHANCE SUBTOTAL SWALLOWING RESECTION - Holly E Oemke, Leslie Schlachter, Joshua Bederson, Mount Sinai Hospital

P154: ENDONASAL RESECTION OF THE CARTILAGINOUS EUSTACHIAN TUBE WITH NASOSEPTAL FLAP CLOSURE FOR REFRACTORY CSF FISTULA FOLLOWING PREVIOUS MASTOID AND MIDDLE EAR OBSTRUCTION - Stephen Hernandez, MD, Vilija Vaitaitis, MD, Kevin McLaughlin, MD, Daniel Nuss, MD; Louisiana State University Health Science Center

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P156: TRIPLECTICITY - THREEFOLD OF SKULL BASE TUMOR - ATYPIC MENINGIOMA SPHENOIDAL WING LEFT, LOW GRADE OLFACTORY NEUROBLASTOMA OF SPHENOIDAL SINUSES, NEURINOMA N VIII. SIN. - A VERY RARE CASE REPORT - Jan Hemza, MD, PhD, MPA; Dpt. of Neurosurgery Faculty Hospital at Saint Ann

P157: RISK FACTORS IMPACTING OPERATIVE MORTALITY AND OVERALL SURVIVAL IN ADULTS TREATED FOR SKULL BASE CHORDOMA AND CHONDROSARCOMA - Adam L Holtzman, MD, James E Bates, MD, Christopher G Morris, MS, Michael S Rutenberg, MD, PhD, Ronny L Rotondo, MD, Daniel J Indelicato, MD, Daryosh Tavaenaipeour, MD, William M Mendenhall, MD; 1Department of Radiation Oncology, University of Florida College of Medicine, Jacksonville, FL, 2Department of Neurosurgery, University of Florida College of Medicine, Jacksonville, FL

P158: OSTEOPLASTIC FLAP WITHOUT OBLITERATION FOR MASSIVE FRONTO-ORBITAL FIBROUS DYSPLASIA: A NOVEL SURGICAL APPROACH, CASE REPORT, AND LITERATURE REVIEW - Zachary D Urdang, Sallie Long, MD, Marc Otten, MD, David Gudis, MD, OHSU, Cornell/Columbia, Columbia

P159: BENIGN GRANULAR CELL TUMOR MASQUERADING AS THYROID EYE DISEASE - Ryan Larochelle, MD, Tadhg Schempf, MD, Peter Hwang, MD, Benjamin Erickson, MD, University of Colorado, University of Pittsburgh, Stanford University

P160: UNUSUAL POSTOPERATIVE OUTCOMES OF VAGAL NERVE Lesions - Mackenzie O’Connor, BS, Kira Murphy, MD, Chandala Chitguppi, MD, Joseph Curry, MD, Adam Luginbuhl, MD, Thomas Jefferson University

P161: FACIAL NERVE SCHWANNOMA COMPLICATED BY ACUTE HEMORRHAGE POST TREATMENT WITH STEREOTACTIC RADIOTHERAPY - Mohammad Hassan A Noureldine, MD, MSc, R. Tushar Jha, MD, Ivo Peto, MD, Patrick Malafronte, MD, Kyle Allen, MD, Siviero Agazzi, MD, MBA, FACS, Johns Hopkins University School of Medicine, Boston University School of Medicine and Boston Medical Center, University of South Florida, Morsani College of Medicine, Ruffolo, Hooper & Associates, MD, P.A.

P162: SKULL BASE NODULAR FASCIITIS IN A YOUNG ADULT - Adam Kimple, MD, Charles Ebert, MD, Brian Thorp, MD, Adam Luginbuhl, MD; Children’s Hospital of Philadelphia

P163: APPLICABILITY OF EEA IN AN 2 MONTH OLD INFANT WITH NASAL CHONDROSMENCHYMAL HAMARTOMA - Gustavo C Rangel, Erin Hammersley, Annie Drapeau, Selene Koo, Patrick Walz; Nationwide Childrens Hospital - OSU

P164: PITUARY MACROADENOMA PRESENTING WITH COMPLETE NASAL OBSTRUCTION: A CASE REPORT AND LITERATURE REVIEW - Mitchell McDonough, BSc, Andre A Le Roux, MBBS, Christopher J Chin, Dalhousie Medicine New Brunswick, Dalhousie University

P165: EXPANDED ENDOSCOPIC AND PTERIONAL APPROACH - Reginald Fong, MD, Christoph Giessenauer, MD, Andrew Conger, MD, Geisinger

P166: NOVEL PINΕAL GERMINOMA MODEL DEMONSTRATES SENSITIVITY TO MTOR INHIBITION - Dominique Higgins, MD, PhD, Pavan S Upadhayayula, BA, Alexander A Sosunov, MD, PhD, George J Zanazzi, MD, PhD, Aayushi Mahajan, MS, Nelson Humala, BA, Stergios Zacharoulis, MD, Peter Canoll, MD, PhD, Guy M McKhann II, MD, Neil A Feldstein, MD, Jeffrey N Bruce, MD, Columbia University Medical Center, Dartmouth-Hitchcock Medical Center

P167: CASE REPORT OF INTERNAL CAROTID ARTERY ANEURYSM AND PITUITARY ADENOMA: CAUSAL OR BY CHANCE RELATIONSHIP? - Mostafa Shaheen, MD, Douglas A Hardesty, MD, Ricardo L Carrau, Bradley A Otto, Daniel M Prevedello, Department of Neurological Surgery, The Ohio State University, Wexner Medical Center, Columbus, Ohio, 1Department of Neurosurgery, Aswan University, 2Department of Otolaryngology, The Ohio State University, Wexner Medical Center Columbus, Ohio
P171: CYCLIC CUSHING’S DISEASE IN MIXED GANGLIOCYTOMA-PITUITARY ADENOMA TUMOR: CASE REPORT - Yury Anania, MD1, Venteicher S Andrew, MD, PhD2, Pearce M Thomas, MD, PhD2, Gardner A Paul, MD1; 1Center for Cranial Base Surgery, University of Pittsburgh, 2Department of Neurosurgery, University of Minnesota, 3Department of Pathology, University of Pittsburgh, 4Department of Neurosurgery, University of Pittsburgh Medical Center

P172: PITUITARY STALK GANGLIOGLIOMAS - Oluwaseun Omofoye, MD, MS, Griffith Harsh, MD; UC Davis

P174: THE EFFECTIVENESS OF ENDOSCOPIC ENDONASAL SURGERY FOR PITUITARY ADENOMAS: CLINICAL OUTCOMES AND POSTOPERATIVE Complications AT A SINGLE INSTITUTION - Edinon Najera, MD1, Eugenio Cardenas, MD, PhD1, Ariel Kaen, MD, PhD1, Pablo Remon, MD1, Ignacio Martin Schrader, MD1, Alfonso Soto, MD1, 1Department of Neurosurgical Surgery, Hospital Universitario Virgen del Rocio, Sevilla, Spain, 2Department of Endocrinology and Nutrition, Hospital Universitario Virgen del Rocio, Sevilla, Spain

P175: PITUITARY HYPERPLASIA CAUSING COMPLETE BITEMPORAL HEMIANOPsIA WITH RESOLUTION FOLLOWING SURGICAL DECOMPRESSION: CASE REPORT - Natayal Raviv, Tyler J Kenning, Carlos D Pinheiro-Neto, Maria Peris-Celda; Albany Medical Center

P176: TUMOR CONSISTENCY AS A PREDICTOR OF SUCCESSFUL PSEUDOCAPSULAR DISSECTION OF PITUITARY ADENOMAS - Givarpuram N Prashant, MD, Won Kim, MD, Marilene Wang, MD, Marvin Bergsneider, MD; UCLA

P177: COMPLETELY RESECTED PITUITARY MACROADENOMAS HAVE A LOW RISK OF LONG-TERM RADIOGRAPHIC PROGRESSION - Jennifer A Kosty, MD1, Yair M Gozal, MD PhD2, Mario Zuccarello, MD3, Norberto A Andaluz, MD4, Lee A Zimmerman, MD, PhD5, Bharat Guthikonda, MD; 1Department of Neurosurgery, University of Pittsburgh, 2Department of Radiology, University of Pittsburgh, 3Department of Neurology, University of Rochester, 4Department of Pathology, University of Pittsburgh, 5Department of Neurosurgery, University of Louisville, 6Mercy Health

P178: ENDOSCOPIC ETHMOID-OPTIC-JUGULO-SPHENOIDAL APPROACH TO THE CAVERNOUS SINUS IN RECURRENT INVASIVE PITUITARY ADENOMA - Rafael Martinez-Perez, Giuliano Silveira-Bertazzo, Bradley A Otto, Ricardo L Carrau, Daniel Prevedello; Wexner Medical Center, The Ohio State University

P179: POST-OPErATIVE CARE COORDINATION FOR ACOUSf TIC NEUROMA PATIENTS: IMPROVING PATIENT SATISFACTION - Allie Mains, NP, Mario Zuccarello, MD, Ravi Samy, MD, Scott Shapiro, MD; University of Cincinnati

P180: UTILITY OF POST-OPErATIVE NASAL STEROID IRRIGATION IN SINUSOSAL TUMOR PATIENTS - Theodore C Lin, BS1, Cameron P Heyd, BS2, Sylvia Horne, BS3, Auddie M Sweis, MD1, Tran B Locke, MD, Heather Ungerer, BS1, George Gardner, BS1, James N Palmer, MD1, Nithin D Adappa, MD1, 1Department of Otorhinolaryngology - Head and Neck Surgery, University of Pennsylvania, Philadelphia, PA, 2Lake Erie College of Osteopathic Medicine, Bradenton, FL, 3State University of New York Downstate Medical Center, Brooklyn, NY

P181: IMPROVED SINUSOSAL QUALITY OF LIFE OUTCOMES FOLLOWING ENDOSCOPIC ENDONASAL REPAIR OF SPONTANEOUS CEREBROSPINAL FLUID LEAKS - Peras V Ackall, MD1, Lyndon Chan, MBBS, Hons, Kevin Choi, MD, Jordan Teitelbaum, DO, Patrick Codd, MD, Ali Zomorodi, MD, Ralph Abi Hachem, MD, MSc, David W Jang, MD; Duke University Medical Center

P182: HAVE INFLUENCE OF POSTSURGERY QUALITY OF LIFE CHOICE OF SURGICAL APPROACH? - Jan Hemza, MD, PhD, PhD, MPA; Dept. of Neurosurgery Faculty Hospital at Saint Ann

P183: SINUSOSAL MORBIDITY FOLLOWING CHEMORADIATION IN NASOPHARYNGEAL CARCINOMA PATIENTS - Matthew Stewart, BS1, Chandala Chitguppi, MD, Kira Murphy, MD, Tawfiq Koury, MD1, Mackenzie O’Connor, BS1, James J Evans, MD1, Mindy Rabinowitz, MD1, Marc Rosen, MD1, Gurston C Nyquist, MD1; 1Department of Otolaryngology & Head and Neck Surgery, Thomas Jefferson University Hospital, 2Department of Neurological Surgery – Thomas Jefferson University Hospital

P184: REPEAT GAMMA-KNIFE RADIOSURGERY FOR RECURRENT GLOSSOPHARYNGEAL NEURALGIA: CASE REPORT AND LITERATURE REVIEW - Joel Kaye, BS1, Lekhaj C Daqquabati, MD1, James McInerney, MD1; Robert Wood Johnson Medical School, 2Penn State Hershey Medical Center

P185: A CURE FOR PAINS? A NOVEL APPROACH TO MANAGEMENT OF PROTON-ASSOCIATED INTERNAL NASAL STENOSIS [PAINS] - Stephanie Flukes, MD, Matthew Bott, MD, Martin Hanson, MD, Marc A Cohen, MD; Department of Surgery, Memorial Sloan Kettering Cancer Center

P186: SINUSOSAL ADENOCARCINOMA WITH NEUROENDOCRINE DIFFERENTIATION: CASE REPORT AND REVIEW OF LITERATURE. - Khalil Issa, MD1, John Madden, MD, PhD2, David Jang, MD1, AR Zomorodi, MD1, Ralph Abi Hachem, MD1; 1Department of Head and Neck Surgery & Communication Sciences, Duke University Medical Center, Durham, NC, USA, 2Department of Pathology, Duke University Medical Center, Durham, NC, USA, 3Division of Neurosurgery, Duke University Medical Center, Durham, North Carolina, USA

P187: MEDICALLY REFRACTORY CUSHING’S SYNDROME AS A PARANEOPlastic MANIFESTATION OF ESTHESIONEUROBLASTOMA - Jordan A Malenke, MD, Justin Morse, MD, Lola Chambless, MD, Justin Turner, MD, PhD; Vanderbilt University Medical Center

P188: AGGRESSIVE NEURO-CRANIAL JUVENILE PSAMMO-MATOID OSSIFYING FIBROMA - Cheyanne M Silver, MD1, Lucas P Carlstrom, MD, PhD2, Christopher S Graffeo, MD2, Avital Perry, MD1, Garret W Choby, MD1, Michael J Link, MD1; 1Department of Otorhinolaryngology, Mayo Clinic, 2Department of Neurologic Surgery, Mayo Clinic

P189: AGGRESSIVE JUVENILE ANGIOfIBROMAS - Steven A Newman, MD; Spencer Payne, MD, Jose Mattos, MD, University of Virginia

P190: NON-NEOPLASTIC ETIOLOGIES OF EROsIVE DISEASE OF THE FRONTAL AND ETHMID SINUSES. - Jose L Mattos, MD, Steven A Newman, MD, Mark J Jameson, MD; University of Virginia

P191: NASAL OBSTRUCTION IN A PATIENT WITH SCHWANNOMATOSIS - Thomas Yusin, BS1, Cinthia Orlov, MD2, Debraj Mukherjee, MD, MPH1, Nicholas R Rowan, MD2; 1Tulane University School of Medicine, 2Johns Hopkins Medical Institute

P192: SINUSOSAL UNDIFFERENTIATED CARCINOMA (SNUC) FOLLOWING RADIATION FOR ESTHESIONEUROBLASTOMA - Kristen M Scheitler, MD, Salomon Cohen Cohen, MD, Jeffrey Janus, MD, Garret Choby, MD, Jamie J Van Gompel, MD; Mayo Clinic
P192: PRIMARY NEUROENDOCRINE TUMOR OF THE SPHENOID SINUS: THREE CASE REPORTS - Idoya Zazpe, Daniel De Frutos, Carlos Beaumont, Coro Zubimendi, Juan Carlos Garcia, Onditza Arechaga; Hospital Of Navarre

P194: OUTCOMES OF AGGRESSIVE SURGICAL RESECTION OF SINONASAL INVERTED PAPILLOMA WITH REMOVAL OF BONE AT THE ATTACHMENT SITE - Yufan Lin, Carlos D Pinheiro-Neto, MD, PhD; Albany Medical Center

P195:ECTOPIC OLFACTORY NEUROBLASTOMA: A CASE REPORT - Gregory D Disse, Matthew Bobinski, MD, PhD, Mirna Lechpammer, MD, PhD, Toby O Steele, MD, Kirash Shahlaie, MD, PhD; 1Department of Neurological Surgery, University of California, Davis, 2Department of Radiology, University of California, Davis, 3Department of Pathology, University of California, Davis, 4Department of Otolaryngology, University of California, Davis

P196: BIPHENOTYPIC SINONASAL SARCOMA A NEWLY RECOGNIZED SINONASAL NEOPLASM: CASE REPORT AND REVIEW OF THE LITERATURE - Somtochi Okafar, BA, Ashleigh Halderman, MD, Justin Bishop, MD, Matthew Ryan, MD, Bradley Marple, MD; University of Texas Southwestern Medical Center

P197: ANTERIOR CRANIAL BASE MENINGEAL HEMANGIOPERICYCTOMA - Jesus Gimeno Hernandez, MD, PhD, Juan Manuel Revuelta Barbero, MD, Carla Fernandez Garcia, MD, Andres Camilo Vargas Jimenez, MD, Manuel Gomez Serrano, MD, PhD, Pablo Sarrio Solera, MD, PhD, Diana Hernanez Hidalgo, MD, Melchor Saiz Pardo-sanz, MD, Maria Cruz Iglesias Moreno, MD, PhD; Hospital Clinico San Carlos

P198: SMARCB1-DEFICIENT SINONASAL CARCINOMA: A CASE REPORT AND SYSTEMATIC REVIEW - Sean M Parsel, DO, Basit A Jawad, MD, Edward D McCoul, MD, MPH; Tulane University, 2Ochsens Clinic Foundation

P199: MANAGEMENT OF ETHMOID BIPHENOTYPIC SARCOMA - A RARE SKULL BASE MALIGNANCY - Justin C Morse, MD, Jordan Malenke, MD, Jacob Snyder, Eric Succar, MD, Mitra Mehad, MD, Rakesh Chandra, MD, MMMC; Vanderbilt University Medical Center

P200: COMBINED SYNTHETIC AND NON-AUTOLOGOUS GASKET SEAL FOR SKULL BASE REPAIR AFTER ENDOCRINE TRANSSHENOIDEAL SURGERIES - Justin C Morse, MD, Jordan Malenke, MD, Shanein Fernandez, DO, Chris Puchi, BS, Rakesh Chandra, MD, MMMC, Naveed Chowdhury, MD, Lola Chamblees, MD, Justin Turner, MD, PhD; Vanderbilt University Medical Center

P202: COMPARATIVE ANALYSIS OF AUTOGRAFT AND XENOGRAFT BASED MULTILAYER LATERAL SKULL BASE RECONSTRUCTION FOR ENCEPHALOCELE AND CSF LEAKS - Nauman F Manzoor, MD, Douglas J Totten, BA, Kristen Yancey, MD, Alexander D Sherry, BS, Marc L Bennett, MD, David S Haynes, MD, Alejandro Rivas, MD; 1Department of Otolaryngology, Vanderbilt University Medical Center, 2Vanderbilt University School of Medicine

P203: MIDDLE FOSSA ENCEPHALOCELES TREATED VIA THE TRANSMASTOID APPROACH - Tyler Scullen, MD, Porter S Amenta, MD, Zane Freeman, DO, Mansour Mathkour, MD, Joseph Lockwood, MD, Neal Jackson, MD; Tulane University Department of Neurosurgery, 2Tulane University Department of Otolaryngology

P204: SELLAR TROUGHS TRAP DOOR TRANS-CLIVAL RECONSTRUCTION - Andrew K Wong, MD, Joseph Raviv, MD, Ricky H Wong, MD; 1Rush University, 2Northshore University HealthSystem

P205: USING THE TRANSPERNYOID/PARAPHRYNGEAL CORRIDOR FOR FREE FLAP RECONSTRUCTION OF CRANIO-ORBITAL DEFECTS: A CASE SERIES - Ricardo J Ramirez, MD, Jake J Lee, MD, Patrik Pipkorn, MD, MSCI; Washington University in St. Louis

P206: THE USE OF COMPOSITE CARTILAGOMUCOSAL NASOEPITHELIAL FLAP FOR SKULL BASE RECONSTRUCTION AFTER RESECTION OF A SUPRASELLAR MASS - Kent V Curran, Tyler J Kenning, MD, Maria Peris-Celda, MD, PhD, Carlos Pinheiro-Neto, MD, PhD; 1Albany Medical College, 2Department of Neurosurgery, Albany Medical Center, Albany, New York, 3Division of Otolaryngology/Head and Neck Surgery, Department of Surgery, Albany Medical Center, Albany, New York

P208: ANTERIOR SKULL BASE RECONSTRUCTION USING NASOEPITHELIAL FLAP: CADEVERIC FEASIBILITY STUDY - Ju Hyung Moon, MD, Kyoung Su Sung, MD, Jaejoon Lim, MD, Chang Ki Hong, MD; Severance Hospital, Yonsei University, Dong-A University Hospital, Bundang CHA Medical Center, Gangnam Severance Hospital, Yonsei University

P210: FAT AS A BIOLOGICAL DRESSING: A NOVEL ADJUNCT TO SKULL BASE RECONSTRUCTION - John M Byrne IV, BA, An Stone, BA, Margaret Tallmadge, BS, Krista Brackman, BS, Bhavani Kura, MD, Juanita Celix, MD, MPH, Amin Kassam, MD, FRCS, Sammy Khaliil, MD, Msc, FRCS; 1Aurora Research Institute, 2Aurora Neuroscience Innovation Institute

P211: MANAGEMENT OF PENETRATING ANTERIOR SKULL BASE INJURY FROM TRANS-NASAL FOREIGN BODY - Rebbecca Limb, BMBS, BMedSci, Martin Hunn, MBChb, PhD, FRACS; Alfred Hospital, Melbourne, Australia

P212: THE USE OF RESORBABLE AND INTEGRATIVE COLLAGEN SPONGES TO OBLITERATE THE INTRASELLAR SPACE AND ACHIEVE A FATLESS, SPHERICAL DURAL RECONSTRUCTION FOLLOWING TRANSSHENOIDEAL SURGERY - Won Kim, MD, Sophie Pesters, MD, Gyiarpuram Prashant, MD, Matthew Sun, MD, Jasmine Dicesare, Marilene Wong, MD, Jeffrey Suh, MD, Jivianne Lee, MD, Marvin Bergsneider, MD; UCLA

P215: GANGLIONEUROMA OF THE INTERNAL AUDITORY CANAL - Mark E Russo, MD, Emma C Celano, MD, H J Kim, MD, Amjad Anaizi, MD, Metin Ozdemirli, MD, PhD; 1Department of Otolaryngology, Georgetown University, 2Department of Otolaryngology, Georgetown University, 3Department of Pathology, Georgetown University

P216: KNOW YOUR ABCS: ANEURYSMAL BONE CYST OF THE TEMPORAL BONE - Nitesh P Patel, MD, Lucas P Carlstrom, MD, PhD, Avital Perry, Collin Driscoll, Michael J Link, Mayo Clinic
P217: GIANT RENAL CELL CARCINOMA METASTASIS TO THE SKULL BASE WITH TEMPORAL BONE INVASION: A CASE REPORT AND REVIEW OF THE LITERATURE - Lauren A Linker, MD1, Samuel H Smith, MD1, Scott Collier, MD2, L. Madison Michael II, MD1, Robert J Yawn, MD1; 1University of Tennessee Health Science Center, Department of Otolaryngology, 2University of Tennessee Health Science Center, Department of Pathology, 3University of Tennessee Health Science Center, Department of Neurosurgery

P218: DOES THE METHOD OF VISUALIZATION IMPACT THE PERFORMANCE OF A NEW SURGICAL TASK IN NOVICE SUBJECTS? - Mikael Kassam, BSc, Srikanth Chakravarthi, MD, MSc, Austin Epping, BSc, Sarah Erpenbeck, BSc, Maharaj Singh, PhD, Melanie B Fukui, MD, Amin B Kassam, MD, Richard A Rovin, MD; Aurora Neuroscience Innovation Institute

P219: MINIMALLY INVASIVE APPROACHES: A COMPARISON BETWEEN EYEBROW SUPRAORBITAL ENDOSCOPIC APPROACH AND EYELID TRANSORBITAL ENDOSCOPIC APPROACH TO ANTERIOR AND MIDDLE CRANIAL FOSSAE - Ricardo A Gomez Arroyo, MD, Yury Anania, MD, Shen Han, MD, Carl Snyderman, MD, Wang Erick, MD, Georgios Zenonos, MD, Paul Gardner, MD; Aurora Neuroscience Innovation Institute

P220: TRANSPETROSAL TRANSLABYRINTHINE APPROACH FOR OBLITERATION OF LARGE PERIMESENCEPHALIC DURAL ARTERIOVENOUS FISTULA - Darshan N Shastri, MD, Nathan Quig, MD, Brian Sindeler, MD, Deanna Sasaki-Adams, MD; University of North Carolina

P221: INTRAORBITAL ARTERIOVENOUS FISTULA MIMICKING AN ANTERIOR CRANIAL FOSSA DURAL ARTERIOVENOUS FISTULA - Hae Gi Park, MD; Severance Hospital, Yonsei University College of Medicine


P224: PREOPERATIVE EMBOLIZATION OF A GLOMUS VAGALE TUMOR RESECTED VIA THE RETROSIGMOID APPROACH - Tyler Scullen, MD1, Zane Freeman, DO2, Joseph Lockwood1, Neal Jackson, MD2, Peter Amenta, MD2; 1Tulane University Department of Neurosurgery, 2Tulane University Department of Otolaryngology

P225: UTILIZATION OF THE TRANSCOTIC APPROACH FOR SELECT CASES OF VESTIBULAR SCHWANNOMA RESECTION - Scott B Shapiro, MD, Noga Lipschitz, MD, Nathan Kemper, Garvie Kohlberg, MD, Allie Mains, MSN, FNP, CNRN, RN-FA, Myles L Pensak, MD, Joseph T Breen, MD, Mario V Zuccarello, MD, Ravi N Samy, MD; University of Cincinnati College of Medicine

P226: ENDOSCOPIC THIRD VENTRICULOSTOMY IN A PATIENT WITH GIANT BILATERAL VESTIBULAR SCHWANNOMAS - Ali O Jamshidi; Kaiser Permanente

P227: AN AUTOMATED METHOD FOR DETERMINING VESTIBULAR SCHWANNOMA SIZE AND GROWTH - Nicholas George-Jones, Kai Wang, Jing Wang, PhD, Jacob B Hunter, MD; University of Texas Southwestern Medical Center

P228: EXPLORING THE ASSOCIATION BETWEEN APPARENT DIFFUSION COEFFICIENT VALUES ON MAGNETIC RESONANCE IMAGING AND THE RESPONSE OF VESTIBULAR SCHWANNOMA TO RADIATION - Daniel E Killeen, MD1, Carlos L Perez, MD2, Rati Chikheidze, MD1, Samantha Moore, MD1, Anthony M Tolisano, MD1, Joe W Kutz, MD, FACS1, Brandon Isaacson, MD, FACS1, Jacob B Hunter, MD1; 1Department of Otolaryngology-Head and Neck Surgery, University of Texas Southwestern Medical Center, Dallas, TX, U.S.A., 2Department of Radiology, University of Texas Southwestern Medical Center, Dallas, Texas, U.S.A., 3Department of Pathology, University of Texas Southwestern Medical Center, Dallas, Texas, U.S.A.

P229: REGIONAL VARIATION IN PATIENT PARTICIPATION AND TREATMENT AMONG ACOUSTIC NEUROMA ASSOCIATION SURVEY RESPONDENTS ACROSS THE UNITED STATES - John P Marinelli, MD1, Samuel A Spear, MD, Debbie L Hahs-Vaughn, PhD2, Robert J Macielak, MD3, Michael J Link, MD3, Allison Feldman, MPA4, Chad Nye, PhD5, Matthew L Carlson, MD6; 1Department of Otolaryngology-Head and Neck Surgery, San Antonio Military Medical Center, San Antonio, TX, 2Department of Learning Sciences and Educational Research, University of Central Florida, Orlando, FL, 3Department of Otolaryngology-Head and Neck Surgery, Mayo Clinic, Rochester, MN, 4Department of Neurologic Surgery, Mayo Clinic, Rochester, MN, 5Acoustic Neuroma Association, Cumming, GA

P230: PITUITARY HEMITRANSPOSITION FOR THE RESECTION OF A PILOCYTIC ASTROCYTOMA IN A MIDDLE AGED MAN WITH MULTIPLE SCLEROSIS - Ali O Jamshidi; Kaiser Permanente

P231: IMPACT OF PETROMEATAL BONE ANGLE ON DEGREE OF TUMOR RESECTION AND FACIAL NERVE INJURY FOR VESTIBULAR SCHWANNOMAS DURING THE TRANSLABYRINTHINE APPROACH - Mohammad Hassan A Noureldine, MD, MSc1, David Aum, BSc2, Gleb Zavadskiy, PhD3, Ivo Peto, MD1, Keaton Piper, MD1, Konrad Bach, MD1, Harry van Loveren, MD1, Siviero Agazzi, MD, MBA, FACS1; Johns Hopkins University School of Medicine, Institute for Brain Protection Sciences, Johns Hopkins All Children’s Hospital, Saint Petersburg, FL, 2Department of Otolaryngology-Head and Neck Surgery, Mayo Clinic, Tampa General Hospital, Tampa, FL, 3University of South Florida Muma College of Business, Tampa, FL

P232: FUNCTIONAL OUTCOME OF SPHENOID WING MENINGIOMA SURGERY IN NIGERIA - Okezie O Kanu, MD, FWACS1, Omotayo Ojo, MD, MRCS1, Oluwemi Bankole, MD, FWACS1, Eghosa Morgan, MD, FWACS1, Babatunde Adetunmbi, MD, FWACS1, John O Olatosi, MD, FWACS1, College Of Medicine, University Of Lagos / Lagos University Teaching Hospital, 2Irrhua Specialist Hospital, Benin, Nigeria

P233: EXPLORING THE ASSOCIATION BETWEEN APPARENT DIFFUSION COEFFICIENT VALUES ON MAGNETIC RESONANCE IMAGING AND THE RESPONSE OF VESTIBULAR SCHWANNOMAS TO RADIATION - Daniel E Killeen, MD1, Carlos L Perez, MD2, Rati Chikheidze, MD1, Samantha Moore, MD1, Anthony M Tolisano, MD1, Joe W Kutz, MD, FACS1, Brandon Isaacson, MD, FACS1, Jacob B Hunter, MD1; 1Department of Otolaryngology-Head and Neck Surgery, University of Texas Southwestern Medical Center, Dallas, TX, U.S.A., 2Department of Radiology, University of Texas Southwestern Medical Center, Dallas, Texas, U.S.A., 3Department of Pathology, University of Texas Southwestern Medical Center, Dallas, Texas, U.S.A.

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P235: UTILIZATION OF THE TRANSCOTIC APPROACH FOR SELECT CASES OF VESTIBULAR SCHWANNOMA RESECTION - Scott B Shapiro, MD, Noga Lipschitz, MD, Nathan Kemper, Garvie Kohlberg, MD, Allie Mains, MSN, FNP, CNRN, RN-FA, Myles L Pensak, MD, Joseph T Breen, MD, Mario V Zuccarello, MD, Ravi N Samy, MD; University of Cincinnati College of Medicine

P236: ENDOSCOPIC THIRD VENTRICULOSTOMY IN A PATIENT WITH GIANT BILATERAL VESTIBULAR SCHWANNOMAS - Ali O Jamshidi; Kaiser Permanente

P237: AN AUTOMATED METHOD FOR DETERMINING VESTIBULAR SCHWANNOMA SIZE AND GROWTH - Nicholas George-Jones, Kai Wang, Jing Wang, PhD, Jacob B Hunter, MD; University of Texas Southwestern Medical Center
Acoustic Neuroma Education Day

Friday, February 7, 2020

Acoustic Neuroma Education Day will provide a comprehensive review of the state of the art in Acoustic Neuroma Biology, Treatment and Patient Outcomes. The program is geared for neurosurgeons, otolaryngologists and related disciplines involved in the care of these patients. The session will be divided into three components covering: Acoustic Neuroma morphology, biology and function; Acoustic Neuroma Treatment; and Acoustic Neuroma outcomes and alternative treatments.

At the conclusion of this session, attendees will be able to:

» Recognize recent developments in epidemiology, molecular genetics and imaging in treatment planning for acoustic neuroma patients.
» Choose Acoustic Neuroma treatment based on the most recent techniques available.
» Manage Acoustic Neuroma patients based on the best outcomes data available.

7:30AM-7:32AM Acoustic Neuroma Education Day
Moises Arriaga

7:32AM-7:40AM Three-Dimensional Anatomy of Acoustic Neuroma
Juan C. Fernandez-Miranda

7:40AM-7:48AM Genetics and Treatment Implications
Brad Welling

7:48AM-7:56AM Acoustic Neuroma Molecular Profiling
Ksenia A Aaron

7:56AM-8:04AM Experimental Models for Acoustic Neuroma Treatment Evaluation
Christine T Dinh

8:04AM-8:12AM Natural History of Growth
Matthew Luke Carlson

8:12AM-8:20AM Hearing in Untreated Acoustic Neuroma
Oliver F Adunka

8:20AM-8:28AM Non-Hearing Functional Outcomes in Untreated Acoustic Neuroma
Jacob B Hunter

8:28AM-8:36AM Hearing Criteria to Image for Possible Acoustic Neuroma
Joseph Paul Roche

8:36AM-8:42AM Imaging Strategies
Claudia F.E. Kirsch

8:42AM-8:50AM Audiogram and ABR in Pre-Treatment Decision Making
R Mark Wiet

8:50AM-8:58AM Vestibular Tests in Decision Making
Isaac Erbele

8:58AM-9:06AM Facial Nerve Evaluation in Decision Making
Marcos Tatagiba

9:06AM-9:35AM Moderator Discussion - Q&A
Acoustic Neuroma Education Day (Cont.)

Friday, February 7, 2020

2:54PM-3:02PM  Update on Gamma Knife: Technique and Outcomes
Jennifer A Moliterno Gunel

3:02PM-3:10PM Comparing Radiation Techniques: Cyberknife, Gamma Knife, and other Linc-Based Treatments
Joshua Matthew Sappington

3:10PM-3:25PM  Moderator Discussion - Q&A

3:25PM-4:00PM Break with Exhibitors

4:00PM-4:02PM Acoustic Neuroma Education Day - Alternative Treatments and Patient Outcomes
Moises Arriaga

4:02PM-4:10PM Avastin and Other Medical Therapies for Acoustic Neuroma
Konstantina Stankovic

4:10PM-4:18PM Visualization Alternatives: Exoscope-Endoscope-Microscope
Brandon Isaacson

4:18PM-4:26PM Treatment of Recurrences Following Radiation and Surgery
Peter Morone

4:26PM-4:34PM Acoustic Neuroma Quality of Life
Ted McRackan

4:34PM-4:42PM Facial Nerve Outcomes
Siviero Agazzi

4:42PM-4:50PM Facial Reanimation Surgery
Laura Hetzler

4:50PM-4:58PM Facial Physical Therapy and Botox
Jackie Diels

4:58PM-5:06PM Corneal Neurotization Surgery
Laura Hetzler

5:06PM-5:14PM Q&A

5:14PM-5:22PM Hearing Outcomes in Acoustic Neuroma
Erika Woodson

5:22PM-5:30PM Post-Treatment Amplification, BAHA and Cochlear Implant
Brendan P O’Connell

5:30PM-5:38PM Tinnitus after Observation, Radiation and Surgery
Yu Lan Mary Ying

5:38PM-5:46PM Balance Outcomes and Treatment Strategies with Observation, Radiation and Surgery
Richard Gurgel

5:46PM-6:00PM Q&A
Orbital Education Day

Saturday, February 8, 2020

This day will examine the anatomy, physiology, pathology, and treatment of the orbit and orbital disease. Anyone wishing to learn about how to keep the eye safe while operating nearby is welcome to attend.

At the conclusion of this session, attendees will be able to:

» Accurately diagnose orbital disease.
» Plan appropriate multidisciplinary evaluation of disease in and around the orbit.
» Prepare a comprehensive surgical, medical, and radiation plan for disease in and around the orbit.
» Manage complications of surgery in and around the orbit.

7:30AM-7:35AM  Introduction  
S Tonya Stefko
7:35AM-7:50AM  Embryology of the Orbit  
Raymond I Cho
7:50AM-8:15AM  Anatomy of the Orbit  
Mindy Robyn Rabinowitz
8:15AM-8:30AM  History of Orbital Surgery  
Steven Newman
8:30AM-8:45AM  Imaging of Orbital Disease  
Tanya Rath
8:45AM-9:00AM  Postop Pain Management in Orbital Surgery  
Ted Wladis
9:00AM-9:15AM  Not a Tumor (Orbital Inflammatory Disease)  
James Garrity
9:15AM-9:35AM  Panel Discussion of Surgical Videos  
Raymond I Cho, Ben Bleier, Carl Snyderman, & Andrei Koerbel
9:35AM-10:05AM  Break with Exhibitors
10:05AM-12:20PM  General Session
12:20PM-1:20PM  Lunch in the Exhibit Hall
1:20PM-1:35PM  Neuro-ophthalmology Exam and Treatment Planning  
Howard Krauss
1:35PM-01:50PM  Vascular Pathology in and Around the Orbit  
Dan Rootman
1:50PM-2:05PM  Surgery in the Orbit – Which Approach?  
Alessandro Paluzzi
2:05PM-2:20PM  Surgery Near the Orbit – Which Approach?  
Davide Locatelli
2:20PM-2:35PM  Orbital Preservation or Not in Sinonasal Cancer Surgery  
Jeffrey M. Sorenson
2:35PM-2:50PM  Endoscopic Orbital Anatomy
2:50PM-3:05PM  Sphenoid Wing Meningioma: Approaches and Goals  
Darlene Lubbe
3:05PM-3:25PM  Q&A
3:25PM-4:00PM  Break with Exhibitors
4:00PM-4:15PM  Radiotherapy and the Orbit  
Dukagjin M Blakaj
4:15PM-4:30PM  Complications of Orbital and Periorbital Surgery  
Somasundaram Subramaniam
4:30PM-4:45PM  Considerations of Orbital Disease/Surgery in Children  
Mike Kazim
4:45PM-5:00PM  Lacrimal Dysfunction after Skull Base Surgery  
Sang H Hong
5:00PM-5:15PM  Optic Nerve Gliomas/ONSM  
Andrei Koerbel
5:15PM-5:25PM  The Anesthetic Cornea  
Michelle Latting
5:25PM-5:50PM  Reconstruction After Orbital and Periorbital Surgery  
Eric W. Wang, Ben Bleier, Kris Moe, & Dan Rootman
5:55PM-6:00PM  Q&A
Primer Course

Friday, February 7, 2020

This course provides a broad overview of skull base pathology and both surgical and nonsurgical management of tumors affecting this region. Attendees just entering the field of skull base surgery, those wanting a refresher on different aspects of skull base surgery, and those wishing to learn different approaches or different techniques for operating in this area and avoiding and managing complications that may arise will benefit most from this session.

At the conclusion of this session, attendees will be able to:

» Select the appropriate treatment approach for specific skull base pathologies and tumor locations.
» Compare the nuances of different open and endoscopic approaches to various regions of the skull base.
» Manage both neurosurgical or rhinologic complications that may arise from skull base surgery.

1:20PM-1:25PM  Introduction
Zara M Patel

1:25PM-1:34PM  Anatomy of the Skull Base
Charles S. Ebert

1:34PM-1:37PM  Q&A
Charles S. Ebert

1:37PM-1:46PM  Radiology and Pathology of Common Skull Base Tumors and Disease Processes
Griffin D Santarelli

1:46PM-1:49PM  Q&A
Griffin D Santarelli

1:49PM-1:58PM  Patient Factors when deciding on Skull Base Treatment
Patrick Michael Colley

1:58PM-2:01PM  Q&A
Patrick Michael Colley

2:01PM-2:10PM  Selection of Approach and Treatment Goals in Skull Base Surgery
Anthony G. Del Signore

2:10PM-2:13PM  Q&A
Anthony G. Del Signore

2:13PM-2:22PM  Overview: Open Cranial Approaches to the Skull Base
John Y.K. Lee

2:22PM-2:25PM  Q&A
John Y.K. Lee

2:25PM-2:34PM  Trans-Orbital Approaches to the Skull Base
Darlene Lubbe

2:34PM-2:37PM  Q&A
Darlene Lubbe

2:37PM-2:46PM  Endoscopic Approaches to the Middle Cranial Fossa
Devyni Lal

2:46PM-2:49PM  Q&A
Devyni Lal

2:49PM-2:58PM  Endoscopic Approaches to the Posterior Cranial Fossa
Jean Anderson Eloy

2:58PM-3:01PM  Q&A
Jean Anderson Eloy

3:01PM-3:10PM  Reconstructing the Skull Base
Nithin D. Adappa

3:10PM-3:13PM  Q&A
Nithin D. Adappa

3:13PM-3:22PM  Radiosurgical Management of Skull Base Tumors
Melanie Hayden Gephart

3:22PM-3:25PM  Q&A
Melanie Hayden Gephart

3:25PM-4:00PM  Break with Exhibitors

4:00PM-4:09PM  Management of Neurosurgical Complications in Skull Base Surgery
Robert Dodd

4:09PM-4:12PM  Q&A
Robert Dodd

4:12PM-4:21PM  Management of Rhinologic Complication in Skull Base Surgery
Stacey Gray

4:21PM-4:24PM  Q&A
Stacey Gray

4:24PM-4:33PM  Post operative Neurosurgical Management
Nathan T Zwagerman

4:33PM-4:36PM  Q&A
Nathan T Zwagerman

4:36PM-4:45PM  Post Operative ENT Management
Adam J Kimple

4:45PM-4:48PM  Q&A
Adam J Kimple

4:48PM-4:57PM  Adjunctive Treatments for Skull Base Tumors
Alexander A. Farag

4:57PM-5:00PM  Q&A
Alexander A. Farag

5:00PM-5:09PM  Overview of Types of Cranietomy for Skull Base Surgery
Theodore H. Schwartz

5:09PM-5:12PM  Q&A
Theodore H. Schwartz

5:12PM-5:30PM  Q&A and Final Remarks
Pre-Meeting Course

2020 NASBS Skull Base Dissection Course

WEDNESDAY, FEBRUARY 5 & THURSDAY, FEBRUARY 6, 2020

CME Accreditation
This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint providership of PESI, Inc. and North American Skull Base Society. PESI, Inc. is accredited by the ACCME to provide continuing medical education for physicians.

AMA PRA Designation Statement
The PESI, Inc. designates this live educational activity for a maximum of 9.25 AMA PRA Category 1 Credit(s)™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

International CME
International Physicians are formally eligible for AMA PRA Category 1 Credit™.

Physician Assistants
AAPA accepts Category 1 credit from AOACCME, Prescribed credit from AAFP, and AMA PRA Category 1 Credit™ for the PRA from organizations accredited by ACCME.

Registered Dieticians
For the purpose of recertification the Commission on Dietetic Registration recognizes courses accredited with AMA PRA Category 1 Credit™.

Nurses
For the purpose of recertification, the American Nurses Credentialing Center accepts AMA PRA Category 1 Credit™ issued by organizations accredited by the ACCME.

CA Nurses
Aspen CME Services is approved by the California Board of Registered Nursing, Provider number CEP14739, for 19 contact hours.

Pharmacists
For the purpose of recertification, the American Council of Pharmacy Education accepts AMA PRA Category 1 Credit™ issued by organizations accredited by the ACCME (Accreditation Council for Continuing Medical Education) for attendance at structured learning activities.

Satisfactory Completion for credits:
All attendees must have completed and turned in a course attendance/evaluation form prior to leaving the conference. Each session claimed for credit must be attended in it’s entirety.

MODERATORS: Arturo Solares & Paul Gardner

This is a comprehensive course designed to cover modern “minimally invasive” corridors for multi-specialty access to skull base lesions, including endoscopic endonasal, transorbital and endoscopic otological approaches. This is ideal for all skull base specialists, notably neurosurgeons, rhinologists, otologists and oculoplastic surgeons.

At the conclusion of this session, attendees will be able to:

- Recognize minimally invasive approaches to the skull base.
- Identify different minimally invasive approach corridors based on the anatomic relationships of a lesion to the neuromuscular structures of the skull base.
- Integrate minimally invasive skull base surgery techniques in their practice.

*Registration for this course is separate from the annual meeting.
### 2020 NASBS Skull Base Dissection Course (Cont.)

**WEDNESDAY, FEBRUARY 5 & THURSDAY, FEBRUARY 6, 2020**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td><strong>Wednesday, February 5</strong></td>
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<tr>
<td>7:30am-7:50am</td>
<td>Anterior Cranial Base - Supraorbital Craniotomy: Step-by-Step and Indications</td>
<td>Daniel F. Kelly</td>
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<tr>
<td>7:50am-8:05am</td>
<td>Anterior Cranial Base: Transpalpebral Modification vs Eyebrow Prosection</td>
<td>Amir R. Dehdashti &amp; Randal Feingold</td>
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<tr>
<td>8:15am-9:40am</td>
<td>Anterior Cranial Base Dissection</td>
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<tr>
<td>9:50am-10:10am</td>
<td>Endonasal Anterior Skull Base Anatomy</td>
<td>Maria Peris Celda &amp; Carlos Pinheiro-Neto</td>
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<tr>
<td>10:10am-10:30am</td>
<td>Endoscopic Endonasal Approach to the Ventral Skull Base (Anterior Craniofacial): Step-by-Step Indications</td>
<td>Camilo Reyes</td>
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<td>10:30am-10:45am</td>
<td>Endoscopic Endonasal Approach to the Ventral Skull Base Dissection</td>
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<td>11:05am-12:15pm</td>
<td>Endoscopic Endonasal Approach to the Ventral Skull Base Dissection</td>
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<tr>
<td>12:30pm-1:00pm</td>
<td>Lunch with Lectures</td>
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<tr>
<td>12:40pm-1:00pm</td>
<td>Endoscopic Endonasal Anatomy: Transmaxillary/Transpterygoid</td>
<td>Carlos Pinheiro-Neto &amp; Maria Peris Celda</td>
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<tr>
<td>1:00pm-1:20pm</td>
<td>Endonasal Transpterygoid +/- Denkers</td>
<td>Gustavo Pradilla &amp; Clementino Arturo Solares</td>
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<td>1:20pm-1:40pm</td>
<td>Ipsilateral Transmaxillary Approach</td>
<td>Gustavo Nogueira</td>
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<td>1:40pm-2:00pm</td>
<td>Contralateral Transmaxillary Approach</td>
<td>Eric W. Wang</td>
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<td>2:00pm-2:15pm</td>
<td>Endoscopic/Endonasal/Transmaxillary Prosection</td>
<td>Zara M Patel &amp; Juan C. Fernandez-Miranda</td>
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<tr>
<td>2:30pm-5:00pm</td>
<td>Endoscopic/Endonasal/Transmaxillary Dissection</td>
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<td><strong>Thursday, February 6</strong></td>
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<tr>
<td>7:30am-8:00am</td>
<td>Transorbital Approach to MCF/Meckel’s Cave: Step-by-Step and Indications</td>
<td>James Chelnis &amp; Enrique Antonio Iturriaga</td>
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<tr>
<td>8:00am-8:15am</td>
<td>Lateral Orbitotomy Prosection - Approach and Orbital Tumors</td>
<td>S Tonya Stefko</td>
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<tr>
<td>8:15am-8:30am</td>
<td>Lateral Orbitotomy Prosection - Middle Fossa/Meckel’s Cave/Cavernous Sinus</td>
<td>William Couldwell</td>
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<td>8:40am-10:00am</td>
<td>Lateral Orbitotomy Dissection</td>
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<td>10:15am-10:45am</td>
<td>Endoscopic Endonasal and Retrosigmoid Posterior Fossa Anatomy</td>
<td>Maria Peris Celda</td>
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<tr>
<td>10:45am-11:05am</td>
<td>Endoscopic Endonasal Transclival Approach with All Extensions</td>
<td>Leo Ditzel</td>
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<tr>
<td>11:05am-12:00am</td>
<td>Endoscopic Endonasal Transclival Approach with All Extensions Prosection</td>
<td>Nathan T Zwagerman &amp; David Poetker</td>
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<td>11:30am-12:30pm</td>
<td>Lunch with Lectures</td>
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<tr>
<td>11:45am-1:15pm</td>
<td>Keyhole Retrosigmoid Endoscopic Approach: Step-by-Step and Indications</td>
<td>John Y.K. Lee</td>
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<td>12:30pm-1:30pm</td>
<td>Endoscopic Endonasal Transclival Approach with All Extensions Dissection</td>
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<td>1:45pm-2:45pm</td>
<td>Keyhole Retrosigmoid Endoscopic Approach Dissection</td>
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<td>3:00pm-3:20pm</td>
<td>Temporal Bone and Middle Ear Anatomy</td>
<td>Carlos Pinheiro-Neto &amp; Maria Peris Celda</td>
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<tr>
<td>3:20pm-3:45pm</td>
<td>Endoscopic Transotic Approaches for Skull Base Tumors: Step-by-Step and Indications</td>
<td>Alejandro Rivas</td>
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<td>3:45pm-4:00pm</td>
<td>Endoscopic Transotic Approaches Prosection</td>
<td>Brandon Isaacson</td>
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<tr>
<td>4:15pm-5:30pm</td>
<td>Endoscopic Transotic Approaches Dissection</td>
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*Registration for this course is separate from the annual meeting*
North American Skull Base Society

31st Annual Meeting

February 12-14, 2021, Atlanta Marriott Marquis, Atlanta, GA
Pre-Meeting Dissection Course: February 10-11, 2021

For general information regarding the meeting, please contact Paula Kupiec at paula@nasbs.org.

Abstract submissions will open Summer 2020