The Inaugural Meeting of the
Society of Asian Academic Surgeons

Li Ka Shing Center
Stanford University School of Medicine
September 24, 2016
Host: Mary Hawn, MD, MPH, Chair of Surgery
Local Arrangements Chair: Cindy Kin, MD
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## Schedule-at-a-Glance

### Friday, September 23

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>6:00-8:00P</td>
<td>Executive Council/Program Committee Meeting</td>
<td>MacArthur Park</td>
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<tr>
<td>8:00-10:00P</td>
<td>Welcome Reception</td>
<td>MacArthur Park</td>
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### Saturday, September 24

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00-7:30A</td>
<td>Breakfast</td>
<td>LK 120</td>
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<tr>
<td>7:30-8:30A</td>
<td>Welcome - Local Program</td>
<td>LK 120</td>
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<tr>
<td></td>
<td>Mary Hawn MD MPH, Quynh-Thu Le MD, James Dunn MD PhD, Neal Bhadkamkar PhD MBA, Kenneth Kin, PhD</td>
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<tr>
<td>8:30-10:30A</td>
<td>Ascend: Myths of Asian Leadership</td>
<td>LK 120</td>
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<td></td>
<td>Larry Chang MBA, Denise Peck MBA</td>
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<tr>
<td>10:30-11:00A</td>
<td>Coffee break</td>
<td>LK 120</td>
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<tr>
<td>11:00A-12:36P</td>
<td>Plenary Scientific Session</td>
<td>LK 120</td>
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<tr>
<td>12:36P-1:30P</td>
<td>Lunch</td>
<td>LK 101/102</td>
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<tr>
<td>1:30-3:00P</td>
<td>Scientific Session II A: Oncology</td>
<td>LK 203/204</td>
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<td>Scientific Session II B: Endocrine/HSR</td>
<td>LK 205/206</td>
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<td>Scientific Session II C: Pediatric/Trauma</td>
<td>LK 208</td>
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<tr>
<td>3:00-3:30P</td>
<td>Coffee break</td>
<td>LK 120</td>
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<tr>
<td>3:30-4:00P</td>
<td>Presidential Address - Kenric Murayama, MD</td>
<td>LK 120</td>
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<tr>
<td>4:00-5:00P</td>
<td>Learning from personal experience: becoming a chair</td>
<td>LK 120</td>
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<td>Prabhakar Baliga MD, Dave Shibata MD, Sandra Wong MD MS</td>
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<tr>
<td>5:00-6:00P</td>
<td>In conversation with: Vivian Lee, MD, PhD, MBA</td>
<td>LK 120</td>
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<tr>
<td>6:00-6:30P</td>
<td>Business meeting</td>
<td>LK 120</td>
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<tr>
<td>6:30-10:00P</td>
<td>Saturday reception</td>
<td>Stanford West</td>
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Maps

MacArthur Park is the location of the Welcome Reception. It is a short 5 minute walk from the Sheraton. Head right out of the main entrance toward the Palo Alto Caltrain station. The restaurant is on the other side of the loop.

The Saturday reception will be held at the Community Building of Stanford West. It is just under 1 mile from Li Ka Shing Center. Transport from the reception back to the hotel will be on your own. We recommend Uber or a cab. The Sheraton will only be a few minutes away by car.
Our Mission

The objectives of the Society of Asian Academic Surgeons shall be to cultivate, nurture and support the advancement of Asians in academic surgery. To achieve these objectives, the Society shall:

1. Create programs to improve the professional development of Asians in academic surgery.
2. Promote advancement of under-represented minorities to leadership positions within academic surgery.
3. Advance initiatives to promote the health and welfare of Asian populations.
4. Encourage and assist the study of diseases of importance to the Asian community.
Our History

The founding of SAAS can be traced to the Presidential Session on Unconscious Bias in Academic Surgery that took place during the 6th Annual Academic Surgical Congress (ASC), directed by then-Society of University Surgeons (SUS) President Dai Chung. Dr. Don Nakayama presented an eye-opening talk on the lack of Asians in the leadership of American academic surgery, and would later publish that data in the Annals of Surgery [Nakayama, DK. Asian Americans in leadership positions in academic surgery. Ann Surg. 255(3):583-8. 2012]. As it turned out, Dr. Chung was the first Asian to ever be elected to the SUS presidency.

That October, during the American College of Surgeons (ACS) Clinical Congress in Washington, DC, a group of nine Asian academic surgeons gathered to talk about the implications of that talk. This group of nine would become the founding members of SAAS (see below). During that meeting, they agreed to pay the initial dues that would provide the seed money to create a new society. After the initial tongue-in-cheek suggestion of naming it the Asian Surgical Society, it was decided to call it the Society of Asian Academic Surgeons.

At first, it was unclear what role we would serve to our membership. The first thought was that we would serve more as a social society that would allow members of the Asian community to meet and network. However, we soon realized that there were important issues facing our community, and we soon changed our focus to the personal and career development of Asian academic surgeons with the belief that the best way to increase Asian representation in the leadership of academic surgery was to prepare future generations to succeed.

Towards this end, we raised money to provide scholarships for both trainees and junior faculty to help them with their career development. We also initiated awards for the best research submitted by members to the ASC to showcase the advances being made by Asians in the field.

From the beginning, our society has been fully inclusive. We defined “Asian” in the broadest sense to include not only those from East, Southeast, and South Asia, but also Persians, Arabs, Turks and any other nationality from the Asian continent. Furthermore, membership in SAAS is open to anyone of any ethnicity who has an interest in promoting underrepresented populations in any arena of academic surgery.
Our membership quickly grew by word of mouth, and we hosted get-togethers at the ACS Clinical Congress and at the ASC. It soon became apparent that we needed to take the next step of organizing our own meeting focusing on the issues important to our membership. 2016 marks the fifth anniversary of the founding of SAAS as well as the inaugural Annual Meeting. The membership continues to grow and interest has never been stronger.

**Founding members**

Herb Chen, MD  
Dai Chung, MD  
Dev Desai, MD, PhD  
Lillian Kao, MD, MS  
Tien Ko, MD  
Paul Kuo, MD  
Nipun Merchant, MD  
Jennifer Tseng, MD, MPH  
George Yang, MD, PhD
Officers

Kenric Murayama, MD, President

Kenric Murayama is Chair and Program Director of the Department of Surgery at the John A. Burns School of Medicine of the University of Hawaii where he attended medical school. He completed his surgery training at Northwestern University Feinberg School of Medicine during which time he did a two year research fellowship in pancreatic physiology. Dr. Murayama has a longstanding commitment to surgical education and leadership development in surgery. Dr. Murayama has been an active participant in surgical societies nationally and is the first President of the Society for Asian Academic Surgeons. He is currently on the Board of Governors for the SAGES and is on the GI Surgery Advisory Council of the ABS. Dr. Murayama was President of the Southwestern Surgical Congress and holds leadership positions in several other organizations. His clinical interests are in minimally invasive surgery for treatment of foregut disorders and abdominal wall hernias.

Paul Kuo, MD, President-Elect

Paul C. Kuo has been the John P. Iginia Professor of Surgery and Chair of the Department of Surgery at Loyola University Medical Center since 2010. He is a 1985 graduate of the Johns Hopkins School of Medicine. He trained at the Brigham and Womens Hospital in general surgery, and at the New England Deaconess Hospital (now the BI-Deaconess) in Hepatobiliary/Transplant Surgery, and spent three years as a postdoctoral research fellow at Harvard Medical School under Joseph Loscalzo, MD, PhD.
Tracy S. Wang, MD, MPH, Secretary/Treasurer

Tracy S. Wang is currently Associate Professor in the Department of Surgery, Division of Surgical Oncology and the Chief of the Section of Endocrine Surgery at the Medical College of Wisconsin. She is the Program Director of the MCW Endocrine Surgery Fellowship and the current Chair of the Fellowship Committee of the American Association of Endocrine Surgeons. She received her undergraduate degree from Brown University and received her medical degree from the Albert Einstein College of Medicine of Yeshiva University. She completed her surgical residency at the Long Island Jewish Medical Center in New York and a fellowship in Endocrine Surgery at the Yale University School of Medicine. She holds a Masters degree in Public Health from the Mailman School of Public Health at Columbia University.

Allan Tsung, MD, Recorder and Society Editor, Journal of Surgical Research

Allan Tsung holds the endowed Roberta G. Simmons Professorship and is the Vice Chair of Research for the Department of Surgery at the University of Pittsburgh School of Medicine. He serves as Co-Director of the UPMC Liver Cancer Center. His clinical interests center on the comprehensive care for all forms of liver, bile duct, and pancreas cancer. His primary research interests are directed toward hepatobiliary and pancreas cancer clinical trials and the role of the tumor micro-environment in the progression of these cancers. In recognition of his research accomplishments, Dr. Tsung has been honored with the American College of Surgeons Excellence in Research Award, the University of Pittsburgh Innovators Award, and the Doris B. Maxwell Research Award. His research has been supported by HHMI, the National Institutes of Health, the Society of University Surgeons, and the American College of Surgeons. He is a member of the Society of University Surgeons, Society of Surgical Oncology, the American Hepato-Pancreato-Biliary Association, and the American Association for the Study of Liver Diseases.
Herb Chen, MD, Chair, Program Committee

Herbert Chen is Professor and Chairman of the Department of Surgery at University of Alabama at Birmingham (UAB), Surgeon-in-Chief at UAB Hospital and Health System, and holds the Fay Fletcher Kerner Endowed Chair. He obtained his BS from Stanford University and graduated from Duke University School of Medicine. He completed a general surgery residency followed by a surgical oncology and endocrinology fellowship at The Johns Hopkins Hospital. Dr. Chen’s clinical interests include endocrine and neuroendocrine disease with a focus on minimally invasive endocrine surgery. His lab studies the role of Notch signaling in thyroid and neuroendocrine cancers. He is the American Cancer Society MEN2 Thyroid Cancer Professor. He is an Associate/Section Editor for *Annals of Surgery, Scientific American Surgery, The Oncologist*, and *Journal of Surgical Research*, and serves on 6 other editorial boards. He is also the Past-President of Association for Academic Surgery, the current Secretary-Treasurer for Surgical Biology Club II, and the current President-Elect for the Society of Clinical Surgery.

Nipun Merchant, MD, Chair, Scholarship Committee

Nipun Merchant is the Alan S. Livingstone Endowed Professor of Surgery in the University of Miami Department of Surgery, Vice Chair of Surgical Oncology Services and the Chief of the Division of Surgical Oncology. He is also the Chief Surgical Officer and Director of Surgical Oncology Research of the Sylvester Comprehensive Cancer Center. He is a recognized leader in the clinical management of hepato-pancreatobiliary and neuroendocrine malignancies. Dr. Merchant has an active basic science and translational research laboratory investigating signal transduction and tumor-stromal interactions in pancreas cancer. He has served on several study sections for the NIH and chaired the NCI-F Study Section. He is also a member of the Pancreas Task Force of the GI Steering Committee of the National Cancer Institute, the Commission on Cancer and the National Comprehensive Cancer Network (NCCN) Pancreatic Adenocarcinoma Panel Member. He serves on the Editorial Boards of the *Annals of Surgery, Annals of Surgical Oncology, Surgery, American Journal of Translational Research* and is an Associate Editor for *BMC Cancer*.
SAAS Committees

Program Committee

Herb Chen, MD, Committee Chair (2015-17)
  University of Alabama, Birmingham
Mike Chen, MD (2015-17)
  University of Alabama, Birmingham
Jayleen Grams, MD, PhD (2015-17)
  University of Alabama, Birmingham
Eugene Kim, MD (2015-17)
  USC-Children’s Hospital of Los Angeles
Cindy Kin, MD (2015-16)
  Stanford University
Elise Min, MD (2015-16)
  University of Washington
Peter Tsai, MD (2015-16)
  Baylor College of Medicine
Jessica Zagory, MD (2015-17)
  Louisiana State University - New Orleans

Scholarship Committee

Nipun Merchant, MD, Committee Chair (2015-17)
  University of Miami
Vikas Dudeja, MD (2015-16)
  University of Minnesota
Ankush Gosain, MD (2015-16)
  University of Tennessee Health Sciences Center
Lyen Huang, MD, MPH (2015-17)
  Stanford University
Julia Tchou, MD (2015-17)
  University of Pennsylvania
Anthony Yang, MD (2015-17)
  Northwestern University
Local Hosts

Mary T. Hawn, MD, MPH

Mary T. Hawn is the Stanford Medicine Professor of Surgery and Chair of the Department of Surgery at Stanford University. Dr. Hawn, a native of Michigan, received her education and surgical training at the University of Michigan. Her clinical area of specialty is minimally invasive foregut surgery. Dr. Hawn is a funded health services researcher and her projects focus on quality measurement and policy in surgical populations. She is a Director for the American Board of Surgery and serves on the editorial board of *Annals of Surgery*, *Journal of the American College of Surgeons*, *Journal of Gastrointestinal Surgery* and the *American Journal of Surgery*. Dr. Hawn has several additional leadership roles in American Surgery including Chair of the American College of Surgeons Scientific Forum Committee and as a Trustee and Treasurer for the Surgical Society of the Alimentary Tract. She is the co-Editor of a new surgical textbook *Operative Techniques in Surgery*.

Cindy Kin, MD

Cindy Kin is an Assistant Professor of Surgery at Stanford University in the Section of Colorectal Surgery. She earned her BA from Harvard University and her MD from Columbia University. She completed her general surgery residency at Stanford and her colorectal fellowship at the Cleveland Clinic in Ohio. Her clinical interests include reoperative colorectal surgery, inflammatory bowel disease, and colorectal cancer. Her research interests include health care utilization, surgical quality, and patient-reported outcomes.
SAAS Award Winners

Resident Development Scholarship
A travel grant supporting attendance of a surgical trainee at the Association of Academic Surgery's Fall Courses held each year prior to the American College of Surgeons Clinical Congress

2014  Vikas Dudeja, MD - Memorial Sloan Kettering Cancer Center
2015  Lyen Huang, MD, MPH - Stanford University
2016  Zhi Ven Fong, MD, MPH - Massachusetts General Hospital

Junior Faculty Award
A travel grant supporting the attendance of a faculty member within 5 years of their first appointment at the Surgical Investigators’ Course at the Academic Surgical Congress

2015  Peter Chang, MD - Beth Israel Deaconess
2016  Daniel I. Chu, MD - University of Alabama at Birmingham

Academic Surgical Congress Research Award
Granted to the highest scoring abstract submitted by a SAAS member as either first or senior author at the Academic Surgical Congress

2015  Chris Goodenough, MD (presenting author)
       Michael Liang, MD (senior author)
       University of Texas, Houston
2016  Jason Castellanos, MD (presenting author)
       Nipun Merchant, MD (senior author)
       University of Miami

Society of Asian Academic Surgeons Best Abstract Award
Granted to the highest scoring abstract presented at the SAAS Annual Meeting

2016  Julie Goswami, MD (presenting author)
       Allan Tsung, MD (senior author)
       University of Pittsburgh
Guest Speakers

Quynh-Thu Le, MD

Quynh-Thu Le holds the Katharine Dexter McCormick & Stanley Memorial Professorship and is Chair of the Radiation Oncology Department. She received her medical degree and radiation oncology training at University of California, San Francisco. Her research focuses on head and neck cancer (HNC), specifically in tumor hypoxia, galactic-1, and salivary gland stem cells. Clinically, she has led multicenter phase II and III clinical trials, testing the addition of novel drugs as radiosensitizer or radioprotector with chemoradiotherapy in HNC. She has received grant support from ASCO, the ASTRO Education & Development Award, and the NIH. She was inducted into the Fellowship of the American College of Radiology (FACR), Institute of Medicine (IOM) and Fellow of American Society of Therapeutic Radiology and Oncology (FASTRO). She was also honored with the Caltech Distinguished Alumni Award in 2015. Administratively, she is Co-Director of the Radiation Biology Program at the Stanford Cancer Institute, Chair of the NRG HNC Committee, ARS President-elect as well as an ASTRO Nominating Committee member. She also serves on the editorial board of several cancer related journals.

James Dunn, MD, PhD

James Dunn will be the Surgeon-in-Chief of the Lucile Packard Children’s Hospital at Stanford and Chief of Pediatric Surgery. He obtained his B.S. degree in Biology and Chemical Engineering from the California Institute of Technology and his M.D. and Ph.D. degrees from Harvard and the Massachusetts Institute of Technology. He trained in General Surgery at the UCLA School of Medicine and in Pediatric Surgery at the Riley Hospital for Children in Indianapolis. He joined the faculty at UCLA after completing his training and rose to the rank of Professor and Chief of the Division of Pediatric Surgery at Mattel Children’s Hospital. His clinical and research interests include intestinal rehabilitation, short gut syndrome, and bioengineering of small intestine.
Neal Bhakamkar, PhD, MBA

Neal Bhadkamkar is a General Partner at BOLD Capital Partners, a venture fund focused on companies solving meaningful problems using exponential technologies. He previously co-founded Monitor Ventures, which invested in enterprise, consumer and industrial companies. Earlier he ran the engineering group at Zowie, a high-tech toy company, and before that he managed the commercialization process at Paul Allen’s Interval Research Corporation. He started his business career at the Boston Consulting Group. Neal earned bachelors and doctoral degrees in electrical engineering from the Indian Institute of Technology, Delhi, and Stanford University, respectively. He also holds an MBA from Harvard Business School.

Kenneth Kin, PhD

Kenneth Kin is currently a Professor and Associate Dean at the College of Technology Management at National Tsing Hua University in Hsinchu, Taiwan. He serves on the corporate board of multiple technology companies in the US including MediaTek, Vanguard, eMemory, and AzureWave. He also advises a number of technology companies in Taiwan, and a private equity firm in the US. Prior to this, he was Senior Vice President at Taiwan Semiconductor, the largest semiconductor manufacturing company in the world. He has also held Vice President positions at IBM and Motorola. Kenneth earned his bachelors degree at National Tsing Hua University and his masters and doctoral degrees from Columbia University in nuclear engineering and applied physics.
Larry Chang, MBA

Larry Chang is an Executive Advisor at Ascend, dedicated to develop, mentor and advocate for Asian leaders in Corporate America. Larry joined the Ascend Board in 2008 and was the co-President, Northern California Chapter, from 2009 to 2012. He earned his BSE from the University of Michigan, and MBA from the University of California Berkeley. Larry started at Hewlett Packard in 1975, and was VP Supply Chain for the Personal Systems Group, VP/CFO for the Personal Computer Organization, and VP/CFO for the Enterprise Systems Group. He advised the CFO and COO of Haier as an independent consultant from 2007 to 2009. In July of 2016 Larry was elected to the board of Silicon Valley FACES, a new adventure for him to help mitigate bias, bigotry and violence among at-risk students at high schools in his local community.

Denise Peck, MBA

Denise is an Executive Advisor to Ascend, the largest non-profit Pan-Asian organization for business professionals in North America, and a business advisor to startups and company founders in Silicon Valley. She has a BA degree from U.C. Berkeley, and an MBA from Stanford University. Denise co-developed and teaches a two-day course for Ascend, “Executive Insights for Women”, which is targeted at helping Pan-Asian women professionals to succeed in their career journeys. She is a co-author of Hidden in Plain Sight: Asian American Leaders in Silicon Valley, the Ascend research report released in May 2015, which analyzed the low representation of Asian executives in technology companies. Denise is a former senior executive of Cisco Systems. During her 14 years at Cisco, she held a number of Vice President positions in marketing, operations, engineering services, and IT, in San Jose, California and in Shanghai, China. Denise was a long time executive sponsor of Cisco’s diversity initiatives, advocating on behalf of women and Asian employee networks. Prior to Cisco, Denise held senior marketing management positions over 13 years at Sun Microsystems.
**Prabhakar Baliga, MD**

Prabhakar Baliga is the Fitts-Raja Professor of Surgery and Chair of the Department of Surgery at the Medical University of South Carolina. He obtained his medical degree from Madras Medical College, completed his surgical residency at Tulane University Hospital Systems in New Orleans and then fulfilled a Transplant Surgery Fellowship at the University of Michigan. He has conducted HRSA and NIH-funded clinical research studies related to understanding the barriers to and facilitators of organ donation and the effective medical management of transplant recipients. Dr. Baliga was named MUSC’s ICCE Leader for Transplant, Nephrology & Hepatology and serves on the Board of Life Point, an organ procurement agency. He has also served on the Board for the United Network for Organ Sharing and the Board of Directors for the South Carolina chapter of the National Kidney Foundation.

**David Shibata, MD**

David Shibata is the Scheinberg Endowed Chair in Surgery, Professor and Chairman of the Department of Surgery, Deputy Director of the UT West Cancer Center and Surgeon-in-Chief at the University of Tennessee Health Science Center (UTHSC) in Memphis, TN. He attended medical school at McGill University and received his General Surgery training at the Beth Israel Deaconess Medical Center. He completed a Research Fellowship in Cancer Biology at Harvard Medical School and a Surgical Oncology Fellowship at Memorial Sloan-Kettering Cancer Center. Dr. Shibata has broad research interests in colorectal cancer that span basic, translational, population and clinical sciences. His laboratory research centers on the role of epigenetics in cancer development. His clinical practice focuses on the multidisciplinary and surgical management of patients with colorectal cancer. He sits on the National Comprehensive Cancer Network (NCCN) guidelines panel for cancers of the colon, rectum and anus and is also a member of the Lower GI Cancer expert staging panel of the American Joint Cancer Commission (AJCC).
Sandra L. Wong, MD, MS

Sandra L. Wong is Professor and Chair of Surgery at the Geisel School of Medicine at Dartmouth and the Senior Vice President of the Surgical Service Line at Dartmouth-Hitchcock Medical Center. She is also a member of The Dartmouth Institute for Health Policy and Clinical Practice. She graduated from the University of California, Berkeley followed by medical school at Northwestern University. She trained in general surgery at the University of Louisville followed by a fellowship in surgical oncology at the Memorial Sloan Kettering Cancer Center. Dr. Wong has clinical expertise in soft tissue sarcoma, melanoma, Merkel Cell carcinoma, and gastrointestinal cancers. Her research program focuses on quality and costs of cancer care and she has been funded by National Cancer Institute, the Agency for Healthcare Research and Quality, and the American Cancer Society. She is active in the education and mentorship of surgeon-scientists and has been honored with numerous medical student and resident teaching awards.
Keynote Speaker

Vivian Lee, MD, PhD, MBA

Vivian S. Lee serves as Senior Vice President for Health Sciences, Dean of the University’s School of Medicine, and CEO of University of Utah Health Care. She is responsible for an annual budget of $3.3 billion, including a health care system comprised of four hospitals, numerous clinical and research specialty centers like the Huntsman Cancer Institute and John Moran Eye Center, a network of 11 neighborhood health centers; an insurance plan; over 1,330 board certified physicians; and Schools of Medicine, Nursing, Pharmacy, Health, Dentistry.

A graduate of Harvard-Radcliffe, Dr. Lee received a doctorate in medical engineering at Oxford University as a Rhodes Scholar. Returning to Harvard, she earned her M.D. with honors. Following a residency in Diagnostic Radiology at Duke, she trained as a fellow in MRI at NYU. Prior to coming to Utah, she served as the inaugural Vice Dean for Science, Senior Vice-President and Chief Scientific Officer at New York University Langone Medical Center.

Dr. Lee is currently principal investigator for two NIH R01 grants. Elected to the National Academy of Medicine, the American Society of Clinical Investigation, she serves on NIH Council of Councils and the Journal Oversight Committee for JAMA. A Fellow and past President of the International Society for Magnetic Resonance in Medicine (ISMRM), Dr. Lee has authored over 150 papers and a popular textbook, Cardiovascular MRI: Physical Principles to Practical Protocols. Dr. Lee’s research focuses on quantitative functional MRI for the improved understanding of physiology and disease.
Upcoming Meetings

Sep 22, 2017  University of Alabama, Birmingham

Host: Herb Chen, MD, Chair of Surgery
Local Arrangements Chair: Jayleen Grams, MD, PhD

2018  Loyola University, Chicago

Host: Paul Kuo, MD, Chair of Surgery
SAAS would like to recognize the support of Editor-in-Chief Scott LeMaire in building this relationship. Authors presenting abstracts at this meeting are eligible and encouraged to submit manuscripts to JSR. Deadline for submission is December 23, 2016.
Ascend is the largest, non-profit Pan-Asian membership organization for business professionals in North America

Our Vision:
Enhance the presence and influence of current and future Pan-Asian business leaders and serve as a collective voice for Pan-Asian business communities

Robust leadership & professional development programs:
- Myths of Asian Leadership
- Executive Insight Series™
- Executive Insight for Women
  - Executive Presence
- Advanced Leadership Program

Established in 2005
- Career lifecycle organization
- Cultivates Pan-Asian talent

Reach of over 60,000 across the U.S. and Canada

To learn more, please visit: www.ascendleadership.org
Program

Friday, September 23, 2016

6:00-8:00P  Executive Council/Program Committee Meeting

8:00-10:00P  Welcome Reception- MacArthur Park Restaurant

Saturday, September 24, 2016

All events are in LK 120 except as noted.

6:30A  Buses begin departing from Sheraton to Stanford

7:00-7:30A  Breakfast

7:30-8:30A  Welcome from Dr. Mary Hawn and local program

Quynh-Thu Le, MD
Chair, Radiation Oncology, Stanford University
James Dunn, MD, PhD
Division Chief of Pediatric Surgery, UCLA
Neal Bhadkamkar, PhD, MBA
General Partner, BOLD Capital Partners
Kenneth Kin, PhD
Former Senior Vice President, Taiwan Semiconductor

Moderated by:
Cindy Kin, MD
Assistant Professor, Stanford University

8:30-10:30A  Ascend: Myths of Asian Leadership

Larry Chang, MBA
Denise Peck, MBA

10:30-11:00A  Coffee break

11:00A-12:36P  Plenary Scientific Session

Moderated by:
Herb Chen, MD
Chair, University of Alabama Birmingham
Paul Kuo, MD, MBA
Chair, Loyola University
12:36-1:30P  Lunch - LK 101/102
1:30-3:00P  Scientific Session II - LK 203/204, 205/206, 208
3:00-3:30P  Coffee break
3:30-4:00P  Presidential Address
    *Kenric Murayama, MD*
    Chair, University of Hawaii
4:00-5:00P  Learning from personal experience: becoming a surgical chair
    *Prabhakar Baliga, MD*
    Chair, Medical University of South Carolina
    *Dave Shibata, MD*
    Chair, University of Tennessee Health Sciences Center
    *Sandra Wong, MD, MS*
    Chair, Dartmouth Geisel School of Medicine

    Moderated by:
    *Kenric Murayama, MD*
    Chair, University of Hawaii
    *Carlos Pellegrini, MD*
    Chair, University of Washington
    Past-President, American College of Surgeons
5:00-6:00P  In conversation with:
    *Vivian Lee, MD, PhD, MBA*
    Dean and Senior Vice President for Medical Affairs
    University of Utah School of Medicine

    Moderated by:
    *George Yang, MD PhD*
    Associate Professor, Stanford University
6:00-6:30P  SAAS Business Meeting
6:30-10:00P Saturday Reception - Stanford West Community Building
Scientific Sessions

**Plenary Session (11:00A-12:36P)**
Moderators: Herb Chen, MD and Kenric Murayama, MD

11:00-11:08 Innate immune response after liver ischemia/reperfusion results in procoagulant state and remote organ injury

11:08-11:16 Management of Pediatric Spontaneous Pneumomediastinum: Do we need more than a Chest X-Ray?
Bachier-Rodriguez M, Savoie KB, Huang EY. Le Bonheur Children's Hospital; University of Tennessee, Health Science Center.

11:16-11:24 Dysadherin is a Novel Target for Antibody-drug Conjugates Development in Thyroid Cancers with Aggressive Phenotypes

11:24-11:32 External Radiation or Ablation for Solitary Hepatocellular Carcinoma: A Survival Analysis of the SEER Database
Berger NG, Hammad AY, Tanious M, Younan G, Miura JT, Turaga KK, Christians KK, Johnston FM, Tsai S, Gamblin TC. Medical College of Wisconsin.

11:32-11:40 Natural Killer Cell and Anti-GD2 Antibody Therapy Leads to Decreased Metastasis in a Neuroblastoma Mouse Model of Minimal Residual Disease

11:40-11:48 Matching Mutations in Multifocal Papillary Thyroid Cancer are Associated with Higher Risk of Central Compartment Nodal Metastasis
Li W, Carty SE, McCoy KL, Stang MT, Nikiforov YE, Yip L. University of Pittsburgh.

11:48-11:56 Resistance to MEK inhibition in pancreatic cancer is associated with amphiregulin mediated EGFR-STAT3 activation
Nagathihalli NS, Castellanos JA, Shi C, Roberts C, VanSaun M, Merchant NB. University of Miami Miller School of Medicine.
11:56-12:04 Developing An Age Threshold to Define "Elderly" Patients with Trauma Related Septic Shock  
Kothari AN, Blanco BA, Brownlee SA, Kuo PC. Loyola University Medical Center.

12:04-12:12 Triptolide in Combination with Conventional Chemotherapy Displays Enhanced Efficacy Against Pancreatic Cancer  
Modi S, Giri B, Banerjee S, Dudeja V, Saluja A. University of Miami.

12:12-12:20 How Long Should We Follow Patients After "Curative" Parathyroidectomy?  
Lou I, Balentine CJ, Clarkson S, Schneider DF, Sippel RS, Chen H. University of Alabama Birmingham.

12:20-12:28 Engrailed-1 identifies the fibroblast lineage responsible for the transition from fetal scarless to adult scarring cutaneous wound repair  

12:28-12:36 Are Patients Making Optimal Choices When Selecting Hospitals?  
Scientific Session II A: Oncology (1:30-3:00P)
Moderators: Cindy Kin, MD and Allan Tsung, MD

1:30-1:35 MDM4 is a potential novel therapeutic target in hepatocellular malignancy

1:35-1:40 Disparities in Access to Care and Outcomes in Patients with Adrenocortical Carcinoma
Hammad AY, Yen TW, Wang TS. Medical College of Wisconsin.

1:40-1:45 Metabolomic Perturbations Induced by Imatinib Exposure in Gastrointestinal Stromal Tumor Cells

1:45-1:50 Role of Leptin in enhancement of proliferation of Gastro-Intestinal Stromal Tumor (GIST-T1) cells

1:50-1:55 Metastatic/Recurrent Gastrointestinal Stromal Tumors (M/R-GIST): Does surgical resection improve survival?

1:55-2:00 CDK4/6 and MEK Inhibition Overcome STAT3-mediated Chemoresistance in KRAS mutant Pancreatic Cancer
Castellanos JA, Van Saun M, Nagathihalli NS, Xiong Y, Kasmai C, Merchant NB. University of Miami Miller School of Medicine.

2:00-2:05 Effect of Complications After Pancreaticoduodenectomy on Adjuvant Therapy Utilization and Survival in Patients with Pancreatic Cancer

2:05-2:10 Molecular profiling of cholangiocarcinoma in an inducible Notch1 knockdown system
Sokolowski K, Walden D, Kunnimalaiyaan S, Gamblin TC, Kunnimalaiyaan K. Medical College of Wisconsin.
2:10-2:15  Robotic Esophagectomy Outcomes To date. A systematic review and meta-analysis  

2:15-2:20  Improved Survival after Hepatectomy for Intrahepatic Cholangiocarcinoma at Academic Cancer Centers  
Berger NG, Hammad AY, Miura JT, Johnston FM, Christians KK, Tsai S, Turaga KK, Gamblin TC. Medical College of Wisconsin.

2:20-2:25  The Impact of Neoadjuvant Radiation in Patients with Esophageal Adenocarcinoma is Short-Lived  

2:25-2:30  Mapping of Notch1 Promoter by HDAC inhibitor Treatment and the Gene Activation in NE Cancers  

2:30-2:35  Absence of HSP 70 in Tumor Microenvironment Inhibits Pancreatic Cancer Growth  

2:35-2:40  Pancreatic neck and body tumors: is central pancreatectomy better than distal pancreatectomy? An updated meta-analysis  

2:40-2:45  Distal pancreatectomy with and without spleen preservation for benign and low grade malignant tumors: systematic review and update meta-analysis of short term postoperative complications  

2:45-2:50  Pancreatic Neuroendocrine Tumors (PanNETs): Resection Vs Observation survival analysis  
Scientific Session II B: Endocrine/HSR (1:30-3:00P)
Moderators: Mike Chen, MD and Jayleen Grams, MD, PhD

1:30-1:35 Hyperthyroidism after Parathyroid Surgery: A Prospective Analysis of Potential Contributing Factors
Patel SG, Yoo JY, Yip L, Stang MT, Carty SE, McCoy KL. University of Pittsburgh.

1:35-1:40 Encapsulated FVPTC: Are These Tumors Really Benign?

1:40-1:45 Preoperative Ultrasound Finding of an Intra-thyroidal Lesion Justifies Empiric Thyroid Resection in Patients with Primary Hyperparathyroidism and Missing Parathyroid Glands

1:45-1:50 Even in Comparable Patients, Non-Elective Paraesophageal Hernia Repair Portends Worse Outcomes: A Propensity-Adjusted Analysis

1:50-1:55 Discordance Between SCIP Adherence, Postoperative Outcomes, and Readmissions: Implications for New Joint Commission Standards
Chang V, Blackwell RH, Markossian T, Yau RM, Blanco BA, Zapf MAC, Abood GJ, Gupta GN, Kuo PC, Kothari AN. Loyola University Medical Center.

1:55-2:00 Gender Differences in Outcomes After Endovascular Aneurysm Repair
Truong C, Kugler N, Lee CJ. Medical College of Wisconsin.

2:00-2:05 Predictors of Aortic Annular Size
Chan P, Villa M, Cook CC, Gleason TG, Morell VO, Tsai PI, Chu D. University of Pittsburgh School of Medicine.

2:05-2:10 Racial Disparities in Post-Operative Complications for Patients Who Die After Surgery
Giglia MD, Goss LE, Hollis RH, Ferrara M, Gullick AA, Morris MS, Chu DI. University of Alabama at Birmingham.

2:10-2:15 Stricter intraoperative parathormone monitoring criterion may reduce recurrent hyperparathyroidism after successful parathyroidectomy
Khan ZF, Farra JC, Lew JI. University of Miami Leonard M. Miller School of Medicine.
Why do patients receive care from a short-term medical mission? Observations from rural Guatemala
Esquivel MM, Chen JC, Siegler N, Uribe-Leitz T, Siegler D, Weiser TG, Yang GP. Stanford University.

Outcomes of Hemodialysis Reliable Outflow (HeRO) Graft: A Systematic Review and Meta-Analysis

Self-Reported Conflict of Interest and the Centers of Medicare and Medicaid Services Open Payments Database
Cherla D, Olavarria O, Holihan JL, Chen J, Kao LS, Ko TC, Liang MK. Cleveland Clinic Foundation.

The Relationship Among Relative Adrenal Insufficiency and Infection with Morbid Obesity
Adams QE, Caputo ND, Liao J, Choi KC. University of Iowa Hospitals and Clinics.

Enhanced Recovery After Surgery Reduces Disparities in Length-of-Stay for Colorectal Patients

Selection criteria for general surgery fellowships: a survey of fellowship program directors
Teitelbaum EN, Ganai S, Vu HN, Grams JM, Krall J, Murayama KM. Northwestern University.

Prognostic factors of anaplastic thyroid neoplasms in adolescent and young adult population
Scientific Session II C: Pediatric/Trauma (1:30-3:00P)
Moderators: Eugene Kim, MD and Peter Tsai, MD

1:30-1:35  Modifying the Embryonic Colonic Microenvironment Decreases Aganglionosis in Hirschsprung’s Disease
Barlow-Anacker AJ, Trainor PA, Epstein ML, Gosain A. Le Bonheur Children's Hospital, University of Tennessee Health Science Center.

1:35-1:40  Open versus Laparoscopic Approach to Gastric Fundoplication in Children with Cardiac Risk Factors
Maizlin II, Shroyer MC, Beierle EA, Chen MK, Russell RT. University of Alabama at Birmingham, Children's Hospital of Alabama.

1:40-1:45  Incidental H. pylori gastritis found at time of gastrocutaneous fistula closure: Is treatment necessary?
Savoie KB, Manning LM, Paton EA, Zhang J, Whitworth J, Huang EY. University of Tennessee Health Science Center.

1:45-1:50  Hypertonic saline infusion after damage control laparotomy is not associated with risk of organ-space surgical site infection
Chang R, Harvin JA, Folkerson LE, Cotton BA, Swartz M, Wade CE, Holcomb JB. University of Texas Health Science Center at Houston.

1:50-1:55  Insurance Status and Race Affect Treatment and Outcome of Traumatic Brain Injury

1:55-2:00  Activation of Notch Signaling in Human Biliary Atresia and Experimental Cholestasis

2:00-2:05  Targeting Cancer Stem Cells via STAT3 Inhibition Improves Survival in a Minimal Residual Disease Mouse Model of Neuroblastoma
Jackson JR, Asuelime GE, Wan Z, Kim ES. Children's Hospital Los Angeles.

2:05-2:10  Robot-Assisted Surgical Techniques Utilization in American Pediatric Surgery Fellowships
Maizlin II, Shroyer MC, Yu DC, Martin CA, Chen MK, Russell RT. University of Alabama at Birmingham, Children's Hospital of Alabama.

2:10-2:15  The microbiome of five body sites in critically ill adult surgical patients is highly disordered and unstable.
Yeh, A, Rogers, M, Firek, B, Morowitz, M. University of Pittsburgh.
2:15-2:20  Pediatric Near-Drowning Events: Do They Warrant Trauma Team Activation?
Chotai PN, Eithun B, Manning L, Ross J, Eubanks JW, Hamner C, Gosain A. Le Bonheur Children’s Hospital, University of Tennessee Health Science Center.

2:20-2:25  Transcriptional Profiling Reveals Dynamic Changes in Neural Crest Cells and the Colonic Microenvironment During Enteric Nervous System Development
Barlow-Anacker AJ, Epstein ML, Gosain A. Le Bonheur Children’s Hospital, University of Tennessee Health Science Center.

2:25-2:30  Timing and Outcomes Of Ostomy Closure In Neonates Surviving Necrotizing Enterocolitis
Tsai AY, Thompson R, Gosain A, Blakely ML, Langham MR, Eubanks J, Huang EY. Penn State Hershey Medical Center.

2:30-2:35  Is Fluoroscopic Enema Reduction an Effective Initial Treatment for Intussusception in Older Children?
Savoie KB, Thomas F, Nouer SS, Huang EY. University of Tennessee Health Science Center.

2:35-2:40  Surgical Informed Consent in Children: A Systematic Review
Chotai PN, Nollan RH, Huang EY, Gosain A. Le Bonheur Children’s Hospital, University of Tennessee Health Science Center.

2:40-2:45  Management of Anticoagulation in Acute Care: comparing complications and reversal strategies for trauma and emergency general surgery patients with prehospital rivaroxaban vs. warfarin use
Myers S, Brown J, Kutcher M, Dadashzadeh E, Cheung J, Neal M. University of Pittsburgh Medical Center.

2:45-2:50  Characteristics and outcomes in children with undifferentiated embryonal sarcoma of the liver: a report from the National Cancer Data Base.
Abstracts

Plenary Session 1
Innate immune response after liver ischemia/reperfusion results in pro-coagulant state and remote organ injury
University of Pittsburgh Medical Center

Objective
We have recently shown that liver ischemia/reperfusion (I/R), an unavoidable consequence of liver resection, releases neutrophil extracellular traps (NETs). However, the mechanisms by which liver I/R leads to remote organ injury are as yet unknown. We now hypothesize that NET formation after liver I/R stimulates a pro-coagulant state with resultant distal organ injury.

Methods
Wild-type, wild-type treated with DNase (to inhibit NETs), and peptidylarginine deaminase 4 (PAD4) knockout (unable to form NETs) mice were subjected to 70% one-hour hepatic ischemia. Immunofluorescence of liver, lung, and kidney were performed to assess for platelet microthrombi. Platelet aggregometry was assessed with Chronolog-Lumi aggregometer. Flow cytometry for platelet activation (CD62P, P-selectin) and platelet neutrophil aggregates (CD41, Ly6G) was performed.

Results
In wild-type mice, platelet-rich microthrombi and increased citrullinated histone (marker of NETs) were identified in liver, lung, and kidney microvasculature within 6 hours after reperfusion. This correlated with elevated sALT and serum cystatin C (a marker of kidney injury) levels peaking at 6 and 24 hours respectively. Platelet aggregation increased significantly within 1 hour after reperfusion and returned to baseline by 24 hours. Platelet surface CD62P and circulating platelet-neutrophil aggregates were increased, most prominently at 6 hours, both indicative of increased platelet activation. In DNase-treated and PAD4 knockout mice, platelet aggregates were not seen in remote organ microcirculation, and platelet function studies did not reveal significant changes, suggesting that NET formation is necessary for induction of systemic hypercoagulability and organ injury.

Conclusion
NET formation after liver I/R induces a systemic pro-coagulant state with resultant remote organ injury.
Management of Pediatric Spontaneous Pneumomediastinum: Do we need more than a Chest X-Ray?
Bachier-Rodriguez M, Savoie KB, Huang EY
Le Bonheur Children’s Hospital, University of Tennessee Health Science Center

Objective
Spontaneous pneumomediastinum (SPM) is rare in children. It is critical to differentiate between children presenting with SPM and those with esophageal or airway injury, pulmonary illness, or foreign body obstruction. We seek to identify clinical factors that may differentiate patients requiring additional investigations from those who can be safely observed.

Methods
The Pediatric Health Information System (PHIS) database was queried for patients presenting between 2003 and 2013 with an ICD-9 diagnosis of pneumomediastinum (PM). Children ages 1-18 years without cardiac surgery or trauma, except for isolated tracheal, bronchial or esophageal injury, were included. Chi-square analysis and logistic regression were performed to assess potential risk factors for mediastinal organ injury and death.

Results
4892 patients were identified from PHIS. PM was associated with asthma in 48% of patients, while tracheal and esophageal injuries were rare (1.3%). Mortality rate was 2.6%. After adjusted analysis, PM with pleural effusion had a higher association with esophageal injury (OR:6.6; 95%CI:2.9-15.0). PM with pneumothorax (OR:2.1; 95%CI:1.3-3.4), as well as PM with pleural effusion (OR:2.1; 95%CI:1.1-4.0), had higher associations with airway foreign body. Patients with PM and airway foreign body and PM with pneumonia had higher risks of mortality (OR:3.2; 95%CI:1.4-7.0, and OR:2.3; 95%CI:1.6-3.5, respectively).

Conclusion
This is the largest review of children with pneumomediastinum to date. Our data suggest that most patients who present with PM suffer from SPM associated with asthma, not secondary pneumomediastinum from organ injury. Children with concurrent pleural effusion, pneumothorax, or history of foreign body aspiration should receive additional work-up for mediastinal organ injury.
Plenary Session 3
Dysadherin is a Novel Target for Antibody-drug Conjugates Development in Thyroid Cancers with Aggressive Phenotypes
University of Wisconsin – Madison

Objective
Aggressive thyroid tumors are resistant to standard therapy. EDC1 is a new antibody drug composed of an anti-dysadherin antibody conjugated to CEN09-106, a class of bufalin drugs. The purpose of this study was to determine the expression of dysadherin in different types of thyroid carcinoma, examine its clinicopathological correlations, and evaluate the therapeutic potential of EDC1 for thyroid carcinomas.

Methods
Malignant and non-malignant thyroid tissues from 158 patients were arranged in tissue microarrays and examined for dysadherin expression and correlated with clinical outcomes. Thyroid cancer cell lines were examined for the expression of dysadherin by Western blot and immunofluorescence. Finally, six different human thyroid cancer cell lines were treated with different concentrations of EDC1 (0-8nM). Cell proliferation was measured using 3-(4, 5-dimethylthiazol-2-yl)-2,5-diphenyltetrazoliumbromide (MTT) assay.

Results
Only one in 53 benign thyroid tissues and 62% of thyroid cancers expressed dysadherin. All anaplastic and majority of papillary thyroid cancers overexpressed dysadherin. Dysadherin expression was significantly correlated with extrathyroidal extension and lymph node metastases in papillary thyroid cancer. MTT assay of cell lines that highly expressed dysadherin achieved half of the maximal inhibitory effect (IC50) at doses below 0.2 nM. No effect was observed on cell proliferation in any of the six lines they were were treated with the same drug that was conjugated to a non-specific antibody.

Conclusion
The positive expression of dysadherin may serve as a prognostic marker for adverse clinical outcome. Our data suggests that EDC1 could be a very specific and effective treatment for aggressive thyroid cancers that overexpress dysadherin.
Plenary Session 4
External Radiation or Ablation for Solitary Hepatocellular Carcinoma: A Survival Analysis of the SEER Database
Berger NG, Hammad AY, Tanious M, Younan G, Miura JT, Turaga KK, Christians KK, Johnston FM, Tsai S, Gamblin TC
Medical College of Wisconsin

Objective
Hepatocellular carcinoma (HCC) patients ineligible for resection often receive palliative interventions. This study hypothesized that external beam radiation (XRT) could be equally effective compared to ablation therapy (AT) for selected HCC patients.

Methods
The Surveillance, Epidemiology, and End Results (SEER) database was used to identify HCC patients (2004-2012) undergoing XRT or AT for solitary HCC lesions. Propensity score modeling was utilized to adjust for baseline characteristics. Overall survival (OS) was examined using Kaplan-Meier curves. Cox regression was used to identify predictors of survival.

Results
Following propensity matching, a total of 784 patients were identified; 627 (80%) undergoing AT and 157 (20%) undergoing XRT. The median OS for AT and XRT was 32 and 22 months (p=<0.001) respectively. When stratified by tumor size, AT was associated with a better OS for tumors 3-5cm and those >5cm; (30m vs. 16m, p<0.001) and (25m vs. 9m, p<0.001) respectively; while similar survival rates were found in patients with tumor size <3cm (37m vs. 47m, p=0.508). In the multivariate analyses, XRT was associated with a worse OS (HR=1.64, p<0.001). Elevated AFP, tumor size 3-5cm and >5cm were identified as negative predictors of survival; (HR=1.54, p=0.001), (HR=1.58, p=0.001) and (HR=1.93, p<0.001).

Conclusion
Similar survival for solitary HCC lesions exist between XRT and AT if tumor size is < 3cm. However, AT demonstrates improved survival rates compared to XRT for lesions larger than 3cm. This 3 cm reference point may serve as a valuable metric to guide treatment decisions.
Plenary Session 5
Natural Killer Cell and Anti-GD2 Antibody Therapy Leads to Decreased Metastasis in a Neuroblastoma Mouse Model of Minimal Residual Disease
Jackson JR, Wu H, Asuelime GE, Sun J, Seeger RC, Kim ES
Children’s Hospital Los Angeles

Objective
Following primary tumor resection, anti-GD2 antibody (ch14.18) has been shown to improve survival in high-risk neuroblastoma patients. Additional synergistic therapies are being sought. In vitro, natural killer cells (NK) have demonstrated cytotoxicity against neuroblastoma cells. Thus, we hypothesized that combination therapy would increase cytotoxicity of neuroblastoma cells, and in vivo, decrease incidence of metastasis and increase survival in our mouse model of minimal residual disease.

Methods
1x10⁶ CHLA-255 human neuroblastoma cells were implanted intrarenally into 27 NSG mice and randomized into four groups: control tumor + NK+ch14.18, tumor resection group + NK+ch14.18. Control tumor mice were not resected, and tumor resection mice were resected on day 7. Mice were treated for four weeks. Histopathology was used to identify metastasis to liver and bone marrow. Significance was determined by Fisher’s exact test. Survival was analyzed using Kaplan-Meier method with significance determined by log-rank test.

Results
In mice with intact primary tumors, NK+ch14.18 led to decreased metastasis compared to control (0/7 vs 6/6 liver, p<0.0006; 1/4 vs 4/4 bone marrow, p=0.142). In the tumor resection mice, NK+ch14.18 treatment led to significantly less metastasis compared to no treatment (1/6 vs 6/7 liver, p<0.03; 0/5 vs 3/4 bone marrow; p<0.05). The overall survival between groups was not significantly different.

Conclusion
The combination of NK cells and anti-GD2 antibody leads to markedly less metastatic disease in both primary tumor and tumor resection mouse models of neuroblastoma. This combined therapy may offer an efficacious treatment option for relapsed metastatic disease for children with high-risk neuroblastoma.
Plenary Session 6
Matching Mutations in Multifocal Papillary Thyroid Cancer are Associated with Higher Risk of Central Compartment Nodal Metastasis
Li W, Carty SE, McCoy KL, Stang MT, Nikiforov YE, Yip L
University of Pittsburgh

Objective
Up to 60% of multifocal papillary thyroid carcinomas (MPTC) may arise as synchronous primary tumors with distinct molecular alterations, but MPTC may represent intraglandular spread wherein separate tumor foci have the same driver mutation. Our study aim was to examine clinicopathologic features of MPTC with same or different mutations.

Methods
We reviewed records of 191 patients who had initial thyroidectomy for MPTC with molecular testing of ≥2 foci for BRAF, NRAS, HRAS, KRAS mutations, and RET/PTC1, RET/PTC3 and PAX/PPARG rearrangements.

Results
Identical “matching” mutations (SAME) were identified in 78 patients (41%) and differing mutations (DIFF) were detected in MPTC of 113 patients (59%). Compared to DIFF patients, SAME patients had a higher rate of central LNM (53% v. 31%, OR=2.6, P=0.009) and a higher percentage of positive central compartment lymph nodes (mean 36% v. 16%, p=.01). In subset analysis of 127 patients who had at least 1 BRAF V600E positive PTC, SAME patients still had a higher rate of CLNM than DIFF patients (65% v. 36%, OR 3.4, p=0.005). At mean follow-up of 23 (0.2-31) months, reoperation for recurrence occurred in 5% of patients (p=0.5).

Conclusion
40% of MPTC have matching mutations and those patients have a 2.5X higher risk of central compartment LNM. The findings suggest that multifocality may be due to intraglandular spread more often than is currently appreciated and may manifest a more aggressive disease pattern. When identical molecular alterations are detected preoperatively in ≥2 tumor foci, CND should be strongly considered at initial operation.
Plenary Session 7
Resistance to MEK inhibition in pancreatic cancer is associated with amphiregulin mediated EGFR-STAT3 activation
Nagathihalli NS, Castellanos JA, Shi C, Roberts C, VanSaun M, Merchant NB
University of Miami

Objective
Targeting KRAS has remained an elusive goal. Efforts have focused on targeting downstream effectors of RAS. Targeting the MAPK pathway has therapeutic potential. Clinical trials of MAPK-directed therapies have been unsuccessful in pancreas cancer (PDAC). We report a novel mechanism of resistance to MAPK-directed therapies, which is associated with amphiregulin (AREG)-mediated activation of EGFR-STAT3 signaling.

Methods
Effects of MEK inhibition on the phosphorylation of multiple signaling proteins and EGF family ligands were assessed in vitro and in genetic mouse models and human PDX of pancreas cancer.

Results
Combined inhibition of MEK/STAT3 or MEK/EGFR resulted in sustained blockade of MEK, EGFR and STAT3 signaling, decreased cell invasion, colony formation and metabolic activity in vitro. Growth of flank PDAC xenografts and human PDX tumors were significantly decreased with combined MEK and STAT3 inhibition compared to vehicle or monotherapy. OS in PKT mice was extended to a median of 85 days with combined MEK and STAT3 inhibition vs. 52 days for vehicle treatment (p < 0.001). AREG release was significantly reduced with combined MEK/STAT3 inhibition. TACE siRNA in PDAC cells confirms the role of AREG release in mediating EGFR signaling and overcoming MEK inhibitor resistance. Evaluation of TACE activation and AREG shedding/release in response to MEK inhibition demonstrated that resistance to MEK inhibition in PDAC is mediated by reactivation of the STAT3 pathway, which is strongly influenced by increased AREG production.

Conclusion
Our study provides a strong rationale that AREG mediated EGFR-STAT3 pathway activation is a major resistance mechanism that impairs the efficacy of MEK inhibitors.
Plenary Session 8
Developing An Age Threshold to Define "Elderly" Patients with Trauma Related Septic Shock
Kothari AN, Blanco BA, Brownlee SA, Kuo PC
Loyola University Medical Center

Objective
Increasing age is a risk factor for the development of adverse events in trauma patients that develop septic shock during their hospital stay. At present, there is not a precise age definition where patient outcomes decline, independent of concurrent comorbid disease. The objective of this study was to determine the age threshold where outcomes in sepsis worsen.

Methods
Trauma patients that developed septic shock were identified using the 2012 National Trauma Data Bank. Nearest neighbor matching was used to match patients with inpatient mortality to those without mortality based on comorbid disease burden, gender, reason for diagnosis, injury severity score (ISS), and type of injury without including age as a matching variable. Smooth hazard estimates with boundary correction were used to define age-related mortality differences between matched groups.

Results
The final analytic cohort was 1,150 patients (575 per matched group) with a median age of 58 years (IQR 46-75). The lowest probability of mortality was for patients 19 years old (0%) and the highest was for patients 88 years old (93.3%). With each additional year, beginning at age 18, the risk of mortality increased on average of 1.1% per year. The hazard of mortality was stable from 18-44 years, slightly increased from 45-71 years, and significantly increased > 71 years.

Conclusion
Increasing age is independently associated with mortality after trauma-related septic shock. Risk of adverse outcomes significantly increases beginning at the age of 71, suggesting the age for defining an elderly patient in this population should be 71 years.
**Plenary Session 9**

**Triptolide in Combination with Conventional Chemotherapy Displays Enhanced Efficacy Against Pancreatic Cancer**  
*Modi S, Giri B, Banerjee S, Dudeja V, Saluja A*  
University of Miami

**Objective**  
Gemcitabine with nab-paclitaxel provide a survival benefit of ~6 weeks over gemcitabine alone in treatment of pancreatic cancer (PDAC). Drug combinations that help in reducing doses (to decrease toxicity) while providing better response are needed. We have previously shown that Minnelide (prodrug of triptolide) which is currently in phase-I trials is effective against pancreatic cancer in preclinical models. We evaluated the efficacy of triptolide/Minnelide in combination with reduced doses of conventional therapy in PDAC.

**Methods**  
Effect of low-dose paclitaxel (0-25nM) alone or in combination with low-dose triptolide (25nM) on the viability (WST-8 assay), apoptosis (caspase-3 and PARP-cleavage), cell-cycle progression (flow-cytometry) and development of aberrant mitotic figure (confocal-microscopy) in PDAC cell lines was evaluated. The effect of low-dose triptolide alone or in combination with gemcitabine+nab-paclitaxel against pancreatic cancer growth and metastases was evaluated in subcutaneous, orthotopic and syngeneic-tumor-implantation-model (STIM).

**Results**  
Combination of low-dose triptolide and paclitaxel was very effective in inducing M-phase arrest, activating apoptosis and inducing cell-death whereas either of the drugs, at low doses, did not induce these changes. The combination of Minnelide and low-doses gemcitabine+nab-paclitaxel was more effective in decreasing tumor burden, increasing survival and decreasing metastases in subcutaneous, orthotopic xenografts as well as in STIM model of PDAC, even when compared to standard doses of gemcitabine+nab-paclitaxel. Additionally, combination therapy effectively targeted both cancer and stromal parts of PDAC leading to a better treatment response.

**Conclusion**  
Triptolide/Minnelide synergizes with conventional chemotherapy, reduces the doses of these toxic drugs and achieves better efficacy in treatment of PDAC.
Objective
Little is known about the long-term recurrence risk for primary hyperparathyroidism (1HPT) following “curative” parathyroidectomy. This study aims to evaluate the risk of recurrent hyperparathyroidism in the 10 years following surgery.

Methods
We retrospectively identified patients with sporadic 1HPT undergoing initial parathyroidectomy between 11/1/2000-6/30/2005. Recurrence was defined as serum calcium >10.2mg/dL after 6-months from surgery. Kaplan-Meier estimates and Cox proportional hazards were used to evaluate disease-free survival and predictors of recurrence.

Results
We evaluated 196 patients with a 14.8% 10-year recurrence rate. Median time to recurrence was 6.3 years [IQR 3.4-10.8 years], and 34.5% of all recurrences were identified >10 years after surgery. There was no difference in recurrence between open and minimally invasive surgery (p=0.448). Double adenomas (DA) (p=0.006), intraoperative parathyroid hormone drop <70% (p=0.015), and young age (p=0.032) were predictive of disease recurrence. Multivariable analysis demonstrated that older age was protective against recurrence (HR 0.97, 95% CI 0.94-0.99, p=0.034) while DA (HR 3.52, 95% CI 1.23-10.08, p=0.019) was an independent predictor for recurrence.

Conclusion
The long-term recurrence rate for sporadic 1HPT after “curative” parathyroidectomy is likely higher than reported. With over 1/3 of our institutional recurrences at >10 years after the initial operation, long-term follow-up is essential.
Plenary Session 11
Engrailed-1 identifies the fibroblast lineage responsible for the transition from fetal scarless to adult scarring cutaneous wound repair
University of Hawaii, Stanford University

Objective
Early in utero cutaneous wounds heal without a scar. Many studies have offered possible explanations for this phenomenon but no definitive answer has emerged. We have previously characterized a scar-forming fibroblast lineage in the dorsal skin of adult mice defined by embryonic expression of Engrailed-1 (En1). Here, we investigate the role of this lineage during fetal wound healing.

Methods
En1-derived fibroblasts were traced by crossing En1Cre and ROSA26mTmG mice. A murine model of fetal scarless wound healing allowed for investigation of En1-derived fibroblast behavior before and after the scarless to scarring transition. En1-derived fibroblasts were characterized using flow cytometry and RNA sequencing analysis at various stages of embryonic development.

Results
Dorsal wounds created at embryonic day 16.5 (e16.5) healed scarlessly with minimal connective tissue deposition. However, wounds created at e18.5 healed with substantial scar deposited primarily by En1-derived fibroblasts. The abundance of En1-derived fibroblasts and the expression of CD26, a previously identified marker of the En1 lineage, steadily increased from e12.5 through postnatal day 1. RNA sequencing analysis of En1-derived fibroblasts revealed that e18.5 fibroblasts express a highly fibrogenic program in comparison to e16.5 fibroblasts in unwounded skin (*p<0.01).

Conclusion
The En1 lineage of fibroblasts plays a critical role in the transition from scarless wound healing during fetal development. These results hold promise for the development of therapeutic approaches to fibrotic disease and adult wound healing.
**Objective**
To determine if patients incorporate hospital volume information in their hospital selection process.

**Methods**
Analysis of California’s statewide database for patients undergoing pancreatectomy from 1996 to 2009. Bypassed hospitals were defined as those that performed pancreatectomy and were closer to patients’ residence ZIP code than their destination hospital. “Favorable” hospital choice was defined as bypassing low-volume hospitals to present to a high-volume hospital (>20 cases/year). “Unfavorable” hospital choice was defined as bypassing at least one high-volume hospital to present to a low-volume hospital.

**Results**
A total of 14,884 patients were analyzed. The majority (78.9%) of patients bypassed the closest pancreatectomy hospital – bypassing a median of 6 hospitals (IQR 2-20) and travelling a median of 14.0 miles (IQR 6.6-32.4 miles). Only 3,135 (21.1%) patients underwent pancreatectomy at the nearest providing hospital, travelling a median of 3.0 miles (IQR 1.7-5.6 miles). There were 9,047 (77%) patients who bypassed a higher volume hospital to get to their destination hospital. Patients were more likely to make “unfavorable” hospital choices than “favorable” choices (59.9% vs 15.1%, p<0.001). Additionally, 5,700 (48.5%) patients bypassed a hospital with lower mortality rates to get to a destination hospital with higher mortality rate.

**Conclusion**
The majority of pancreatectomy patients appear to be directed to certain hospitals for their care irrespective of hospital volumes or mortality rates, likely secondary to insurance tiering or limited networks. The referral process should consider incorporating outcomes data into informed decision-making.
MDM4 is a potential novel therapeutic target in hepatocellular malignancy
Baylor College of Medicine

Objective
Most patients with hepatocellular carcinoma (HCC) and hepatoblastoma (HB) lack mutations in the p53 tumor suppressor gene. Therefore, we examined therapies targeting MDM4 and MDM2, the major negative regulators of p53, in these cancers to reactivate the p53 pathway.

Methods
HB and HCC cell lines were analyzed in the presence of NSC207895 (MDM4 inhibitor) with assays for proliferation, cytotoxicity, and anchorage independent growth. qPCR and immunoblotting assays were performed to assess levels of MDM4, p53, and downstream targets after MDM4 inhibition. The specificity of NSC207895 was tested by blocking its effectiveness with p53 inhibition or MDM4 overexpression. In vivo experiments using an HB xenograft model were also performed.

Results
NSC207895 showed significant effects in cytotoxicity and growth assays on all cell lines tested with wild-type p53. Huh-7 and Hep3B, two cell lines with mutant and null p53, respectively, showed resistance to MDM4 inhibition. NSC207895 at sub-lethal concentrations was effective at inhibiting anchorage-independent growth in all three HB cell lines. qPCR and immunoblotting assays for MDM4, p53, and downstream targets (PARP, p21, BAX, PUMA) showed strong activation of p53 with MDM4 inhibition. These targets were also elevated with treatment of Hep3B (p53 null), as was p63, this supports a relationship between MDM4 and p63. Inhibition of p53 and overexpression of MDM4 both blocked the effectiveness of NSC207895, supporting its specificity on the MDM4-p53 axis. In vivo experiments with NSC207895 in a nude mouse HB xenograft model showed decreased tumor growth.

Conclusion
MDM4 inhibition should be considered as a potential therapeutic pathway for hepatocellular malignancies.
Scientific Session IIA – 2
Disparities in Access to Care and Outcomes in Patients with Adrenocortical Carcinoma
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Medical College of Wisconsin

Objective
Surgical resection remains the mainstay of treatment for patients with adrenocortical carcinoma (ACC). The aim of the current study is to examine disparities in access to surgical resection and identify factors associated with overall survival following surgical resection.

Methods
The National Cancer Database (NCDB) was queried to identify patients with ACC between 2004-2013. Clinicodemographic characteristics were abstracted. Logistic regression analysis was used to examine the factors associated with surgical resection, and a multivariate Cox proportional hazards model was utilized to identify predictors of survival after resection.

Results
Surgical resection was performed in 2,007/2946 (68%) ACC patients; this included resection (1,408;70%); resection with contiguous organs (355;18%); debulking (31;2%); surgery NOS (82;4%); and others (131;7%). On multivariate logistic regression analysis controlling for all clinicodemographic factors, surgery was less likely to be performed in patients ≥55 years [odds ratio (OR):0.73, (95% confidence interval {CI}0.58-0.9);p=0.007], males [OR:0.81, (95%CI:0.67-0.97);p=0.028], African-Americans [OR: 0.67 (95%CI:0.49-0.92);p=0.015], who had government insurance [OR:0.62 (95%CI: 0.50-0.76);p=0.001], or were treated at community cancer centers [OR:0.56 (95%CI:0.46-0.69);p<0.001]. In a multivariate Cox regression analysis adjusting for all clinicodemographic and treatment variables, older age (≥55 years) [hazard ratio (HR):1.27 (95%CI: 1.07-1.50);p=0.005] and insurance (government) [HR:1.25 (95%CI:1.06-1.46);p=0.006] were predictors of worse survival.

Conclusion
These findings suggest that there are demographic disparities in patients undergoing surgical resection for ACC. However, after adjusting for patient and clinical characteristics, only patient age and insurance status were predictors of worse survival in patients undergoing surgery for ACC. More data are needed to determine the factors driving this disparity.
Metabolomic Perturbations Induced by Imatinib Exposure in Gastrointestinal Stromal Tumor Cells
University of Miami

Objective
The aim of this study was to evaluate chronological metabolic changes in GIST cells treated with imatinib mesylate.

Methods
Human GIST T1 cells were incubated with imatinib 0.5 mM. Metabolomic profiling was performed in extracted cell pellets at 12, 24 and 48 hours, after viability and cell counting was done, and compared with controls via acquisition of 1H-NMR spectra using a 500MHz spectrometer equipped with a cryoprobe. Standard, one-dimensional NOESYpr1D pre-saturation pulse program was used. Spectra were further processed and Partial Least Squares Discriminant Analysis (PLS-DA) model was used for characterization of chronological biochemical differences.

Results
By 48 hours of exposure of cells to imatinib, glucose initially increased then significantly decreased with gradual decrease of lactate and minimal changes in pyruvate and succinate denoting shifting from cytosolic to mitochondrial glycolysis, this was echoed with consumption of glutamine and glutamate. Glutathione and phosphocholine gradually decreased by a factor of 1.6 for each, aspartate, myo-inositol, glycerophosphocholine and taurine gradually increased by a factor of 1.6, 1.7, 2.6 and 1.3, respectively, suggesting inhibited growth and invasiveness. Cell viability was directly correlated to changes in choline, creatine phosphate, myo-inositol and taurine (correlation coefficient >0.65). PLS-DA model suggested that changes in myoinositol, glycerophosphocholine, glutamate, aspartate, phosphocholine and glutathione were the metabolites mostly influencing the in cells with continued exposure to imatinib (R2X=0.76, R2Y=0.60,Q2(cum)=0.20).

Conclusion
Metabolomic profiling of GIST cells exposed to imatinib provides mechanistic insights into longitudinal changes of the mitochondrial and glycolytic pathways and can potentially provide novel as well as complementary therapeutic targets.
Scientific Session IIA – 4
Role of Leptin in enhancement of proliferation of Gastro-Intestinal Stromal Tumor (GIST-T1) cells.
University of Miami

Objective
In vitro and in vivo studies have demonstrated increased expression of leptin receptors in various human malignancies. We aimed to investigate leptin’s proliferative role in induction and regulation of GIST-T1 cells.

Methods
Anticipated inhibitory effect of imatinib on proliferation of GIST-T1 cells was demonstrated at different doses up to 72 hours. Cells were incubated with exponential doses of leptin alone and proliferative effects determined by cell viability (MTS) and flow cytometric assays. Western blotting was done to assess for Ob-R receptors. Subsequently, cells were stimulated with leptin (12 & 48 ng/ml), and increasing concentrations of NF-kβ inhibitor (Curcumin) (0 – 51 ng/ml) to assess possible secondary pathways of leptin effect; Cells were then treated with increasing doses of imatinib (0 uM – 0.1 uM) with re-evaluation of proliferation activity.

Results
Cells exhibited a 20-60% increase in proliferative activity with leptin alone at doses > 12 ng/ml; western blotting showed absence of Ob-R receptors suggesting leptin activity is likely through secondary signal transduction pathway(s). NF-kβ inhibitor nullified the leptin induced proliferation at all doses, denoting possible leptin action via an IL-6 mediated pathway. NF-kβ inhibitor, at a dose of 17 ng/ml combined with imatinib (at all doses) rendered maximum inhibitory effect on proliferation of GIST-T1 cells in the presence of leptin.

Conclusion
Leptin was shown to have a proliferative effect on GIST-T1 cells, albeit possibly via an IL-6 mediated pathway. Further analyses identifying mechanisms of leptin activity via IL-6 are required to identify possible molecular therapeutic targets.
Scientific Session IIA – 5

Metastatic/Recurrent Gastrointestinal Stromal Tumors (M/R-GIST): Does surgical resection improve survival?

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University of Miami

Objective
We aimed to examine the role of surgical resection in M/R-GIST patients receiving Tyrosine kinase inhibitors (TKI).

Methods
Electronic databases were searched. Quality studies comparing progression free (PFS) and overall survival (OS) in patients undergoing TKI therapy with or without curative intent surgery were included. Pooled risk ratios with 95% confidence intervals (CI) for PFS and OS at 1, 3 and 5-years were calculated.

Results
Search strategy yielded 101 studies, of which 19 studies met the selection criteria with a total of 900 patients: 364 received TKI alone, 199 received TKI+surgery, 308 had responsive disease and 244 had progressive disease. Meta-analysis of included data showed an increased PFS at 1 and 3-years (RR=0.58, 95% CI:0.36 – 0.94; RR=0.55, 95% CI:0.35 – 0.88, p = 0.02); and OS at 1 and 3-years (RR=0.27, 95% CI 0.10 – 0.74; RR=0.33, 95% CI:0.21 – 0.54; p <0.01) for TKI followed by surgery group. R0/R1 patients had longer OS than R2 patients. TKI responsive patients had an increased PFS at 1 and 3-years (RR=0.25, 95%CI:0.16 – 0.38; RR=0.60, 95%CI:0.48–0.74;p<0.001); and OS at 1, 3, and 5-years (RR=0.14, 95% CI 0.08 – 0.27; RR=0.24, 95% CI:0.13 - 0.42; RR=0.35. 95% CI:0.18 – 0.66; p <0.001).

Conclusion
Surgical resection improves PFS and OS at 1 and 3 years in metastatic/recurrent GIST especially in TKI responsive patients. The results should be viewed with caution since most included studies were retrospective. Randomized controlled trials are needed to examine the optimum timing and long term outcomes of surgery in these patients.
Scientific Session IIA – 6
CDK4/6 and MEK Inhibition Overcome STAT3-mediated Chemoresistance in KRAS mutant Pancreatic Cancer
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University of Miami

Objective
Ras proteins are felt to be “undruggable”. We now propose a novel approach to overcome this resistance by targeting MEK and CDK 4/6, two key downstream effectors of KRAS.

Methods
Expression of Retinoblastoma (Rb) and ERK protein levels in KRAS wild-type and mutant human PDAC cell lines was determined at baseline and with MEK (MEK162) and/or CDK4 (LEE011) inhibition. The effects of combined therapy on cell-cycle progression, colony formation, and invasion were determined. Ptf1acre/+;LSL-KrasG12D/+;Tgfbr2flox/flox (PKT) mice were treated with CDK4/6 and MEK inhibition and transcriptomic profiles were obtained by performing RNAseq.

Results
Combined inhibition of CDK4/6 and MEK decreases pRB and pMAPK expression, delays cell cycle progression, decreases colony formation, and decreases invasion in the KRAS mutant cell lines. GSEA of wild type mouse pancreata vs. control mouse tumor revealed significant upregulation in the MYC targeted pathway, a key regulator of Ras mediated therapeutic resistance. Overall survival (OS) in PKT mice treated with MEK162 or LEE011 alone was not significantly different compared to controls, but mice receiving combined CDK4/6 and MEK inhibition exhibited a 400% increase in OS (59 vs. 251.5 days). Combined CDK4/6 and MEK inhibition significantly downregulated IL-6/STAT3, Kras, EMT, and IL-2/STAT5 related pathways compared with control mice.

Conclusion
Targeting KRAS in PDAC through downstream inhibition of MEK remains ineffective due to upregulation of STAT3 signaling. Targeting two key downstream effectors of KRAS signaling with combined inhibition of CDK4/6 and MEK overcomes STAT3 mediated chemoresistance and results in significantly enhanced therapeutic efficacy in the aggressive PKT genetic mouse model of PDAC.
Scientific Session IIA – 7
Effect of Complications After Pancreatectoduodenectomy on Adjuvant Therapy Utilization and Survival in Patients with Pancreatic Cancer
Le AT, Hnoosh D, Huang B, Dineen SP, Hosein PJ, Saeed H, Durbin EB, Kudrimoti MR, Anthony LB, McGrath PC, Tzeng CW
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Objective
Background: While adjuvant therapy (AT) is a necessary component of multimodality therapy for pancreatic adenocarcinoma (PDAC), its application can be hindered by post-pancreatectoduodenectomy (PD) complications. The primary aim of this study was to evaluate the impact of post-PD complications on AT utilization and overall survival (OS).

Methods
Methods: Patients undergoing PD without neoadjuvant therapy for Stage I-III PDAC at a single institution (2007-2015) were evaluated. 90-day postoperative major complications (PMC) were defined as Grade ≥3. Records were linked to the Kentucky Cancer Registry for AT/OS data. Early AT was given <8 weeks; late 8-16 weeks. Initiation >16 weeks was not “adjuvant.” Complication effects on AT timing/utilization and OS were evaluated.

Results
Results: Of 94 consecutive patients treated with surgery upfront with AT data, 64 (68%) received AT (41 [44%] early; 23 [24%] late). There were 32 (34%) patients with low-grade complications and 22 (23%) with PMC. With PMC, only 5/22 (23%) patients received early AT and 12/22 (55%) received any (early/late) AT vs. 36/72 (50%) early AT and 52/72 (72%) any AT without PMC (p=0.024). PMC were associated with worse median OS (7.8mo, 95% confidence interval-CI, 3.9-19.8, vs. 21.8mo, 95% CI 18.1-26.1, without PMC, p<0.001). Multivariate analysis showed independent predictors of OS included AT (HR-0.48), tumor >2cm (HR-2.83), node-positivity (HR-2.07), and PMC (HR-2.69, all p<0.02).

Conclusion
Conclusions: PMC were associated with late and decreased AT utilization and negatively impacted OS. These data suggest that strategies to decrease PMC and treatment sequencing alternatives to increase multimodality therapy rates may improve oncologic outcomes for PDAC.
Molecular profiling of cholangiocarcinoma in an inducible Notch1 knockdown system
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Objective
Novel targeted strategies are imperative for advanced cholangiocarcinoma (CCA) because current systemic therapy has demonstrated no limited efficacy. There is, therefore, an urgent need for identification of novel therapeutic targets. The objective of the present study was to determine the alteration of downstream targets and growth suppression in Notch1 knockdown cholangiocarcinoma (CCA) as needed for the identification of molecular targets for the effective treatment.

Methods
CCA cell line, CCLP-1 was used to create the doxycycline inducible Notch1 knockdown system. Effect of Notch1 knockdown was assessed by MTT assay and expression levels of mRNA and protein. Cell lysates were analyzed via Western blotting for downstream targets of Notch1 and apoptotic markers. Effects of Notch1 depletion on AKT inhibitor treated cells were analyzed.

Results
Dose-dependent reduction in cellular proliferation was observed with corresponding level of Notch1 reduction. Growth inhibition was due to apoptosis including an increase in the pro-apoptotic marker cleaved PARP and reduction in the anti-apoptotic protein survivin. Additionally, cell cycle arrest was inhibited via reduction of cyclin D1. Combination with specific Akt inhibitor resulted in an increased expression of cleaved PARP. Notable downstream targets of Notch1 were also altered including an increase in Hes-1 and decrease in NFκB expression.

Conclusion
Notch1 knockdown effectively inhibits CCA growth in cell culture, providing evidence to the fundamental role of Notch. Importantly, combined Akt inhibition provides insight into dual targeted therapies. This is the first study to create a stable, inducible Notch1 knockdown and effectively profile the molecular alterations in cholangiocarcinoma.
Robotic Esophagectomy Outcomes To date. A systematic review and meta-analysis
Sharma R, Ripat C, Pendola F, Picado O, Sleeman D, Merchant N, Livingstone A, Yakoub D
University of Miami

Objective
The aim of this systematic review was to assess the outcomes of robotic assisted esophagectomy (RAE).

Methods
A systematic literature search was performed using Medline (PubMed), Embase, Cochrane and Scopus. Studies reporting on short and long-term clinical outcomes of RAE from May 2006 to April 2015 were reviewed. Meta-analysis of clinical outcomes using random and fixed effect models was done by calculation of pooled relative risk with the corresponding 95% confidence interval (CI). Study quality was assessed using STROBE criteria.

Results
17 studies including 666 patients were reviewed, 2 studies compared RAE with thoracoscopic technique. 386(58%) had adenocarcinoma, 162(24%) had squamous cell carcinoma, other histologies in 118 (18%). Review of included data on RAE showed a median blood loss of 148 (R:10-5300) ml, operative time of 410 (R:120-807) minutes, length of hospital stay (LOS) of 10.4 (R:4-182) days, and ICU stay of 2 (R:0-136). Median number of lymph nodes harvested was 20, (R:3-68). 30-day mortality was (1.8%,n=12). Complications included cardiac(0-42.9%), pulmonary(0-71.4%), vocal cord paralysis(0-37.5%), anastomotic leak(0-37.5%), wound infection(0-14.3%), and DVT/PE(0-9.5%). Meta-analysis of the two comparative studies showed significantly lower LOS (WMD -12.7 days,95%CI -21.1 to -4.3,p=0.003) and operative time (WMD -38.3,95%CI -67.2 to -9.4,p=0.0095) in the RAE group. There was no difference in lymph node harvest between the two groups. Post-operative complications were less in RAE group, yet they did not reach statistical significance.

Conclusion
RAE can be performed with comparable safety and oncologic outcomes to open and thoracoscopic techniques in select patients with esophageal cancer.
Scientific Session IIA – 10
Improved Survival after Hepatectomy for Intrahepatic Cholangiocarcinoma at Academic Cancer Centers
Berger NG, Hammad AY, Miura JT, Johnston FM, Christians KK, Tsai S, Turaga KK, Gamblin TC
Medical College of Wisconsin

Objective
Margin status is an important prognostic factor of survival following hepatectomy for intrahepatic cholangiocarcinoma (ICC). R0 resection for ICC correlates with improved recurrence-free survival and overall survival (OS). The present study hypothesized that surgical resection margins and survival rates vary between centers.

Methods
Patients with ICC undergoing hepatectomy were identified from the National Cancer Database (1998-2011). Treating centers were categorized as Academic Cancer Centers (ACC), and Community Cancer Centers (CCC). Rates of R0 vs. R1/2 resection were examined. OS was analyzed by Kaplan-Meier method, and Cox multivariate modeling identified independent predictors of survival.

Results
A total of 2,774 patients were identified. Hepatectomy was most often performed at ACC compared to CCC: 1,928 (69.5%) vs. 846 (30.5%). Hepatectomy at ACC was associated with higher rates of R0 resections compared to CCC (72.5% vs. 68.1%, p=0.018). Higher 30-day readmission rates were seen following hepatectomy at ACC (9.9% vs. 5.7%, p=0.002). Improved median OS was seen in ACC across all stages (25.8 months vs. 20.1 months; p<0.001). After adjusting for age, sex, ethnicity, cirrhosis, alpha-feto protein level, comorbidity, disease stage, and margin status, hepatectomy at ACC was independently associated with improved OS (Hazards ratio: 0.79 [95%CI 0.62-0.99, p=0.041]).

Conclusion
ACC have higher rates of negative resection margins for ICC, but higher readmission rates following surgery. Survival is higher at ACC compared to CCC, suggesting that site of care plays a role in patient outcomes.
The Impact of Neoadjuvant Radiation in Patients with Esophageal Adenocarcinoma is Short-Lived

University of Alabama at Birmingham

Objective
The Dutch CROSS trial established the role of neoadjuvant chemoradiation (CXRT) in treating esophageal cancer (EAC). Tumor response to CXRT has been shown to correlate to survival after resection. Consequently, research has focused on determining the degree of tumor response to CXRT for surgical patient selection. However, survival from EAC is related to the development of systemic disease, not loco-regional recurrence. We sought to examine the effect of radiation therapy in the setting of long-term survival for EAC.

Methods
We retrospectively reviewed all patients who underwent surgical resection of EAC at a single institution from 2000-2010 after CXRT.

Results
100 patients were included in this study; 32 demonstrated a complete pathological response (PCR). PCR was associated with improved disease-specific survival (DSS) (median survival 33.5 vs. 16.6 months, 5-year survival 44 vs. 23.3%, P=0.026). This corresponded to improved DSS over the first three years after resection (1 year: 92 vs. 60.7%; 2 years: 63.5 vs. 39.5%, 3 years: 48.9 vs. 28.8%). However there was no continued survival benefit beyond 3 years post-resection. Of the 15 patients who survived greater than 5 years, only 5 (33%) had PCR. This was significantly lower than the 17/21 (81%) with PCR and a DSS of less than 1 year (P=0.0061).

Conclusion
Pathological response to CXRT is associated with improved survival for resected EAC. However this benefit seems to be limited to the first 3 years after resection and does not apply to long-term survival. Patients with residual disease found after CXRT should not be excluded from surgical resection.
Scientific Session IIA – 12
Mapping of Notch1 Promoter by HDAC inhibitor Treatment and the Gene Activation in NE Cancers
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University of Alabama at Birmingham

Objective
It is known that Notch signaling is minimally active in neuroendocrine (NE) cancer cells and the induction of Notch isoforms alter the malignant neuroendocrine phenotype. Although the induction of Notch1 by Histone Deacetylase Inhibitors (HDACi) appeared to be the result of increased Notch1 expression at the transcriptional level, the effects of HDACi on the Notch1 promoter regulation have not been determined thus far. The aim of our study is to investigate the molecular mechanism of HDACi activation on the Notch1 pathway.

Methods
We functionally characterized the Notch1 promoter using deletion mapping. The mapping started with the truncated genomic DNA fragment fused with a luciferase reporter, transfected into BON cell, a carcinoid cell line, screened for luciferase activity. Protein-DNA binding was then performed by electrophoretic mobility shift assay (EMSA).

Results
HDACi, Thailandepsin-A, were shown to induce luciferase activity controlled by a small distal region of Notch1 promoter, from -80 to +1 of the start codon ATG. Further, we identified a functional DNA motif that is responsible for HDACi induction located at -70 to -62 of the Notch1 promoter region. Thus, an in vitro assay, EMSA revealed the transcription factor-DNA complex firm in the flanking sequence.

Conclusion
We have identified the DNA motif located in the Notch1 promoter region that is responsive to HDACi. This understanding of how HDACi act on the Notch1 promoter may lead to the development of future novel therapies for neuroendocrine cancers.
Absence of HSP 70 in Tumor Microenvironment Inhibits Pancreatic Cancer Growth.  
University of Miami

Objective
While the role of Heat Shock Protein-70 (HSP70) in pathogenesis of pancreatic-cancer is known, it role in tumor-microenvironment has not been studied. Our current study’s aim was to evaluate the role of HSP70 in tumor stroma and immune cells on pancreatic-cancer growth.

Methods
Pancreatic tumor pieces or cancer cell line arising from cancer developing in Pdx1-Cre;K-Ras +/LSLG12D;p53R172H/+ (KPC) model were implanted in the pancreas of C57BL/6 (WT) or HSP70-knockout (Hsp70−/−) mice. Tumor weight at 30 days was compared between groups. In a different experiment Pancreatic-Stellate-Cells (PSCs) from HSP70-/- or WT mice were co-injected with KPC cells in WT-background and tumor growth evaluated. In-vitro the ability of splenocytes harvested from HSP70-/- or WT mice (which were exposed to KPC cancer cells) to induce cytotoxicity in KPC cancer cells was measured.

Results
Lack of HSP70 in tumor-microenvironment led to reduced growth of pancreatic-cancer in both surgical implantation (Tumor weight (gm), expressed as mean±SEM. Hsp70−/− 0.448±0.1 vs WT-1.413±0.1) and orthotopic injection model (Tumor weight (gm), expressed as mean±SEM. Hsp70−/− -0.14±0.09 vs WT-1.232± 0.16). Co-injection of HSP70-/- PSCs with KPC cells did not induce inhibition of tumor growth when compared with KPC cells injected with WT-PSC suggesting that the inhibitory effect may not be stroma dependent. Intriguingly, co-incubation of HSP70-/- splenocytes with KPC cells led to greater cell cytotoxicity when compared to WT splenocytes suggesting enhanced immune mediated cancer killing in the absence of HSP70.

Conclusion
Absence of HSP70 in the tumor-microenvironment inhibits pancreatic-cancer growth possibly by enhancing immune mediated cytotoxicity
Scientific Session IIA – 14
Pancreatic neck and body tumors: is central pancreatectomy better than distal pancreatectomy? An updated meta-analysis
University of Miami

Objective
Pancreatic endocrine and exocrine insufficiency and post-operative pancreatic fistula (POPF) remain unresolved complications of pancreatectomy. Central pancreatectomy (CP) has been an alternative technique to distal pancreatectomy (DP) to preserve pancreatic parenchyma. The aim of this meta-analysis was to evaluate postoperative clinical outcomes in patients undergoing both methods.

Methods
Online database search of PubMed, MEDLINE, EMBASE, SCOPUS, COCHRANE, and GOOGLE SCHOLAR was performed (2000 – Present); key bibliographies were reviewed. Studies comparing patients undergoing (CP) and (DP) for pancreatic neck and body tumors, assessing postoperative outcomes were included. Calculated pooled relative risk (RR) with the corresponding 95% confidence intervals (CI) by random and fixed effects models were used in the meta-analysis. Study quality was assessed using STROBE criteria.

Results
15 out of 97 studies met our selection criteria. These included a total of 983 patients; CP=450, DP=533. Median age was 49 years. Meta-analysis of included data showed that CP had significantly less endocrine insufficiency (RR:0.22;CI:0.14-0.35,p<0.001); exocrine insufficiency (RR: 0.31; CI: 0.19-0.50, p<0.001). Nonetheless, CP had significantly longer operative time (SMD:0.51;CI:0.37-0.64, p=0.002) and significantly higher overall morbidity rate (RR:1.44; CI:1.16-1.80,p=0.001); also POPF was significantly higher in CP as compared to DP (RR:1.56; CI:1.15-2.11,p<0.004). There was no significant difference between CP vs. DP when comparing Length of Stay, operative blood loss and abdominal abscess formation.

Conclusion
CP has less endocrine and exocrine insufficiency than DP, yet has longer operating time and POPF. Prospective randomized controlled trials are necessary to evaluate these results in depth with all other patient and disease factors accounted for.
Scientific Session IIA – 15
Distal pancreatectomy with and without spleen preservation for benign and low grade malignant tumors: systematic review and update meta-analysis of short term postoperative outcomes
University of Miami

Objective
The value of spleen preservation with distal pancreatectomy (DP) for benign and low grade malignant tumors remains unclear. The aim of this study was to evaluate the short term postoperative clinical outcomes in patients undergoing DP with splenectomy (DPS) or spleen preservation (SPDP).

Methods
Online database search of PubMed, MEDLINE, EMBASE, SCOPUS, COCHRANE, and GOOGLE SCHOLAR was performed (2000–Present); key bibliographies were reviewed. Studies comparing patients undergoing DP with either DPS or SPDP were included. Relative risks and corresponding 95% confidence intervals (CI) by random effects models of pooled data were calculated. Study quality was assessed using STROBE criteria.

Results
19 out of 68 studies met selection criteria. These included 1652 patients in total; 521 underwent SPDP while 1131 underwent DPS. Median age was 63 years. Meta-analysis of included data showed that SPDP patients had significantly less operative blood loss (SMD -0.42; 95% CI -0.78 to -0.07,P= 0.01), shorter hospital stay (SMD -2.26,95% CI -3.74 to -0.79,P=0.002), less fluid collections (RR 0.69; 95% CI 0.47 – 0.99,P= 0.04), postoperative splenic/portal vein thrombosis (RR=0.35; 95% CI 0.22 – 0.57,P<0.001) and new onset postoperative diabetes (RR 2.10, 95% CI 1.00 to -4.42,P=0.05). There was no difference in operative time or post-operative pancreatic fistula (POPF) (RR=0.95; 95% CI 0.65–1.40,P=0.80). Subgroup analysis of studies that used ISGPF criteria showed that DPS patients had more Grade B/C POPF (RR=1.35; 95% CI 1.08–1.70,P=0.01).

Conclusion
SPDP for benign and low grade malignant tumors is associated with shorter hospital stay and decreased morbidity compared to DPS
Scientific Session IIA – 16
Pancreatic Neuroendocrine Tumors (PanNETs): Resection Vs Observation survival analysis
Finkelstein P, Picado O, Gadde T, Sharma R, Merchant N, Yakoub D
University of Miami

Objective
This study aims to compare survival of patients with PanNETs undergoing either surgical resection or non-surgical management.

Methods
A comprehensive search of MEDLINE, EMBASE, PubMed, SCOPUS and the Cochrane database was conducted (2006-present). All studies for patients with PanNETs comparing surgical with non-surgical management were included. The STROBE checklist was used for quality assessment of included studies. Pooled risk ratios (RR) along with 95% confidence intervals (CI) for overall survival (OS) at 1, 3, and 5 years were calculated.

Results
Meta-analysis showed statistically significant improved OS in patients undergoing resection compared with non-surgical management at 1 (RR=1.281, CI: 1.064–1.542, p = 0.009), 3 (RR=1.837, CI:1.594–2.117, p<0.001), and 5 years (RR=2.103, CI: 1.50 – 2.945, p<0.001). Subgroup analysis of patients with nonfunctioning PanNETs also showed significantly improved OS in the resection group at 1 (RR= 1.240, CI: 0.778 – 1.975 p=0.366), 3 (RR= 1.847, CI: 1.477–2.309, p<0.001), and 5 years (RR=1.767, CI:1.068 – 2.924, p=0.027). Subgroup analysis of patients with PanNETs ≤ 2 cm in size, all of which were nonfunctioning, also showed improved survival in the resection group at 1 (RR= 1.177, CI: 0.441 – 3.147 p = 0.745), 3 (RR=1.695 CI: 1.269 – 2.264, p<0.001), and 5 years (RR=2.210 CI: 1.749 – 2.791 p<0.001).

Conclusion
Surgical resection of PNETs is associated with improved OS compared to non-surgical management. The improved OS with surgical resection is seen in patients with non-functional tumors and tumors greater or less than 2 cm. Prospective, randomized controlled trials are needed to further detail and support these findings.
Objective
In retrospective studies, transient hyperthyroidism after parathyroidectomy occurs in one third of patients. The role of thyroid manipulation in this process remains unclear.

Methods
With institutional approval, data were prospectively collected for patients who had parathyroidectomy from 10/14–8/15. TSH levels were drawn 1-2 weeks after surgery. We examined surgical extent, anatomic findings, disruption of the thyroid capsule, instruments used, middle thyroid vein ligation, anesthetic medications, and clinical outcomes. Patients with concomitant thyroid surgery or preoperative thyroid hormone supplementation were excluded.

Results
Of 101 patients, 90 had primary hyperparathyroidism (HPT), 3 had secondary HPT and 8 had tertiary HPT. 45 patients had bilateral exploration and surgery was reoperative in 12. 32 (31.7%) patients developed postoperative hyperthyroidism. Of 4 who had symptoms, 1 required propranolol and another required cardioversion for atrial fibrillation. 30/32 patients became euthyroid without intervention by 3 months. Among examined factors on univariable analysis, multiglandular disease (p=0.03), bilateral exploration (p=0.008), blunt retraction (p=0.003), and lack of ephedrine use intraoperatively (p=0.005) each predicted postoperative hyperthyroidism. On multivariable analysis, bilateral exploration (OR 3.99, CI 1.07–14.82, p=0.04) increased the likelihood of postoperative hyperthyroidism and ephedrine use reduced it (OR 0.28, CI 0.1-0.77, p=0.013). Overall, patients with unilateral exploration had a significantly lower rate of postoperative hyperthyroidism than those with bilateral exploration (17% vs 45%, p=0.001).

Conclusion
Hyperthyroidism after parathyroidectomy is common (32%) and usually self-limited. The condition is significantly affected by anesthesiology use of ephedrine and by bilateral exploration (4-fold). TSH should be routinely assessed postoperatively in patients managed with routine bilateral exploration.
Scientific Session IIB – 2
Encapsulated FVPTC: Are These Tumors Really Benign?
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University of Alabama at Birmingham

Objective
Follicular variant papillary thyroid cancer (FVPTC) is a well differentiated thyroid cancer thought to be slightly more aggressive than papillary thyroid cancer. Total thyroidectomy is the common treatment. However, recent studies suggest that the encapsulated form of FVPTC (eFVPTC), a subtype reported to behave more like a benign lesion, can be treated with thyroid lobectomy alone. The objective of this study was to determine if the eFVPTC behaves less aggressively than the non-encapsulated variant (neFVPTC).

Methods
A prospectively collected endocrine surgery database was reviewed for all patients with FVPTC on surgical pathology between 1999-2012. Pathologists re-reviewed histology to determine if the tumor was eFVPTC or neFVPTC.

Results
Of the 68 patients, 27(40%) had eFVPTC and 41(60%) had neFVPTC. The mean age was 48 years and 63% were female. Fifty-four (84%) out of 64 patients who had a total thyroidectomy received radioactive iodine. eFVPTC was more common in females than in males (49% vs. 24%, p=0.043). The mean age of the 5 patients with lymph node involvement was 34 ± 2.3 years compared with the patients without (vs 49.9 ± 6.8, p < 0.0001). The eFVPTC group had lower rates of cervical LN involvement (4% vs 10%, p=0.6411). In the median follow-up of 3 years only 2 patients had recurrence: one with eFVPTC and one with neFVPTC. None of the patients had distant metastasis or died of their disease.

Conclusion
eFVPTCs appear to have a lower rate of cervical lymph node metastases compared to neFVPTCs, but recurrent disease may be seen in both subtypes.
Preoperative Ultrasound Finding of an Intra-thyroidal Lesion Justifies Empiric Thyroid Resection in Patients with Primary Hyperparathyroidism and Missing Parathyroid Glands

University of Alabama at Birmingham

Objective
The reportedly low incidence of intra-thyroidal parathyroid glands has dissuaded many surgeons from performing empiric thyroid resections for missing parathyroid glands during parathyroid surgery. However, the evidence for this approach remains equivocal, and more data are needed regarding the incidence of intra-thyroidal parathyroids and surgical complication rates after empiric thyroid resections in order to guide surgical decision-making. We hypothesize that empiric thyroid resection for a missing parathyroid gland is appropriate in the setting of a positive preoperative ultrasound finding.

Methods
We retrospectively reviewed all patients who underwent parathyroidectomy for primary hyperparathyroidism at a single institution from 2004-2010.

Results
Of 942 patients undergoing surgery for primary hyperparathyroidism, 253 patients (27%) underwent concomitant thyroid resection during the initial operation. Forty-five patients (17.7%) were found to have an intra-thyroidal parathyroid on pathologic review, of which 15 patients did not have preoperative ultrasound findings of a thyroid lesion (5.9%). Patients undergoing concomitant thyroid resection had a greater major complication rate than those who did not require thyroid resection (5.9 vs. 2.0%, P=0.0045). The incidence of intra-thyroidal parathyroids in patients undergoing empiric thyroid resection with positive ultrasound findings and a missing gland during neck exploration was 11.9%.

Conclusion
Intra-thyroidal parathyroid glands are more prevalent than previously thought in patients with primary hyperparathyroidism. Risk benefit analysis does not support performing blind thyroid resection for a missing gland in patients without preoperative ultrasound findings of a thyroid lesion. However, if preoperative ultrasound findings demonstrate an intra-thyroidal lesion, empiric thyroid resection can be performed safely with an effective outcome.
Scientific Session IIB – 4
Even in Comparable Patients, Non-Elective Paraesophageal Hernia Repair Portends Worse Outcomes: A Propensity-Adjusted Analysis
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Objective
Non-elective paraesophageal hernia (PEH) repair is associated with greater morbidity and mortality compared to elective repair. However, patients undergoing non-elective repair are often older, with more comorbidities. We sought to determine whether postoperative morbidity and mortality differed between non-elective and elective PEH, after accounting for differences in pretreatment characteristics which impact the propensity for non-elective surgery.

Methods
Data were abstracted for 924 patients who underwent PEH repair (1997-2010). Propensity scores were generated for pre-treatment variables; exposure was defined as non-elective repair. After adjusting for propensity for non-elective repair, odds of 30-day/in-hospital mortality and major complications after non-elective surgery were determined.

Results
Non-elective PEH repair was performed in 171/924 patients (19%). Overall mortality was 2.3% (n=21) with major complications in 22% (n=201). After accounting for propensity for non-elective surgery and adjusting for age $\geq 80$ and age-adjusted Charlson Comorbidity Index (CCI) score $\geq 6$, odds of mortality with non-elective repair was nearly 3 times greater (OR 2.74, CI 0.93-8.1), and odds of major morbidity nearly 2 times greater (OR 1.67, CI 1.07-2.61) than for elective repair (Table). CCI score $\geq 6$ was found to have good specificity (88%) and sensitivity (76%) for predicting mortality regardless of elective or emergent repair.

Conclusion
Non-elective repair of large paraesophageal hernias is associated with worse outcomes than elective repairs, even after using propensity for non-elective repair to account for significant differences in baseline characteristics. This analysis provides further support for elective repair of symptomatic large PEH, even in elderly patients or those with significant comorbid diseases.
Scientific Session IIB – 5
Discordance Between SCIP Adherence, Postoperative Outcomes, and Readmissions: Implications for New Joint Commission Standards
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Objective
We analyzed how adherence to SCIP INF and SCIP VTE affects targeted postoperative outcomes (wound complication, DVT, PE) using all-payer data.

Methods
A retrospective review (2007-2011) was conducted using HCUP SID Florida and Medicare’s Hospital Compare. The association between SCIP adherence rates and outcomes across 355 included surgical procedures was measured using multilevel mixed-effects linear regression models.

Results
160 acute care hospitals and 809,178 patients were included. Over 5 years, SCIP INF-1,2,3 adherence improved by 12.5%, 8.0%, and 20.9%, respectively, while postoperative wound complications decreased by 29.7%. When controlling for time, SCIP INF-1 adherence was associated with improvement of postoperative wound complication rates ($\beta$=-0.0044, $p=0.005$), while SCIP INF-2 adherence was associated with increased wound complications ($\beta$=0.0031, $p=0.018$). SCIP VTE-1,2 adherence improved 14.6% and 20.2%, while postoperative DVT and PE decreased 23.3% and 7.1%. SCIP VTE-1 and 2 adherence were both associated with increased postoperative PE when controlling for time (SCIP VTE-1: $\beta=0.0019$, $p<0.001$; SCIP VTE-2: $\beta=0.0015$, $p<0.001$). Readmission analysis found SCIP INF-1 adherence to be associated with improved 30-day wound complication rates when controlling for patient and hospital characteristics ($\beta=-0.0021$, $p=0.032$), while SCIP INF-3 adherence was associated with increased 30-day wound complication rates when controlling for time ($\beta=0.0007$, $p=0.04$).

Conclusion
Only SCIP INF-1 adherence was associated with improved outcomes. The Joint Commission has retired SCIP INF-2,3 and SCIP VTE-2, and made SCIP INF-1 and VTE-1 reporting optional. Our study supports continued reporting of SCIP INF-1.
Scientific Session IIB – 6
Gender Differences in Outcomes After Endovascular Aneurysm Repair
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Objective
Previous studies have shown that women derive less benefit from EVAR due to more challenging anatomy. This study examines whether the differences in outcomes between genders persist with current EVAR devices.

Methods
An IRB-approved review was performed on patients who underwent elective EVAR procedures between 2005 and 2013. Operative outcomes including morbidity, mortality, and overall EVAR durability based on the incidence of unplanned graft-related secondary interventions (SI) (i.e., open conversion, proximal or distal extensions) were collected.

Results
181 patients met the study inclusion criteria: 150 males and 31 females. Median follow up was 40.3 months. Higher rates of unplanned intraoperative interventions were performed in women (42% vs 21%, p = 0.022). There was no in perioperative mortality between genders. The overall durability of EVAR extrapolated as time to secondary intervention (SI) was 91% at 2 years and 85% at 5 years (see figure). There was no difference in long term durability and mortality between genders. Severe iliac artery tortuosity (HR 4.8, p < 0.05) and aortic neck angle greater than 60 degrees (HR 4.7, p = 0.022) were predictors of SI. Women were found to have statistically significant iliac artery tortuosity (p < 0.001) and smaller iliac artery diameters (p < 0.001). Surprisingly, COPD (HR 0.13, p <0.05) and current smoking status (HR 0.26, p =0.012) were seemingly protective factors for SI following EVAR.

Conclusion
The overall long term durability of EVAR is similar between genders. Though women had more challenging aortoiliac anatomy, outcomes were not different compared to men.
Scientific Session IIB – 7
Predictors of Aortic Annular Size
Chan P, Villa M, Cook CC, Gleason TG, Morell VO, Tsai PI, Chu D
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Objective
As transcatheter aortic valve replacement (TAVR) is being applied to lower and intermediate risk cohorts, accurate sizing of the aortic annulus is crucial in minimizing paravalvular leak or annular disruption. We aim to identify variables which may help to predict the true aortic annular size using surgically implanted aortic valve size as a surrogate marker.

Methods
From January 2010 to June 2012, we retrospectively reviewed 72 consecutive patients who underwent surgical aortic valve replacement. Information on size of implanted valve, gender, patient height, weight, body surface area, and body mass index were collected. Pearson product-moment correlation analysis was used to determine the degree of correlation between size of implanted valve and various predictors.

Results
Thirty-six (n = 26) percent of patients underwent isolated AVR. The majority were male (99%, 71/72). Average size of the implanted aortic valve was 23.7 ± 1.9 mm. Average patient height, weight, body surface area, body mass index were 176.8 ± 7.2 cm, 94.2 ± 19.5 kg, 2.1 ± 0.2 m2, and 30.1 ± 5.7 kg/m2 respectively. Pearson product-moment correlation coefficients between implant aortic valve size and patient height, weight, body surface areas, body mass index were 0.5, 0.2, 0.3, and 0.05 respectively.

Conclusion
Of the potential predictors, patient height had a high degree of positive correlation to implanted aortic valve size while body mass index had relative low degree of correlation. Preoperative patient height may be used as an additional marker in selecting the ideal valve size in TAVR procedures.
Scientific Session IIB – 8
Racial Disparities in Post-Operative Complications for Patients Who Die After Surgery
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University of Alabama at Birmingham

Objective
To determine the contribution of race to post-operative complications in patients who died after major abdominal surgery.

Methods
We queried the 2012-2013 American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) cohort for all patients who died within 30-days after major abdominal surgery and stratified patients by race. Primary outcome was post-operative complications. Univariate/bivariate comparisons and backwards stepwise logistic regression analysis were used to identify predictors of selected complications.

Results
Of 5,677 patients who died within 30 days after major abdominal surgery, 87.5% and 12.5% were white and black, respectively. Compared to white patients, black patients who died had more pre-existing co-morbidities including diabetes mellitus (31.5% vs 23.1%), hypertension (75.0% vs 67.8%), ASA class 4 or higher (60.4% vs 52.2%), smoking (23.3% vs 18.6%), and poor functional status (8.9% vs 5.1%) (p<0.05). On unadjusted comparison, black patients experienced significantly higher rates of 3 or more total postoperative complications (39.9% vs 32.6%), cardiac (33.4% vs 19.9%), renal (19.0% vs 14.9%), bleeding (44.6 vs 38.7%) and respiratory complications (55.7% vs 50.1%) in addition to longer in-hospital lengths of stay (12 days vs 10 days). On multivariate analysis, black race remained an independent predictor for having more than 3 post-operative complications (Odds Ratio [OR] 1.35, 95%-Confidence Interval [CI] 1.1-1.6) and for cardiac complications (OR 2.0, 95%CI 1.7-2.5).

Conclusion
Black patients who die after major abdominal surgery suffer from significantly more postoperative complications than white patients even after adjustment for differences in co-morbidities. In particular, black patients have two times higher odds of post-operative cardiac complications.
Scientific Session IIB – 9
Stricter intraoperative parathormone monitoring criterion may reduce recurrent hyperparathyroidism after successful parathyroidectomy
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University of Miami

Objective
To determine whether a “stricter” >50% intraoperative parathormone (ioPTH) drop that returns to within normal range corresponds to lower rates of recurrence compared to the classic criterion in the surgical treatment of patients with primary hyperparathyroidism (pHPT).

Methods
A retrospective review of prospectively collected data of 814 patients with pHPT who underwent intraoperative parathormone monitoring (IPM) guided parathyroidectomy (PTX) from a single tertiary medical center was performed. All patients had elevated serum calcium and PTH levels. When a >50% drop of ioPTH level from highest pre-incision or pre-excision level was achieved after 10 minutes, the operation was completed. Patients were further subdivided as follows: patients with >50% ioPTH drop only (classic criterion) and patients with a >50% ioPTH drop to within normal range, defined as <65 pg/mL (stricter criterion). Operative success was defined as eucalcemia ≥6 months whereas recurrent hyperparathyroidism was defined as calcium and PTH levels above normal range >6 months after successful PTX.

Results
Of 681 patients with a mean follow-up of 42 months, overall success rate was 99.1% with a recurrence rate of 1.2%. In classic criterion patients, operative success was 98.1% (159/162) with a recurrence rate of 3.1% (5/159). In stricter criterion patients, operative success was 99.4% (516/519) with a recurrence rate of 0.6% (3/516). Although operative success was similar, the difference in recurrence rates between the classic and stricter groups was statistically significant, 3.1% vs. 0.6%, respectively (p<0.05).

Conclusion
Although a stricter IPM criterion does not appear to improve operative success, it may be protective against recurrent hyperparathyroidism.
Scientific Session IIB – 10
Why do patients receive care from a short-term medical mission? Observations from rural Guatemala
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Stanford University

Objective
Hospital de la Familia was established to serve the indigent population in the western highlands of Guatemala with a full-time staff of Guatemalan primary care providers supplemented by short-term missions of surgical specialists. The reasons for patients seeking care in this setting, as opposed to more dependable care from local institutions, are unclear. We sought to better understand motivations of patients seeking mission-based surgical care.

Methods
Patients presenting to the obstetric and gynecologic, plastic, ophthalmologic, general, and pediatric surgical clinics at the Hospital de la Familia from July 27 to August 6, 2015 were surveyed. The surveys assessed patient demographics, surgical diagnosis, location of home, mode of travel, and reasons for seeking care at this facility.

Results
Of 243 patients surveyed, 144 (59.3%) were female. Most patients reported no other medical condition (n=169, 67.9%) and no consistent income (n= 209, 83.9%). Almost half (n=109, 44.9%) traveled >50 km to receive care. The most common reasons for choosing care at this facility were reputation of high quality (51.8%) and affordability (42.6%); the least common reason was a lack of other options (6.7%).

Conclusion
Despite long travel distances and the availability of other options, reputation and affordability were primarily cited as the most common reasons for choosing to receive care at this short-term mission site. Our results highlight that while other surgical options may be closer and more readily available, reputation and cost play a large role in choice of patients seeking care.
Scientific Session IIB – 11
Outcomes of Hemodialysis Reliable Outflow (HeRO) Graft: A Systematic Review and Meta-Analysis
Louisiana State University Health Science Center - Shreveport

Objective
Our objective was to evaluate outcomes of upper extremity Hemodialysis Reliable Outflow dialysis grafts in end-stage renal disease patients with central vein occlusive disease.

Methods
Independent PubMed searches to identify articles published from January 2008 through December 2015 were conducted by two investigators. Search terms, “Hemodialysis Reliable Outflow Graft” and “HERO Graft” were used to identify potential articles. Abstracts of these articles were reviewed (n=13). Studies with more than 5 patients that reported patency data were included (n=8). Primary patency was the time between access placement until thrombosis or interventions used to maintain access function. Secondary patency was the time between access placement until access abandonment, thrombosis, or interventions used to reestablish patency. The fixed effect model was used to estimate primary and secondary patency at 12 months. Technical success, infection and bacteremia, and complications were also reviewed.

Results
Eight studies with 404 patients who satisfied inclusion criteria were analyzed. These were case series and non-randomized controlled studies. Technical success ranged between 86%-100%. The infection rate was between 0.14 to 0.72/1000 days. Common complications were bleeding, non-bacteremia infection, and steal syndrome. Some HeRO grafts were explanted due to infection and hematoma. The 12-month primary patency rate for HeRO grafts was 36% (95% CI, 31%, 41%). The corresponding secondary patency rate was 65% (95% CI, 59%, 70%).

Conclusion
The patency rate for upper extremity HeRO dialysis graft is acceptable in ESRD patients with central vein occlusive disease. The overall quality of published studies was low, and further studies are necessary to evaluate the outcomes of this device.
Scientific Session IIB – 12
Self-Reported Conflict of Interest and the Centers of Medicare and Medicaid Services Open Payments Database
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Objective
Recently, the Centers of Medicare and Medicaid Services developed an Open Payment Database (CMS-OPD) of conflict of interest (COI) reported by industry. We hypothesize there is discordance between industry-reported and physician self-reported COI among medical publications.

Methods
PubMed was searched for studies published between June 2013 and October 2015 by authors from the United States among six randomly selected specialties. COI were defined as payments received as honoraria, consulting fees, compensation for serving as faculty or as a speaker at a venue, research funding payments, or having ownerships/partnerships in companies. COI disclosed on the published manuscripts were compared to the financial relationships reported on the CMS-OPD. Surgical and medical specialties were compared using chi-square.

Results
There were 3,768 authors listed in the 600 selected manuscripts. Information was available from the CMS-OPD for 1630 (43.2%) authors of which 819 (21.7%) had a COI. When comparing COI disclosed by authors and the data in CMS-OPD, 555 (14.7%) authors had at least 1 COI in the database but did not declare any on the manuscript, and 172 (4.6%) authors had COI other than what they declared, for a combined rate of difference of 19.2%. Authors from surgical subspecialties were less likely to have a COI (20.8% vs 23.2%, p=0.08) and less likely to have an unreported COI (17.9% vs 21.5%, p=0.07).

Conclusion
There is substantial discordance between self-reported COI in published manuscripts as compared to those in the CMS-OPD. Further studies are needed to determine the reasons for these differences as COI may influence the validity of the design, conduct and results of a study.
The Relationship Among Relative Adrenal Insufficiency and Infection with Morbid Obesity

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University of Iowa Hospitals and Clinics

Objective
Evaluate clinical outcomes of patients with adrenal insufficiency (RAI) and morbid obesity.

Methods
We reviewed 2,368 patients who received a cosyntropin stimulation test during in-patient admission at the University of Iowa Hospital between January, 2007 and December, 2014. RAI was defined as baseline cortisol $\leq 15$ mcg/dl or $>34$ mcg/dl, or rise with cosyntropin stimulation $\leq 9$ mcg/dl. Body mass index (BMI), mortality, and infectious complications were examined.

Results
Out of 1,496 subjects, 1,045 (70%) met diagnostic criteria for RAI and 347(23%) with BMI $>35$ kg/m². Obesity is associated with increased risk for wound infection (OR=1.39, p=0.038) and mortality (OR=1.47, p=0.025). Patients with low baseline cortisol (LBC) appeared to have lower mortality (OR=0.45, p<0.001), but those with a negative stimulation test (NST) or high baseline cortisol (HBC) demonstrated increased mortality (OR=1.36, p=0.042 and OR=1.96, p<0.001 respectively). In terms of infection, LBC is associated with decreased risk for wound infection (OR=0.56, p=0.001); NST with risk for blood (OR=1.32, p=0.048) and peritoneal (OR=2.15, p=0.019) infection; and HBC with risk for blood (OR=1.95, p<0.001), peritoneal (OR=2.19, p=0.013), and pleural-respiratory infection (OR=1.64, p=0.001). Overall, there is a lack of relationship between RAI statuses and obesity and either ever having infection or number of infection episodes.

Conclusion
Adrenal function and obesity appear to have a complex relationship with morbidity and mortality. Existing literature definition of RAI may be insufficient because contradictory observations in outcomes. More research is needed to define RAI and its relationship with obesity and clinical outcomes.
Scientific Session IIB – 14
Enhanced Recovery After Surgery Reduces Disparities in Length-of-Stay for Colorectal Patients
University of Alabama at Birmingham

Objective
To determine whether racial disparities in post-operative length-of-stay (pLOS) are reduced through the Enhanced Recovery After Surgery (ERAS) pathway.

Methods
UAB patients undergoing ERAS for a colorectal procedure in 2015 were identified. ERAS patients were matched 1:1 by age, sex, race, and procedure with pre-ERAS patients from 2010-2014. An expected pLOS for each patient was calculated using the American College of Surgeons National Surgical Quality Improvement Project risk calculator. Patients were stratified by race and compared. Generalized linear models were used to estimate adjusted pLOS. Primary outcomes include pLOS and the observed-to-expected difference (OED) in pLOS.

Results
From 258 patients included for analysis (129 patients from each cohort), 57% and 29.8% were male and black, respectively. Top indications for surgery include malignancy (43%), inflammatory bowel disease (15%) and hernia/ostomy (14%). Compared to pre-ERAS, ERAS patients had a significantly reduced overall mean pLOS (4.7 vs. 6.4 days, P<0.01) and improved OED in pLOS (-0.4 vs. +1.4 days, P<0.01). In the pre-ERAS cohort, black patients had a significantly longer mean pLOS (8 vs. 3.9 days, P<0.01) and OED in pLOS (+2.9 vs. -1 days, P<0.01) compared to ERAS patients. After implementation of ERAS, racial disparities were reduced with black and white patients having similar pLOS (3.8 vs. 5 days, p=0.21) and OED in pLOS (-0.9 vs. -0.2, p=0.42).

Conclusion
Racial disparities in post-operative LOS after elective colorectal surgery are reduced with ERAS. Further investigations are necessary to identify the individual ERAS processes that may drive these effects.
Scientific Session IIB – 15

Selection criteria for general surgery fellowships: a survey of fellowship program directors

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Objective
Currently, the majority of graduating general surgery residents go on to pursue subspecialty fellowship training. However, little is known about what criteria fellowship program directors use when evaluating resident applicants. In this study we surveyed fellowship program directors to determine which aspects of the application they consider most important.

Methods
All fellowship program directors in twelve general surgery subspecialties in the United States and Canada were invited to complete an online survey. Participants were asked to rank the three most important categories used in selecting applicants to their program. To determine the overall order of importance of these categories, each was assigned a “rank score” by summing 3 points for each first choice response, 2 points for each second choice, and 1 point for each third choice.

Results
105 fellowship program directors (14% of those contacted) completed surveys. Overall, the interview was selected as the most influential component of the application with a “rank score” of 117, and 43% of respondents listing it as their most important criterion. Following the interview in order of importance were letters of recommendation from subspecialty faculty (rank score 99), the quality of the applicant’s residency program (rank score 51), ABSITE scores (rank score 41), and a phone call from faculty on the applicant’s behalf (rank score 28). Less important categories included research (rank score 16), publications (rank score 16), and the personal statement (rank score 3).

Conclusion
Fellowship program directors use the interview as the most important factor when selecting amongst resident applicants.
Prognostic Factors Of Anaplastic Thyroid Neoplasms In Adolescent and Young Adult Population

University of Alabama at Birmingham, Children’s Hospital of Alabama

Objective
The aggressive nature and rarity of anaplastic thyroid cancer (ATC) make it challenging to investigate patient outcomes. We utilized the National Cancer Database (NCDB) to determine the importance of age as a prognostic factor in ATC.

Methods
The 1998-2013 NCDB was queried for all adolescent and young adult (AYA) patients (≤39yo) with ATC diagnosis. They were then compared to older ATC groups [40-65yo (middle-age) and ≥66yo (elderly)], using log-rank to compare survival and chi-squared to compare tumor and treatment characteristics.

Results
Out of 3,154 patients with ATC, 39 fit the criteria of AYA. Median survival in the AYA group was 118.5 months compared to 61.1 and 66.2 months in the older groups respectively, resulting in Hazard Ratios (HR) of 1.96 (p=0.02) and 1.73 (p=0.06) for middle-age and elderly patients. All groups demonstrated similar tumor size and grade at time of diagnosis. The AYA group had greater mean period between diagnosis and definitive treatment and higher FNA rate prior to intervention. Following adjustment for confounders, mortality in older age groups was approximately 50% higher compared to AYA patients [HR=1.52 (p=0.16) and HR=1.56 (p=0.14), respectively], though these differences were not statistically significant. Within the AYA group no difference was noted in survival between surgery as initial treatment and non-surgical (radiation and chemotherapy) intervention only.

Conclusion
While ATC is an aggressive tumor with overall poor prognosis, AYA patients had increased survival compared to older populations. Survival rates in the AYA population were not affected by surgical intervention as initial therapy, compared to radiation and chemotherapy alone.
Scientific Session IIC – 1
Modifying the Embryonic Colonic Microenvironment Decreases Aganglionosis in Hirschsprung’s Disease
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Objective
To identify the molecular profile of the non-permissive colonic microenvironment in Endothelin Receptor B (EdnrB)-null animals (Hirschsprung’s disease) in order to determine how NCC interact with and colonize the gut microenvironment.

Methods
RNA was isolated from the terminal colon of embryonic day (E) 14 EdnrB-null and wild type (WT) embryos and Affymetrix GeneChip microarrays performed. Nine-way independent pair-wise comparison between EdnrB-null and WT was performed with log2 mean values equivalent to gross fold change of 1.5 used to identify differential expression. Quantitative PCR was performed to validate microarray findings. E13 colonic explants were cultured with a blocking peptide to Laminin and effects on NCC migration determined.

Results
Microarray analysis of WT and EdnrB-null terminal colonic tissue identified 131 differentially expressed genes (57 up-regulated, 74 down-regulated). qPCR confirmed the microarray results. Laminin, an extracellular matrix component, was markedly up-regulated in EdnrB-null colon. Ex vivo culture of E13 colon with laminin blocking peptide resulted in near-complete NCC colonization of the colon.

Conclusion
We have identified the molecular profile of EdnrB-null colonic tissue that is non-permissive to NCC advancement along the colon beyond E14. Competitive blockade of laminin, shown to be up-regulated in EdnrB-null vs. WT colonic tissue, results in increased advancement of NCC along the colon ex vivo. Future approaches directed at decreasing the length of aganglionosis may reduce long-term morbidity in HSCR patients.
Scientific Session IIC – 2
Open versus Laparoscopic Approach to Gastric Fundoplication in Children with Cardiac Risk Factors
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Objective
Gastric fundoplication is most common non-cardiac operation in children with congenital cardiac disease. While prior studies validated laparoscopy in this population, concerns persist for the effect of pneumoperitoneum on compromised cardiovascular physiology. We hypothesize that children with cardiac risk factors (CRFs) are likelier to undergo open fundoplication (OF) but experience greater morbidity than after laparoscopic fundoplication (LF).

Methods
Utilizing 2013 NSQIP-P Public-Use-File, pediatric patients undergoing LF and OF were stratified to none, minor, major, or severe CRFs. We evaluated demographics, comorbidities, post-operative morbidities, and mortality rates for these patients. Multivariate logistic regression determined pre-operative variables and post-operative outcomes associated with LF or OF.

Results
1501 fundoplication patients were identified with 92% undergoing LF. OF patients were likelier to have minor (Odds Ratio:2.27, p=0.002), major (OR:2.09, p=0.012) and severe CRFs (OR:3.55, p<0.001). Children ≤ 1 year (OR:3.38, p=0.048), and those with tracheostomy were likelier to have OF (OR:2.3, p=0.006). Overall, the OF group had higher post-operative morbidity (OR:2.41, p<0.001). Specifically, children with minor or major CRF’s experienced more complications following OF compared to LF. While rates of cardiovascular complications were similar between the two groups, the OF patients had significantly higher rates of infections, as well as pulmonary and hematological complications.

Conclusion
Open fundoplication is more common in patients ≤ 1 year old, patients with minor, major, or severe CRFs, and those with tracheostomy. Laparoscopic fundoplication should be considered in children with minor and major CRFs, as open fundoplication in those patients results in greater pulmonary, infectious, and hematological sequelae.
Incidental H. pylori gastritis found at time of gastrocutaneous fistula closure: Is treatment necessary?

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Objective
Over the last few years, an increasing number of gastrocutaneous (GC) fistula closure specimens at our institution have had Helicobacter pylori gastritis. We sought to review the outcomes of patients with this finding and assess their outcome.

Methods
After IRB approval, we reviewed patients who underwent GC fistula closure between 2012 and 2015. Demographics, diagnoses, procedures, pathology, outcomes and gastrointestinal (GI) symptoms were collected. Patients’ guardians were contacted by telephone, GI symptoms, treatments and post-operative complications were assessed. Descriptive statistics were performed.

Results
66 patients underwent GC fistula closure during this period. 37 (56%) had pathologic findings prompting testing for H. pylori. 6 (16%) had H. pylori positivity. One was treated. 48 of 66 patients completed the survey. Results revealed that 12 patients had GI symptoms before GC fistula closure; 8 resolved after surgery. Two of 6 patients with H. pylori reported abdominal pain before surgery and none after surgery. Seven had post-operative complications: 7 infections, 2 wound dehiscence. None of the H. pylori positive patients had complications. Median follow-up was 8.8 months (IQR: 5.4, 19.1). Median follow-up for H. pylori positive patients was 7.2 months (IQR: 5.5, 8.8).

Conclusion
In our small series, no difference in post-operative complications or incidence of GI symptoms in patients with and without incidental finding of H. pylori gastritis in their GC fistula specimen was seen. Most of the H. pylori positive patients were not treated and did not have identifiable adverse events. Long-term sequelae of untreated asymptomatic H. pylori gastritis are unknown.
Scientific Session IIC – 4
Hypertonic saline infusion after damage control laparotomy is not associated with risk of organ-space surgical site infection
University of Texas Health Science Center at Houston

Objective
To determine the relationship between use of hypertonic saline (HTS) on organ space surgical site infection (OSSSI) risk after damage control laparotomy (DCL) for trauma.

Methods
Single institution retrospective review of adult trauma patients who underwent DCL from 2009-2013. Those who died before the first take-back were excluded. Patients were dichotomized into two groups based on maintenance fluid following DCL: hypertonic saline at 30 ml/hr (HTS) and standard crystalloid resuscitation at 100-125 ml/hr (STD). A purposeful multivariate logistic regression model was created to compare the risk of OSSSI in the two groups, followed by propensity score adjustment.

Results
There were 1032 emergent trauma laparotomies performed during the study period with 368 (37%) patients undergoing emergent DCL. 42 died before the first take-back, leaving 326 for analysis: 182 (56%) in the STD group and 144 (44%) in the HTS group. The HTS group had higher Injury Severity Scores, increased use of intestinal discontinuity, less infused crystalloid volume, and decreased time to fascial closure (all p<0.05). 45 patients (25%) in the STD group and 46 patients (32%) in the HTS group had OSSSI (p=0.17). On the unadjusted multivariate analysis, significant risk factors for developing OSSSI were full thickness bowel injury, use of intestinal discontinuity, and no fascial closure within 4 days. The use of HTS was not significant (OR 1.68, 95% CI 0.98 – 2.91, p=0.06). Given the gross baseline between-group disparities, a propensity score was created based on potentially confounding covariates. Although bias was significantly reduced, standardized bias remained >20% for four covariates. Regression adjustment for the propensity score demonstrated that HTS was not associated with risk of OSSSI (OR 1.24, 95% CI 0.74 – 2.09, p=0.42).

Conclusion
HTS infusion after DCL is not associated with reduced risk of OSSSI.
Insurance Status and Race Affect Treatment and Outcome of Traumatic Brain Injury
University of Wisconsin – Madison

Objective
There is increasing evidence that race and socioeconomic factors affect patient outcomes after traumatic brain injury (TBI). Our goal was to assess the effect of race/ethnicity and insurance status on hospital length of stay, procedures performed, mortality, and discharge disposition after TBI.

Methods
This was a retrospective cohort study using the National Trauma Data Bank (2002-2012) to analyze patients aged 14-89 with one of five closed head injuries. Univariate regressions identified demographic and injury characteristics that were significant predictors of outcomes. These variables were then included in multivariate regression models.

Results
We analyzed 187,354 TBI patients. The sample was 78% White, 9% Black, 9% Hispanic, 3% Asian, and 1% Native American, and included 42% Medicare, 30% Private Insurance, 12% Uninsured, 8% Other Insurance, and 8% Medicaid. Compared to White patients, Black and Hispanic patients were more likely to have a TBI Procedure (Blacks OR=1.19, p<.001; Hispanics OR=1.33, p<.001), had longer hospital stays (Blacks coeff=1.02, p<.001; Hispanics coeff=0.61, p<.001), were less likely to die in the hospital (Blacks OR=0.90, p=.006; Hispanics OR=0.90, p=.007), and more (Black OR=1.09, p=.001) or less likely (Hispanic OR=0.76, p<.001) to be discharged to rehabilitation. Compared to the Privately Insured, the Uninsured were less likely to have a TBI Procedure (OR=0.90, p=.001), had longer hospital stays (coeff=0.24, p<.001), were more likely to die in the hospital (OR=1.37, p<.001), and less likely to be discharged to rehabilitation (OR=0.53, p<.001).

Conclusion
Race/ethnicity and insurance status significantly affect TBI patient outcomes, even after controlling for demographic and injury characteristics.
Activation of Notch Signaling in Human Biliary Atresia and Experimental Cholestasis

Children's Hospital Los Angeles

Objective
Biliary atresia (BA) is characterized by extensive intrahepatic proliferating ductular reaction and biliary fibrosis. However, the molecular mechanisms regulating ductular reaction and biliary fibrosis are unclear. Given the role of Notch signaling in biliary development, we hypothesize that activated Notch signaling is associated with ductular proliferation and biliary fibrosis in cholestatic liver diseases such as BA.

Methods
Statistical analyses were performed on normalized human BA microarray data acquired from http://genet.cchmc.org and on liver at time of Kasai and explant. Liver from mice with experimental cholestasis/biliary fibrosis induced using DDC diet for 2 weeks, human BA collected at the time of Kasai, and age-matched control liver samples were analyzed histologically using immunofluorescence (IF). Fibrosis was assessed by Sirius red staining. Gene expression analysis was performed by quantitative Polymerase Chain Reaction (qPCR).

Results
Analysis of human BA microarray data demonstrated significant increases in the expression of JAG1 (2.54 fold, p< 0.001) and its receptor NOTCH2 (1.5-fold, p<0.001). JAG1 and NOTCH2 were increased 15- and 120-fold respectively at explant (p<0.05). CK19 IF and Sirius red staining confirmed the presence of ductular reactions and fibrosis in both BA and DDC livers compared to normal. IF demonstrated increased expression of activated NICD1 and JAG1 proteins in BA and DDC. qPCR of DDC demonstrated an increase in the expression level of Notch-1, Notch-2 and Notch ligands Jag1, Dll1 and Dll4 (p<0.05).

Conclusion
NOTCH signaling is activated in human BA and experimental model of cholestasis and may contribute to the ductular reaction and biliary fibrosis associated with cholestatic liver diseases.
Scientific Session IIC – 7
Targeting Cancer Stem Cells via STAT3 Inhibition Improves Survival in a Minimal Residual Disease Mouse Model of Neuroblastoma
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Objective
Most children with high-risk neuroblastoma succumb to recurrent metastatic disease. Cancer stem cells (CSCs) are believed to be responsible for tumor recurrence and metastasis. We have previously characterized a neuroblastoma CSC subpopulation based on the expression of the G-CSF receptor, which activates the downstream JAK2-STAT3 pathway. STAT3 has been shown to play a major role in stem cell maintenance, tumor drug resistance, and metastasis. We hypothesized that the use of the STAT3 inhibitor, Stattic, would prolong survival in a neuroblastoma mouse model of minimal residual disease compared to traditional chemotherapy.

Methods
The human neuroblastoma cell line, SH-SY5Y, was injected into the kidney of 60 NSG mice. Mice underwent bioluminescent imaging to ensure tumor engraftment. After 7 days, primary tumors were resected. Mice were subsequently confirmed to have minimal residual disease and were then randomized into control(n=10), etoposide(n=10), Stattic(n=20), and Stattic+etoposide(n=20) groups. Kaplan-Meier technique was used to analyze survival with significance determined by log rank test. A p-value < 0.05 was considered significant.

Results
Both the Stattic and etoposide groups had significantly increased survival with a median survival of 28 days (range 16-36) and 38 days (range 31-43) compared to control mice with a median of 25 days (range 23-38, p≤0.02). The Stattic+etoposide group also demonstrated increased survival with a median of 27.5 days (range 10-44).

Conclusion
Targeting neuroblastoma CSCs via STAT3 inhibition improves survival in mice with minimal residual disease. Our in vivo data argues for further research into the utility of STAT3 inhibition in metastatic neuroblastoma.
Scientific Session IIC – 8
Robot-Assisted Surgical Techniques Utilization in American Pediatric Surgery Fellowships
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Objective
Robotic technology has had a transforming effect on both practice and education in many adult surgical specialties, but no standardized training guidelines in pediatric surgery exist. Our study assessed the prevalence of robotic procedures and extent of robotic surgery education in US pediatric surgery fellowships.

Methods
A Likert-scale questionnaire measured perceptions among US pediatric surgery fellowship directors regarding the role of the robot, its clinical utilization and integration in training.

Results
Forty-one of the 47 fellowship programs (87%) responded to the survey. While 67% of respondents indicated the presence of a robot in their facility, only 26% reported incorporating it in their practice (most commonly in hepatobiliary and foregut procedures). Among programs not utilizing the robot, most common reasons were lack of clear supportive evidence (81%), increased intraoperative time (80%), and incompatibility of instrument size to pediatric patients (79%). While 58% of responders believe in a future role for robot-assisted surgery in children, only 18% indicated that it should play a part in pediatric surgery education. Consequently, while over 66% of program directors underwent robotic training, only 29% of fellows receive such training during their fellowship, 27% participate in live robotic-assisted procedures, and 24% operate the console.

Conclusion
Most US pediatric surgery fellowships have access to a robot, but few utilize the technology in their practice. Only a minority of pediatric surgery fellows receives robotic training and even fewer participate in robotic cases. Further investigation is required into the technology’s potential benefits in the pediatric population and its role in pediatric surgery training.
Scientific Session IIC – 9
The microbiome of five body sites in critically ill adult surgical patients is highly disordered and unstable.
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Objective
The dynamics of the microbiome during critical illness is generally not understood. This study’s aim is to determine how critical illness alters the microbiome at five body sites.

Methods
Gut, skin, oral, trachea, and urine samples were collected from 32 patients every ~3 days in a surgical ICU. 16S sequences from extracted bacterial DNA were sequenced on Illumina MiSeq. QIIME and LEfSE was used for taxonomic analyses. Healthy subjects in the Human Microbiome (HMP) and American Gut (AmGut) project were used as controls.

Results
A mean of 10.8 samples (mean 7.8 days) were collected from 32 surgical ICU patients. Species richness was decreased at all time points in the gut and skin and over time in the oral cavity. Principal coordinates analysis showed differences in microbial composition at the skin, gut, and mouth relative to HMP and AmGut subjects. Samples from the skin, trachea, and mouth clustered together signifying a loss of site specificity in contrast to the gut and urine. Microbiome dominance by a pathogenic organism was more likely in ICU samples. LEfSE analysis revealed the enrichment of several pathogenic taxa and depletion of normal flora at the gut, skin, and oral cavity. Tracheal microbiome data in patients with pneumonia often showed offending organisms in significant abundance prior to diagnosis with culture.

Conclusion
The microbiota of critically ill patients undergoes significant transformation across multiple body sites. Microbiota data may portend clinical infections such as pneumonia. Further work is needed to determine the utility of microbiome monitoring in a clinical setting.
Scientific Session IIC – 10
Pediatric Near-Drowning Events: Do They Warrant Trauma Team Activation?
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Objective
The purpose of this study was to determine the incidence of traumatic injuries, factors associated with mortality and need for Pediatric Trauma Surgery involvement for children involved in drowning and near-drowning events.

Methods
An IRB-approved, retrospective chart review was performed at three ACS Pediatric Trauma Centers (2011-2014). Patients with fatal/nonfatal drowning ICD-9 codes or E-codes for fall into water, accidental drowning, or submersion were included. Bivariate analysis using chi-square or Fisher exact test for nominal variables and Mann-Whitney-U test for continuous variables was performed.

Results
363 patients [median 3.17 years (18 days-17 years)] met the inclusion criteria. Drowning sites included pool (81.5%), bathtub (12.9%), and natural water (5.2%). A witnessed fall or dive was reported in 34.9%, 57.9% did not fall or dive and 7% had an un-witnessed event. Most (82.9%) did not undergo cervical spine imaging; 24.5% underwent brain/head imaging. No patients received surgical intervention within 24 hours of presentation. Only 2.2% were admitted to the Pediatric Trauma service. 10.2% were discharged home from the emergency department. Overall mortality was 12.4%. Factors associated with mortality included transfer from outside hospital (p=0.016), presence of hypothermia on arrival (p<0.0001), GCS=3 on arrival (p<0.0001), drowning in a pool (p=0.013), or undergoing brain cooling at admission (p=0.011).

Conclusion
This is the largest reported series of pediatric near-drowning events. The majority of patients were admitted to non-surgical services and none required immediate surgical attention. These data suggest that routine Pediatric Trauma Surgery service involvement in patients with near-drowning events may be unnecessary.
Transcriptional Profiling Reveals Dynamic Changes in Neural Crest Cells and the Colonic Microenvironment During Enteric Nervous System Development
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Objective
The goal of this study was to elucidate the molecular mechanisms regulating Neural Crest Cell (NCC) migration/colonization of the Enteric Nervous System (ENS).

Methods
We used the NCC-conditional deletion of Endothelin Receptor B (EdnrB) model of HSCR, in which NCC express Yellow Fluorescent Protein (YFP). FACS separated YFP(+) NCC and YFP(-) non-NCC from the colonized (COL) and migratory wavefront (WF) regions of the colon of EdnrB-null and controls at embryonic (E) day 14.5, and YFP(-) non-NCC from the un-colonized (UC) region. Transcriptional profiling was performed with Affymetrix Mouse Gene ST 1.0 and pathway analysis with DAVID 6.7.

Results
To determine if NCC respond to the microenvironment, we compared EdnrB-Null NCC from the COL region to controls and WF NCC controls to COL controls. WF NCC were significantly enriched for 14 pathways including Neuronal Development, Cholinergic Signaling, Neurotransmitter Regulation, Synaptic Transmission and Neuronal Differentiation. COL NCC were not markedly different between groups. To determine if the colonic microenvironment responds to NCC, we compared WF non-NCC to UC, WF non-NCC to COL non-NCC, and UC non-NCC to COL. Enriched non-NCC transcription pathways included Inflammatory Response, Extracellular Matrix Organization, and Neuronal Differentiation.

Conclusion
We found novel patterns of gene expression in NCC and the colonic microenvironment in the conditional-deletion of EdnrB HSCR model. These results indicate that NCC respond to the microenvironment, perhaps independent the HSCR phenotype. Additionally, the microenvironment exhibits dynamic changes that may impact the ability of NCC to migrate/colonize the hindgut. These results suggest targets for further investigation in HSCR pathogenesis and therapy.
Scientific Session IIC – 12
Timing and Outcomes Of Ostomy Closure In Neonates Surviving Necrotizing Enterocolitis
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Objective
While traditionally, ostomy closure in neonates treated with intestinal diversion for necrotizing enterocolitis (NEC) has been suggested after 10 weeks postoperatively and at a weight of >2.5kg, we looked at the results of our process improvement project initiated in 2009, scheduling NEC ostomy closures within 6-8 weeks of initial surgery and to critically examine our patient outcomes comparing patients before and after this change.

Methods
We retrospectively reviewed NEC infants who underwent ostomy closure pre- and post-intervention (2007-2010). Data on patient characteristics, timing of surgery, and adverse events were collected and descriptive analysis performed.

Results
Seventy-five infants underwent ostomy creation for NEC during this period (48 pre-intervention, 27 post-intervention). Overall mortality was 11%, and 40% had ostomy-related adverse events. Despite the change in target timing for ostomy closure, the median time to ostomy closure did not change [pre-intervention: 10.5 (6-20) weeks; post-intervention: 10.0 (5-18) weeks, p=NS]. The median adjusted gestational age at ostomy closure were similar. Timing of ostomy closure did not affect post-operative complications but was associated with cardiac disease (OR=1.19, p=0.3) and bronchopulmonary dysplasia (OR=1.39, p=0.002). Post-operative mortality was associated with days on steroids and oxygen supplementation at the time of ostomy closure.

Conclusion
Appropriate waiting time between primary surgery for NEC and ostomy closure may be influenced more by infant clinical status rather than surgeon intent. Co-morbidities of prematurity continue to drive risks of poor surgical outcomes. Prospective multi-institutional study may help further elucidate these associations and identify optimal timing for ostomy closure.
Scientific Session IIC – 13
Is Fluoroscopic Enema Reduction an Effective Initial Treatment for Intussusception in Older Children?
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Objective
Intussusception is the most common cause of bowel obstruction in infants and neonates. Standard of care for children less than 3 years is fluoroscopic enema reduction (FER). Use of FER in older children is controversial. We utilized the Pediatric Health Information System (PHIS) database to determine whether older children are at higher risk for operative intervention and other morbidities, such that fluoroscopic reduction should not be attempted.

Methods
The PHIS database was reviewed from 1/1/2009-6/30/2014. Patients with chronic medical conditions were excluded. Individual patients were followed across admissions. Successful FER was defined as having had radiologic reduction without subsequent surgery for 6 months.

Results
7412 patients were identified. 6681 were <3 years. Of these, 175 (2.6%) underwent primary surgery, 1114 (16.7%) had surgery at some point after FER, and 5392 (80.7%) were successfully treated with FER. 731 patients were > 3 years: 176 (24.1%) underwent primary surgery, 105 (14.4%) had surgery after FER, and 450 (61.6%) were successfully treated with FER. The frequency of patients with a concurrent discharge diagnosis within a tumor category were similar in patients <3 years and patients >3 years (4.8% vs 6.3%, p = 0.07). The frequency of Meckel’s diverticulum was 2.3% in those <3 years and 13.5% in those >3 years (p <0.0001). Three patients died; all were <3 years. Less than 1% of older children were admitted to the intensive care unit as compared to 9.8% in those <3 years (p <0.01). Older age was not associated with increased risk of recurrent admission for intussusception (p = 0.58).

Conclusion
Although older children with intussusception were more likely to undergo operative intervention, PHIS data suggests that fluoroscopy may be a safe initial procedure for a majority of older children.
Surgical Informed Consent in Children: A Systematic Review
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Objective
We sought to analyze current literature on surgeon and parents’ understanding and role in the informed consent process for children undergoing surgery.

Methods
A systematic database search (Medline, EMBASE, PsycINFO, and EBM Reviews) was performed to identify manuscripts concerning any aspect of the surgical informed consent for children undergoing an invasive procedure. Articles analyzing informed consent in research studies, non-English language manuscripts, review articles, case reports/series, letters/commentaries and dentistry/nursing related articles were excluded. Articles meeting inclusion criteria were analyzed to identify common themes related to the process of informed consent.

Results
178 articles were identified on primary search, after removing duplicates and screening titles for relevance, 83 abstracts were reviewed. 32 additional abstracts were identified by secondary search. 12/115 articles met inclusion criteria. Analysis identified 5 different study themes. Information delivered during consent (Content) was studied in 5 (42%) articles, 3 (25%) studied the mechanics or delivery of the information (Delivery), 3 (25%) studied parent participation and discussion (Interchange), 6 (50%) articles discussed surgeons’ perceptions or the parents’ ability to understand or recall the information (Comprehension), and 5 (42%) articles evaluated surgeon or parent satisfaction or anxiety (Satisfaction). None of the articles studied all five categories.

Conclusion
Studies of the surgical informed consent process in children are scarce. Prospective studies evaluating surgeon and parent perception regarding the Content, Delivery, and Interchange of information as well as Comprehension and Satisfaction are needed to understand barriers to the surgeon-patient relationship and to optimize the informed consent process in children undergoing surgery.
Management of Anticoagulation in Acute Care: comparing complications and reversal strategies for trauma and emergency general surgery patients with prehospital rivaroxaban vs. warfarin use

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Objective
To describe a single center experience with trauma/emergency general surgery (EGS) patients taking rivaroxaban and evaluate outcomes compared with patients taking warfarin.

Methods
Trauma/EGS patients taking rivaroxaban or warfarin for afib/VTE over 2yr period at a single quaternary referral center were eligible. Patients were matched for injury/illness severity in a 1:2 ratio using propensity score matching. Primary outcome was bleeding complications, i.e. hemorrhage during admission or as a presenting problem. Secondary outcomes included invasive interventions, reversal, VTE and mortality. Conditional logistic regression determined AC association with bleeding complications, adjusting for age/sex, AC indication, coagulation assays, antiplatelets/other AC, comorbidities, renal impairment, and surgery.

Results
192 warfarin patients were matched to 96 rivaroxaban patients. Matched groups had no significant difference in age, sex, admission SBP/HR/hemoglobin, ISS (trauma), or ICU admission (p>0.05). There was no difference between rivaroxaban and warfarin for bleeding complications (37% vs 39%, p=0.59), VTE (4.2% vs 5.7%, p=0.52), or mortality (4.2% vs 5.8%, p=0.60). Fewer rivaroxaban patients underwent surgery/interventional radiology (IR) (32% vs 43%, p=0.03). There was no difference in interventions for bleeding (10% vs 12%, p=0.74). Rivaroxaban patients received reversal (34% vs 46%, p=0.02) or multiple reversal agents (20% vs 29%, p=0.04) less frequently. Regression analysis confirmed AC type was not associated with bleeding complications (rivaroxaban vs warfarin OR 0.83; 95%CI 0.33-2.07, p=0.69).

Conclusion
Reversal of rivaroxaban was less common and intense than for warfarin; despite this, bleeding complications and hemostatic interventions do not appear different between these AC types.
Scientific Session IIC – 16
Characteristics and outcomes in children with undifferentiated embryonal sarcoma of the liver: a report from the National Cancer Data Base
Baylor College of Medicine

Objective
Undifferentiated embryonal sarcoma of the liver (UESL) is a rare disease (incidence is 1 per million), and the current literature is mostly limited to small case series. We examined patient characteristics and outcomes in children with undifferentiated embryonal sarcoma of the liver using a multi-institutional database.

Methods
The National Cancer Data Base was queried for primary UESL diagnosed between 1998 and 2012 in patients <18-years of age. Demographic, disease, treatment characteristics, and outcomes were examined.

Results
A total of 103 patients (<18y) were identified. The five-year OS of the entire group was 86%. The best outcomes were seen in children who had tumors smaller than 15cm and were able to undergo surgical resection with or without chemotherapy. Margin free resection as achieved in 57% of children, however margin status did not appear to significantly affect survival. However all children with positive margins also received chemotherapy. The most common type of resection was hemihepatectomy (37%), followed by sectionectomy (10%), and trisectionectomy (10%). Orthotopic liver transplant was performed in 10 children, all of whom survived to five years.

Conclusion
Surgical resection with chemotherapy should be the mainstay of treatment in children with UESL, and is associated with very favorable outcomes. Negative surgical margins was not associated with improved survival. Orthotopic liver transplantation may be a viable method of attaining local control is tumors which would otherwise be unresectable.