

THE AMERICAN ASSOCIATION OF  
**ENDOCRINE  
SURGEONS**

**Thirty-First Annual Meeting**



*Direct all correspondence to*

**American Association of Endocrine Surgeons**

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**American Association of Endocrine Surgeons**

[www.endocrinesurgery.org](http://www.endocrinesurgery.org)

# AAES FUTURE MEETINGS

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April 10-12, 2011

**Houston, Texas**

Nancy D. Perrier, MD

April 29 - May 1, 2012

**Iowa City, Iowa**

Ronald J. Weigel, MD

April 14-16, 2013

**Chicago, Illinois**

Peter Angelos, MD, PhD

# TABLE OF CONTENTS

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FUTURE MEETINGS	2
OFFICERS AND COMMITTEES	4
PAST OFFICERS	5
OLIVER COPE AWARD RECIPIENTS	9
HONORARY MEMBERS	11
RESIDENT/FELLOW & POSTER AWARD RECIPIENTS	12
NEW MEMBERS	16
CONTRIBUTORS TO PAUL LoGERFO EDUCATION RESEARCH FUND	18
PAST MEETINGS	19
INVITED LECTURERS AT PAST MEETINGS	21
CONFERENCE INFORMATION	23
PROGRAM OVERVIEW	27
SCIENTIFIC PROGRAM	31
ABSTRACTS	40
POSTERS	109
CONSTITUTION & BYLAWS	116
MEMBERSHIP DIRECTORY	128
AAES MEMBERS GEOGRAPHICAL DIRECTORY	180
AAES MEMBER CONTACT INFORMATION SHEET	191
IN MEMORIAM	192

# OFFICERS, COUNCIL & COMMITTEES

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## **OFFICERS**

Janice L. Pasioka, President  
Douglas P. Evans, President-Elect  
Jeffrey E. Lee, Vice President  
Peter Angelos, Secretary-Treasurer  
Steven K. Libutti, Recorder

## **COUNCIL**

Michael J. Demeure  
Paul G. Gauger  
Richard A. Hodin  
William B. Inabnet, III  
Electron Kebebew  
Christopher R. McHenry  
Bradford K. Mitchell  
Julie Ann Sosa  
Geoffrey B. Thompson

## **LOCAL ARRANGEMENTS CHAIR**

Sally E. Carty

## **PUBLICATION AND PROGRAM COMMITTEE**

Michael Bouvet, Chair  
Peter Angelos  
David R. Farley  
Larry Kim  
Steven K. Libutti  
Fiemu Nwariaku  
Janice L. Pasioka  
Tina Yen

## **MEMBERSHIP COMMITTEE**

Bradford K. Mitchell, Chair  
Electron Kebebew  
Julie Ann Sosa

## **COMMITTEE ON EDUCATION AND RESEARCH**

William B. Inabnet, Chair  
Alan P. B. Dackiw  
Paul G. Gauger  
Richard A. Hodin  
Sareh Parangi  
Nancy D. Perrier  
Melanie L. Richards  
Renu Sinha

## **FELLOWSHIP COMMITTEE**

Allan B. Siperstein, Chair  
Peter Angelos  
Gerard M. Doherty  
William B. Inabnet  
Richard A. Prinz  
Sanziana A. Roman

## **ESC REPRESENTATIVE**

Sonia L. Sugg

## **AACE REPRESENTATIVE**

Martha A. Zeiger

## **SOAC REPRESENTATIVE TO ABS**

Richard A. Prinz

## **NSQIP REPRESENTATIVE**

Julie Ann Sosa

## **PAUL LOGERFO COMMITTEE**

John M. Monchik, Chair  
John A. Chabot

## **NOMINATING COMMITTEE**

Geoffrey B. Thompson, Chair  
Michael J. Demeure  
Janice L. Pasioka

# PAST OFFICERS

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## 1980-1981

Norman W. Thompson .....President  
Orlo H. Clark ..... Vice President  
John M. Monchik..... Secretary-Treasurer

## 1981-1982

Norman W. Thompson .....President  
Orlo H. Clark ..... Vice President  
John M. Monchik..... Secretary-Treasurer

## 1982-1983

Edwin L. Kaplan.....President  
Blake Cady ..... Vice President  
John M. Monchik..... Secretary-Treasurer

## 1983-1984

Stanley R. Friesen .....President  
John A. Palmer ..... Vice President  
John M. Monchik..... Secretary-Treasurer

## 1984-1985

Leonard Rosoff .....President  
John M. Monchik..... Vice President  
Stuart D. Wilson ..... Secretary-Treasurer

## 1985-1986

Chiu-An Wang .....President  
Edward Paloyan..... Vice President  
Stuart D. Wilson ..... Secretary-Treasurer

## 1986-1987

Oliver Beahrs .....President  
Robert C. Hickey ..... Vice President  
Stuart D. Wilson ..... Secretary-Treasurer

## 1987-1988

Edward Paloyan.....President  
Caldwell B. Esselstyn ..... Vice President  
Stuart D. Wilson ..... Secretary-Treasurer  
Jon A. van Heerden ..... Recorder

# PAST OFFICERS CONT.

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## **1988-1989**

John R. Brooks .....President  
Melvin A. Block ..... Vice President  
Richard A. Prinz..... Secretary-Treasurer  
Jon A. van Heerden ..... Recorder

## **1989-1990**

Colin G. Thomas, Jr .....President  
Carl R. Feind ..... Vice President  
Richard A. Prinz..... Secretary-Treasurer  
Jon A. van Heerden ..... Recorder

## **1990-1991**

Caldwell B. Esselstyn .....President  
Brown M. Dobyns ..... Vice President  
Richard A. Prinz..... Secretary-Treasurer  
Robert D. Croom, III ..... Recorder

## **1991-1992**

Stuart D. Wilson .....President  
Joseph N. Attie..... Vice President  
Blake Cady..... Secretary-Treasurer  
Robert D. Croom, III ..... Recorder

## **1992-1993**

Robert C. Hickey .....President  
Patricia J. Numann ..... Vice President  
Blake Cady..... Secretary-Treasurer  
Robert D. Croom, III ..... Recorder

## **1993-1994**

Orlo H. Clark .....President  
Glen W. Geelhoed ..... Vice President  
Blake Cady..... Secretary-Treasurer  
George L. Irvin, III ..... Recorder

## **1994-1995**

John M. Monchik .....President  
Jon A. van Heerden ..... Vice President  
Jay K. Harness ..... Secretary-Treasurer  
George L. Irvin, III ..... Recorder

# PAST OFFICERS CONT.

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## 1995-1996

Richard A. Prinz.....President  
Jeffrey A. Norton ..... Vice President  
Jay K. Harness ..... Secretary-Treasurer  
George L. Irvin, III ..... Recorder

## 1996-1997

Jon A. van Heerden.....President  
George L. Irvin, III ..... Vice President  
Jay K. Harness ..... Secretary-Treasurer  
Quan-Yang Duh..... Recorder

## 1997-1998

Blake Cady.....President  
E. Christopher Ellison ..... Vice President  
Paul LoGerfo ..... Secretary-Treasurer  
Quan-Yang Duh..... Recorder

## 1998-1999

George L. Irvin, III .....President  
Barbara K. Kinder..... Vice President  
Paul LoGerfo ..... Secretary-Treasurer  
Quan-Yang Duh..... Recorder

## 1999-2000

Jay K. Harness .....President  
John S. Kukora .....Vice-President  
Paul LoGerfo ..... Secretary-Treasurer  
Michael J. Demeure..... Recorder

## 2000-2001

Barbara K. Kinder.....President  
Martha A. Zeiger .....Vice-President  
Christopher R. McHenry..... Secretary-Treasurer  
Michael J. Demeure..... Recorder

## 2001-2002

Clive S. Grant.....President  
Miguel F. Herrera.....Vice-President  
Christopher R. McHenry..... Secretary-Treasurer  
Michael J. Demeure..... Recorder

# PAST OFFICERS CONT.

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## **2002-2003**

Quan-Yang Duh.....President  
Gary B. Talpos.....Vice-President  
Christopher R. McHenry..... Secretary-Treasurer  
Geoffrey B. Thompson ..... Recorder

## **2003-2004**

Paul LoGerfo .....President  
Ashok R. Shaha .....Vice-President  
Janice L. Pasieka..... Secretary-Treasurer  
Geoffrey B. Thompson ..... Recorder

## **2004-2005**

John A. Kukora .....President  
Andrew W. Saxe .....Vice-President  
Janice L. Pasieka..... Secretary-Treasurer  
Geoffrey B. Thompson ..... Recorder

## **2005-2006**

Robert Udelsman.....President  
Collin J. Weber.....Vice-President  
Janice L. Pasieka..... Secretary-Treasurer  
Douglas B. Evans ..... Recorder

## **2006-2007**

Christopher R. McHenry.....President  
John B. Hanks .....Vice-President  
Sally E. Carty..... Secretary-Treasurer  
Douglas B. Evans ..... Recorder

## **2007-2008**

Geoffrey B. Thompson .....President  
Terry C. Lairmore.....Vice-President  
Sally E. Carty..... Secretary-Treasurer  
Douglas B. Evans ..... Recorder

## **2008-2009**

Michael J. Demeure.....President  
Jeffrey F. Moley .....Vice-President  
Sally E. Carty..... Secretary-Treasurer  
Steven K. Libutti..... Recorder



# THE OLIVER COPE MERITORIOUS ACHIEVEMENT AWARD

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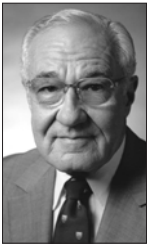
In April of 1984 at the American Association of Endocrine Surgeons meeting in Kansas City, Drs. Edwin Kaplan, Jack Monchik, Leonard Rosoff, Norm Thompson, and Stuart Wilson proposed to the Council a new achievement award. This award is to be given to a member of the AAES in recognition for contributions in the field of endocrine surgery as an investigator, teacher, and clinical surgeon. It is not an annual award but is to be given to members of our Association who have achieved the high standards for which the award was established.

On April 15<sup>th</sup>, 1985 at the annual meeting of the AAES in Toronto, our President Leonard Rosoff announced the first member to receive this award, Dr. Oliver Cope. In giving this award to Dr. Cope the decision of the Council was that from this day forward the award would be known as the Oliver Cope Meritorious Achievement Award for the American Association of Endocrine Surgeons.



**Oliver Cope, MD**

Professor of Surgery,  
Harvard University and the  
Massachusetts General Hospital  
Awarded in Toronto in April 1985.



**Stanley R. Friesen, MD, PhD**

Professor of Surgery, University of Kansas  
Awarded in Detroit, MI. in April 1994.  
Dr. Friesen served as the President of our Association in 1983.



**Norman W. Thompson, MD**

Henry King Ransom Professor of Surgery, University of Michigan.  
Awarded in Atlanta, GA in April 2001.  
Dr. Thompson served as our inaugural President in 1980 and 1981.

# THE OLIVER COPE MERITORIOUS ACHIEVEMENT AWARD CONT.

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**Jon A. van Heerden MD**

Professor of Surgery Mayo Clinic, Rochester, MN.  
Awarded in Charlottesville NC in April 2004.  
Dr. van Heerden served as our Recorder from 1987-89, as our Vice-President in 1994, and as President in 1996.



**Orlo H. Clark MD**

Professor of Surgery, UCSF Mount Zion Medical Center.  
Awarded in New York, New York in May 2006.  
Dr. Clark served as our Inaugural Vice President in 1980 and 1981, and as President in 1993.



**Edwin L. Kaplan**

Professor of Surgery, University of Chicago  
Awarded in Madison, WI in May 2009  
Dr. Kaplan served as our President in 1982-83

# HONORARY MEMBERS

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Individuals who have made outstanding contributions to the discipline of Endocrine Surgical Disease

**John L. Doppman**, Radiologist

**J. Aidan Carney**, Pathologist

**Stuart D. Flynn**, Pathologist

**Ian D. Hay**, Endocrinologist

**Virginia A. LiVolsi**, Pathologist

**A. G. E. "Ace" Pearse**, Endocrinologist

**Thomas S. Reeve**, Endocrine Surgeon

**F. John Service**, Endocrinologist

**Britt Skogseid**, Endocrinologist

**William F. Young**, Endocrinologist

# RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS

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The AAES Resident/Fellow Research Award was established in 1990 to encourage interest in endocrine surgery by those training as students and residents in general surgery. Presented work may be honored in either the Clinical or Basic Research categories.

The AAES Poster Competition was established in 2007.

## 1990

**Michael J. Demeure** - San Francisco, California

"Actin architecture of cultured human thyroid cancer cells: Predictor of differentiation?"

**Gerard M. Doherty** - Bethesda, Maryland

"Time to recovery of the hypothalamic-pituitary-adrenal axis after curative resection of adrenal tumors in patients with Cushing's syndrome"

## 1996

**Jennifer Meko** - St. Louis, Missouri

"Evaluation of Somatostating Receptor Scintigraphy in Detecting Neuroendocrine Tumors"

**Beth A. Ditkoff** - New York, New York

"Detection of Circulating Thyroid cells in Peripheral Blood"

## 1997

**Herbert Chen** - Baltimore, Maryland

"Implanted Programmable Insulin Pumps: 153 Patient Years of Surgical Experience"

**K. Michael Barry** - Rochester, Minnesota

"Is Familial Hyperparathyroidism a Unique Disease"

## 1998

**Julie Ann Sosa** - Baltimore, Maryland

"Cost Implications of the different management strategies for primary hyperparathyroidism in the US"

**David Litvak** - Galveston, Texas

"A novel cytotoxic agent for human carcinoid"

# RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS CONT.

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**1999**

**Andrew Feldman** - Bethesda, Maryland

"Results of Heterotrophic Parathyroid Autotransplantation: A 13 Year Experience"

**Alan Dackiw** - Houston, Texas

"Screening for MEN1 Mutations in Patients with Atypical Multiple Endocrine Neoplasia"

**2000**

**Electron Kebebew** - San Francisco, California

"ID1 proteins expressed in Medullary Thyroid Cancer"

**2001**

**Nestor F. Esnaola** - Houston, Texas

"Optimal treatment strategy in patients with papillary thyroid cancer: A decision analysis"

**Katherine T. Morris** - Portland, Oregon

"High dehydroepiandrosterone-sulfate predicts breast cancer progression during new aromatase inhibitor therapy and stimulates breast cancer cell growth in tissue culture: A renewed role for adrenalectomy"

**2002**

**Rasa Zarnegar** - San Francisco, California

"Increasing the Effectiveness of Radioactive Iodine Therapy in the Treatment of Thyroid Cancer Using Trichostatin A (TSA), A Histone Deacetylase (HDAC)"

**Denise M. Carneiro** - Miami, Florida

"Rapid Insulin Assay for Intraoperative Confirmation of Complete Resection of Insulinomas"

# RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS CONT.

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## 2003

**Petra Musholt** - Hanover, Germany

"RET Rearrangements in Archival Oxyphilic Thyroid Tumors: New Insights in Tumorigenesis and Classification of Hürthle Cell Carcinoma"

**Tina Yen** - Houston, Texas

"Medullary Thyroid Carcinoma: Results of a Standardized Surgical Approach in a Contemporary Series of 79 Consecutive Patients from the University of Texas, MD Anderson Cancer Center in Houston"

## 2004

**Rebecca Sippel** - Madison, Wisconsin

"Does Propofol Anesthesia Affect Intra-Operative Parathyroid Hormone Levels During Parathyroidectomy?: A Randomized Prospective Trial"

**David Finley** - New York, New York

"Molecular Analysis of Hürthle Cell Neoplasms by Gene Profiling"

## 2005

**Mark Cohen** - St. Louis, Missouri

"Long-Term Functionality of Cryopreserved Parathyroid Autografts: A 13-Year Prospective Analysis"

**Kepal N. Patel** - New York, New York

"MUC1 Plays a Role in Tumor Maintenance in Aggressive Thyroid Carcinomas"

## 2006

**Kyle Zano** - Evanston, Illinois

"Cost-Effectiveness Analysis of Minimally Invasive Parathyroidectomy for Asymptomatic Primary Hyperparathyroidism"

**Ashley Kappes Cayo** - Madison, Wisconsin

"Lithium Ions: a Novel Agent for the Treatment of Pheochromocytomas and Paragangliomas"

# RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS CONT.

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## 2007

**Tracy S. Wang** - New Haven, Connecticut

"How Many Endocrine Surgeons Do We Need?"

**David Yu Greenblatt** - Madison, Wisconsin

"Valproic Acid Activates Notch1 Signaling and Inhibits Growth in Medullary Thyroid Cancer Cells"

## 2008

**Elizabeth G. Grubbs** - Houston, Texas

"Preoperative Vitamin D (VITD) Replacement Therapy in Primary Hyperparathyroidism (PHPT): Safe but beneficial?"

**Linwah Yip** - Pittsburgh, Pennsylvania

"Loss of Heterozygosity of Selected Tumor Suppressor Genes in Parathyroid Carcinoma"

Poster: **Pierre Leyre** - Poitiers, France

"Does the Risk of Compressive Hematoma After Thyroidectomy Authorise One-Day Surgery?"

## 2009

**Insoo Suh, MD** - San Francisco, California

"Candidate Germline Alterations Predisposing to Familial Nonmedullary Thyroid Cancer Map to Distinct Loci on Chromosomes 1 and 6"

**Susan C. Pitt, MD** - Madison, Wisconsin

"Tertiary Hyperparathyroidism: is Less Than a Subtotal Resection Ever Appropriate? A Study of Long-term Outcomes"

Poster: **Matthew Nehs, MD** - Boston, Massachusetts

"Inhibition of B-RAFV600 Oncoprotein Prevents Cell Cycle Progression and Invasion In Vitro and Reduces Tumor Growth and Metastasis in an In Vivo Orthotopic Model of Thyroid Cancer"

Poster: **Bian Wu, BA** - Los Angeles, California

*"Utilization of Parathyroidectomy in the Elderly: a Population Based Study"*

# 2009-2010 NEW MEMBERS

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## ACTIVE MEMBERS

**Marybeth Hughes**  
*Bethesda, MD*

**Gregory Matzke**  
*Madison, WI*

**David Urbach**  
*Toronto, ON*

**Emad Kandil**  
*New Orleans, LA*

**Jyotirmay Sharma**  
*Atlanta, GA*

**Kevin Zirkle**  
*Knoxville, TN*

**Lloyd Mack**  
*Calgary, AB*

**Alexander Stojadinovic**  
*Washington, DC*

## ALLIED SPECIALIST MEMBERS

**Muthusamy Kunnimalaiyaan**  
*Madison, WI*

**Gregory Randolph**  
*Boston, MA*

**Phillip Pellitteri**  
*Danville, PA*

**David Terris**  
*Augusta, GA*

## CORRESPONDING MEMBERS

**Miljenko Bura**  
*Croatia*

**Yeo-Kyu Youn**  
*Seoul, South Korea*



# 2009-2010 NEW MEMBERS CONT.

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## CANDIDATE MEMBERS

**Shamly V. Amara**

*Ridley Park, PA*

**Azad A Jabiev**

*Springfield, MA*

**Wen Tsong Shen**

*San Francisco, CA*

**James Thomas Broome**

*Nashville, TN*

**James Lee**

*New York City, NY*

**Michael T. Stang**

*Pittsburgh, PA*

**Denise Carneiro-Pla**

*Charleston, SC*

**Carrie C. Lubitz**

*Boston, MA*

**Menno R. Vriens**

*Utrecht, The Netherlands*

**Erin Angela Felger**

*Washington DC*

**Kelly Lynn McCoy**

*Bethesda, MD*

**Leslie S. Wu**

*Portland, ME*

**Rula Geha**

*Middletown, NY*

**Julie F. McGill**

*Atlanta, GA*

**Linwah Yip**

*Pittsburgh, PA*

**Adrian M. Harvey**

*Calgary, AB CANADA*

**Giao Quynhthi Phan**

*Bethesda, MD*

## RESIDENT / FELLOW MEMBERS

**David Arrese**

*Columbus, OH*

**Louis C. Lee**

*Falls Church, VA*

**Matthew Alexander Nehs**

*Boston, MA*

**Jennifer Cannon**

*Miami, FL*

**Aarti Mathur**

*Bethesda, MD*

**Daryl A. Reid**

*Royal Oak, MI*

**Wesley Heath Giles**

*Chattanooga, TN*

**Travis J. McKenzie**

*Rochester, MN*

**Serene Shereef**

*Hershey, PA*

**Melanie Goldfarb**

*Boston, MA*

**Adrienne Melck**

*Pittsburgh, PA*

**Philip William Smith**

*Charlottesville, VA*

**Raymon Hugh Grogan**

*Mountain View, CA*

**Stacey Anne Milan**

*New Haven, CT*

**Christina E. Stevenson**

*Richmond, VA*

**Avital Harari**

*San Francisco, CA*

**Elliot Jonathan Mitmaker**

*San Francisco, CA*

**David Thomas Hughes**

*Ann Arbor, MI*

**Tricia A. Moo-Young**

*Chicago, IL*

# 2009-10 CONTRIBUTORS TO THE PAUL LOGERFO EDUCATIONAL RESEARCH FUND

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Dr. Paul LoGerfo passed away September 16, 2003 during his tenure as President of the AAES. Dr. LoGerfo was very interested in education and clinical research, and in his honor the AAES established the Educational Research Fund to support educational and research activities of the Membership. As of press time, the following members and organizations contributed in 2009-10:

**John Allendorf  
Peter Angelos  
Michael Bouvet  
Thomas A. Broadie  
Samuel Philip Bugis  
Blake Cady  
Bradford Carter  
Sally E. Carty  
John Anthony Chabot  
Herbert Chen  
Orlo H. Clark  
Gary C. Clark  
Mark Steven Cohen  
Peter F. Czako  
Lawrence A. Danto  
Steven Arnold De Jong  
Michael J. Demeure  
Gerard M. Doherty  
Doherty Mete Duren  
Douglas B. Evans  
Thomas Joseph Fahey  
Rafael Enrique Fajardo-  
Cevallos  
David R. Farley  
Kirk B. Faust  
Erin Felger  
Douglas L. Fraker  
Scott F. Gallagher  
Paul G. Gauger  
Randall D. Gaz  
Clive Stannard Grant  
John Bright Hanks**

**Richard James Harding  
Jay Kenneth Harness  
Keith S. Heller  
William M. Hopkins  
Marybeth Hughes  
Ted H. Humble  
William B. Inabnet III  
George L. Irvin  
Barbara K. Kinder  
Geeta Lal  
Jeffrey E. Lee  
John I. Lew  
Steven K. Libutti  
Dimitrios A. Linos  
Chung-Yau Lo  
LoGerfo Family  
Frank LoGerfo  
Jonathan S. Lokey  
Dougald C. MacGillivray  
Anne T. Mancino  
Michael R. Marohn  
David McAneny  
Christopher R. McHenry  
Barbra S. Miller  
Bradford K. Mitchell  
Akira Miyauchi  
John M. Monchik  
Vinod Narra  
Patricia J. Numann  
Takao Obara  
Jennifer B. Ogilvie  
Sareh Parangi  
Janice L. Pasieka**

**Subhash Patel  
Kepal N. Patel  
Nancy Perrier  
Richard Allen Prinz  
Christopher D. Raeburn  
Gregory William Randolph  
Melanie L. Richards  
S. Michael Roe  
Sanziana Roman  
Irving Bernard Rosen  
Melwyn J. Sequeira  
Ashok R. Shaha  
Dietmar Simon  
Renu Sinha  
Carmen Cecilia Solorzano  
Sonia L. Sugg  
Beth H. Sutton  
Mark Sywak  
Zane Tankel  
Colin G. Thomas, Jr.  
Geoffrey Bruce Thompson  
Norman W. Thompson  
Doug R. Trostle  
Robert Udelsman  
James J. Vopal  
Kristin Elizabeth Wagner  
Collin J. Weber  
Ronald J. Weigel  
Scott Michael Wilhelm  
Michael W. Yeh  
John Hosei Yim  
Martha Allen Zeiger  
Kevin Zirkle**

# PAST MEETINGS

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1980 - **Ann Arbor, Michigan**

Local Arrangements Chair: Norman Thompson

1981 - **Washington, DC**

Local Arrangements Chair: Glenn Geelhoed

1982 - **Houston, Texas**

Local Arrangements Chair: Robert Hickey

1983 - **San Francisco, California**

Local Arrangements Chair: Orlo Clark

1984 - **Kansas City, Kansas**

Local Arrangements Chair: Stanley Friesen

1985 - **Toronto, Ontario, Canada**

Local Arrangements Chair: Irving Rosen

1986 - **Rochester, Minnesota**

Local Arrangements Chair: Jon van Heerden

1987 - **Chicago, Illinois**

Local Arrangements Chair: Ed Kaplan

1988 - **Boston, Massachusetts**

Local Arrangements Chair: Blake Cady

1989 - **Chapel Hill, North Carolina**

Local Arrangements Chair: Robert D. Croom

1990 - **Cleveland, Ohio**

Local Arrangements Chair: Caldwell B. Esselstyn

1991 - **San Jose, California**

Local Arrangements Chair: Maria Allo

1992 - **Miami, Florida**

Local Arrangements Chair: George L. Irvin

1993 - **Williamsburg, Virginia**

Local Arrangements Chair: H. Heber Newsome

1994 - **Detroit, Michigan**

Local Arrangements Chair: Gary B. Talpos

# PAST MEETINGS CONT.

---

1995 - **Philadelphia, Pennsylvania**

Local Arrangements Chair: John Kukora

1996 - **Napa, California**

Local Arrangements Chair: Quan-Yang Duh

1997 - **Baltimore, Maryland**

Local Arrangements Chair: Robert Udelsman

1998 - **Orlando, Florida**

Local Arrangements Chair: Peter J. Fabri

1999 - **New Haven, Connecticut**

Local Arrangements Chair: Barbara Kinder

2000 - **Joint Meeting: London, United Kingdom/Lille, France**

Local Arrangements Chair: John Monchik

2001 - **Atlanta, Georgia**

Local Arrangements Chair: Collin Weber

2002 - **Banff, Alberta, Canada**

Local Arrangements Chair: Janice L. Pasioka

2003 - **San Diego, California**

Local Arrangements Chair: Jay K. Harness/John Kukora

2004 - **Charlottesville, Virginia**

Local Arrangements Chair: John B. Hanks

2005 - **Cancun, Mexico**

Local Arrangements Chair: Miguel F. Herrera

2006 - **New York, New York**

Local Arrangements Chair: Ashok R. Shaha

2007 - **Tucson, Arizona**

Local Arrangements Chair: Michael J. Demeure

2008 - **Monterey, California**

Local Arrangements Chair: Quan-Yang Duh

2009 - **Madison, Wisconsin**

Local Arrangements Chair: Herbert Chen

# INVITED LECTURERS AT RECENT MEETINGS

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- 1991 **Gregory B. Bulkley, MD**  
Johns Hopkins University, Baltimore, Maryland  
*Endothelial Xanthine Oxidase: a Radical Transducer of Signals and Injury*
- 1992 **Donald Coffey, PhD**  
Bethesda, Maryland  
*New Concepts Concerning Cancer*
- 1993 **John L. Doppman, MD**  
National Institutes of Health, Bethesda, Maryland  
*Recent Advances in Endocrinologic Imaging*
- 1994 **Gordon J. Strewler, MD**  
San Francisco, California  
*The Parathyroid Hormone Related Protein: Clinical and Basic Studies of a Polyfunctional Protein*
- 1995 **Ivor M.D. Jackson, MD**  
Providence, Rhode Island  
*Regulation of TSH Secretion: Implications for Disorders of the Thyroid Function*
- 1996 **Victor E. Gould, MD**  
Rush-Presbyterian-Medical Centre, Chicago, Illinois  
*The Diffuse Neuroendocrine System: Evolution of the Concept and Impact on Surgery*
- 1997 **Bertil Hanberger, MD, PhD**  
Karolinska Institute, Stockholm  
*The Nobel Prize*
- 1998 **Susan Leeman, PhD**  
Boston University, Boston, Massachusetts  
*The NeuroPeptides: Substance P and Neurotensin*
- 1999 **James Hurley, MD**  
Cornell University, New York, New York  
*Post-Operative Management of Differentiated Thyroid Cancer*
- 2000 **James Shapiro, MD**  
University of Alberta, Edmonton, Alberta  
*Pancreatic Islet Cell Transplantation*

# INVITED LECTURERS AT RECENT MEETINGS

CONT.

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- 2001 **Andrew F. Stewart, MD**  
University of Pittsburgh, Pittsburgh, Pennsylvania  
*Parathyroid Hormone-Related Protein: From Hypercalcemia of Malignancy to Gene Therapy from Diabetes*
- 2002 **William F. Young Jr., MD**  
Mayo Clinic, Rochester, Minnesota  
*Adrenal-Dependent Hypertension: Diagnostic Testing Insights*
- 2003 **Sissy M. Jhiang, MD**  
Ohio State University, Columbus, Ohio  
*Lessons From Thyroid Cancer: Genetics and Gene Therapy*
- 2004 **Edward R. Laws Jr, MD**  
University of Virginia, Charlottesville, Virginia  
*The Diagnosis and Management of Cushing's Disease*
- 2005 **David Duick, MD**  
Phoenix, Arizona  
*Thyroid Nodules and Mild Primary Hyperparathyroidism: examples of clinical perplexities or unresolvable conundrums*
- 2006 **Michael Bliss, PhD**  
University of Toronto, Toronto  
*Harvey Cushing and Endo-Criminology*
- 2007 **Virginia A. Livolsi, MD**  
University of Pennsylvania, Philadelphia, Pennsylvania  
*Thyroid Nodule FNA and Frozen Section: Partners or Adversaries*
- 2008 **F. John Service, MD, PhD**  
Mayo Clinic, Rochester, Minnesota  
*Hypoglycemia in Adults - 80<sup>th</sup> Anniversary of Hyperinsulinism*
- 2009 **Jeffrey M. Trent, PhD**  
Translation Genomics Research Institute, Phoenix, Arizona  
*Integrating Genetics, Genomics, and Biology Towards a More Personalized Medicine*



# CONFERENCE INFORMATION

## OBJECTIVES

This program is designed for all surgeons seeking the latest developments in endocrine surgical technique and its related research. Through participation in discussions, attendees will be able to explain current developments in the science and clinical practice of endocrine surgery. Members and guests will be able to explain practical new approaches and solutions to relevant concepts and problems in endocrine surgical care.

## CME CERTIFICATES AND EVALUATION FORMS

Please complete your evaluation form and return it to the AAES Registration Desk. You may pick up your CME Certificate at this time.

## ACCREDITATION STATEMENT

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the American College of Surgeons and the American Association of Endocrine Surgeons. The American College of Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

## AMA PRA CATEGORY 1 CREDITS™

The American College of Surgeons designates this educational activity for a maximum of **17 AMA PRA Category 1 Credits™**. Physicians should only claim credit commensurate with the extent of their participation in the activity.



Division of Education  
American College of Surgeons

## DISCLOSURE INFORMATION

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



## REGISTRATION

The Thirty-first Annual Meeting of the AAES will take place at the Omni William Penn in Pittsburgh, Pennsylvania. Registration fees are (postmarked before March 19, 2010) \$375 for AAES members, \$475 for non-members, \$275 for residents and fellows, and \$275 for spouses/guests. To register, visit the AAES Website at [endocrinesurgery.org](http://endocrinesurgery.org). You may either register online, or download and fax the completed registration form to AAES, fax: 913-273-9940. The registration fee covers all scientific and social functions, except Saturday's Golf Outing, Sunday's Tennis Tournament and the Sunday and Tuesday Workshops. For on-site registration, an additional \$50 per person will be assessed.

Due to the tough times we have seen recently, the registration fees for 2010 reflect a discount of \$75 from previous fees. We hope that this will help to make the AAES 2010 Annual Meeting a bit more affordable!

## HOTEL ACCOMMODATIONS

For the convenience of AAES members and guests we have reserved rooms at the Omni William Penn Hotel. However, it is very important to make your hotel reservation early in order to assure yourself of availability.

Omni William Penn Hotel  
530 William Penn Place  
Pittsburgh, Pennsylvania 15219  
Telephone: 412-281-7100

Hotel reservations may be made at the historic Omni William Penn Hotel. The Omni is located just 19 miles from the Pittsburgh International Airport. The AAES group rate is \$134 per night plus tax.

## TRANSPORTATION AND SHUTTLE SERVICE

Taxis are readily available from the airport to the Omni William Penn Hotel. The cost for a taxi is approximately \$40 one way. In addition the Super Shuttle service is available to and from the airport. You can make your reservation at 1-800-258-3826 or on their website at <http://www.supershuttle.com/>. The cost for Super shuttle is \$38 round trip or \$19 one way. If you arrange the shuttle in advance of your trip they have a discounted round trip rate of \$36. The shuttle service takes approximately 45 minutes to get to the hotel however there may be additional time if there are other stops to other hotels in the area.

## WEATHER

Springtime in Pittsburgh is a variable time for weather. Temperatures in mid April range from mid 40s to mid 60s. For accurate weather closer to the date of the meeting, please check [www.weather.com](http://www.weather.com). Be prepared for rain.

## MEETING FORMAT

The 2010 meeting will use the “standard” AAES meeting format. The **Scientific Sessions** will commence Sunday afternoon and extend through Tuesday morning. The **Welcome Reception** will follow the Scientific Sessions on Sunday evening beginning at 7:00 pm. **The Gala Reception and Dinner Banquet** will be held on Monday evening, and the **Poster Competition** will take place Tuesday morning.

## CONTACTS

### **American Association of Endocrine Surgeons**

5810 W 140<sup>th</sup> Terrace,  
Overland Park, KS 66223  
Telephone: (913) 402-7102  
Fax: (913) 273-9940  
Email: [meetings@endocrinesurgery.org](mailto:meetings@endocrinesurgery.org)  
Web: [www.endocrinesurgery.org](http://www.endocrinesurgery.org)

### **Sally E. Carty, MD**

Local Arrangements Chair  
Telephone: (412) 647-0467  
Fax: (412) 648-9551  
Email: [cartyse@upmc.edu](mailto:cartyse@upmc.edu)

# PROGRAM OVERVIEW

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## Saturday, April 17th

11:30am

**Shuttle Departs for Golf**, Omni William Penn

1:00pm - 6:00pm

**Golf Outing**, Quicksilver Golf Club, 2000 Quicksilver Road, McDonald, PA

3:00pm - 7:00pm

**Council Meeting**, Allegheny Room

9:00pm - 11:00pm

**Young Endocrine Surgeons Social**, Bossa Nova, 123 7<sup>th</sup> Street

## Sunday, April 18th

6:45am

**Shuttle Departs for Tennis**, Omni William Penn

7:30am - 10:00am

**Tennis Tournament**, Pittsburgh Indoor Tennis Club, 6032 Stevenson Place

8:00am - 5:00pm

**Speaker Ready Room**, Parlor D

8:00am - 5:00pm

**Registration Open**, 17th Floor Registration Counter

10:00am - 11:00am

**Program Directors Meeting**, Phipps Room

11:00am - 1:00pm

**Workshop: The Molecular Markers of Thyroid Cancer**, Conference Center A

1:00pm - 3:00pm

**Interesting Case Presentations**, Grand Ballroom

Moderator: Jeffrey E. Lee, MD

# PROGRAM OVERVIEW CONT.

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3:00pm - 3:15pm

**Opening Session**, Grand Ballroom

- **Welcome: David L. Bartlett, MD**, University of Pittsburgh Medical Center
- **Opening & In Memoriam: Janice L. Pasieka, MD** - AAES President

3:15pm - 4:30pm

**Scientific Session I: Papers #1-5**, Grand Ballroom

Moderator: Janice L. Pasieka, MD

4:30pm - 5:00pm

**Coffee Break & Poster Viewing**, Urban Room

5:00pm - 6:00pm

**Scientific Session II: Papers #6-9**, Grand Ballroom

Moderator: Michael Bouvet, MD

6:45pm

**Molly's Trolleys depart for Welcome Reception**, Omni William Penn Main Entrance

7:00pm - 10:00pm

**AAES Welcome Reception**, Heinz History Center, 1212 Smallman Street

## Monday, April 19th

7:00am - 8:00am

**Continental Breakfast**, Urban Room

7:00am - 3:30pm

**Industry Exhibits Open**, Urban Room

7:00am - 3:30pm

**Poster Viewing**, Urban Room

7:00am - 5:00pm

**Registration Open**, 17th Street Registration Counter

7:00am - 5:00pm

**Speaker Ready Room**, Parlor D

7:45am - 9:15am

**Scientific Session III: Papers #10-15**, Grand Ballroom

Moderator: Sonia L. Sugg, MD

# PROGRAM OVERVIEW CONT.

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9:15am - 9:45am

**Coffee Break & Poster Viewing**, Urban Room

9:45am - 10:00am

**Introduction of New Members**, Grand Ballroom

10:00am - 11:30am

**Scientific Session IV: Papers #16-21**, Grand Ballroom

Moderator: Herbert Chen, MD

11:30am - 11:40am

**Paul LoGerfo Educational Research Award**

11:40am - 12:30pm

**Invited Lecturer: The State of the Art of Radionuclide Imaging and Therapy in Patients with Neuroendocrine Tumors**, Grand Ballroom

Dr. Alexander J.B. (Sandy) McEwan, MB

Chair and Professor - Department of Oncology; Faculty of Medicine and Dentistry  
University of Alberta; Edmonton, Alberta, Canada

12:30pm - 1:30pm

**AAES Luncheon**, William Penn Ballroom

1:30pm - 2:00pm

**Scientific Session V: Papers #22-23**, Grand Ballroom

Moderator: Jeffrey E. Lee, MD

2:00pm - 3:00pm

**Presidential Address: Dare to be Oslerian**, Grand Ballroom

Janice L. Pasieka, MD

3:00pm - 3:30pm

**Coffee Break & Poster Viewing**, Urban Room

3:30pm - 4:30pm

**Scientific Session V (continued): Papers #24-27**, Grand Ballroom

Moderator: Nancy D. Perrier, MD

4:30pm - 5:30pm

**Business Meeting (AAES Members Only)**, Grand Ballroom

6:30pm - 7:30pm

**New Members Reception**, Sky Room

# PROGRAM OVERVIEW CONT.

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7:00pm - 9:30pm

**Gala Reception and Dinner Banquet**, Grand Ballroom

9:30pm - 11:00pm

**New President's Reception**, Welk Room

## Tuesday, April 20th

7:00am - 8:00am

**Continental Breakfast**, Urban Room

7:00am - 10:30am

**Industry Exhibits Open**, Urban Room

7:00am - 12Noon

**Poster Viewing**, Urban Room

7:00am - 12Noon

**Registration Open**, 17th Street Registration Counter

7:00am - 12Noon

**Speaker Ready Room**, Parlor D

7:45am - 9:30am

**Scientific Session VI: Papers #28-34**, Grand Ballroom

Moderator: Peter Angelos, MD, PhD

9:30am - 10:30am

**Poster Competition**, Grand Ballroom

9:30am - 10:30am

**Coffee Break & Poster Viewing**, Urban Room

10:30am - 11:00am

**AAES Historical Presentation: The Time Was Right**

Norman W. Thompson, MD

11:00am

**Best Poster Award, Raffle & Adjournment**, Grand Ballroom

11:15am - 1:30pm

**Establishing & Maintaining an Endocrine Surgery Practice**, Grand Ballroom

# SCIENTIFIC PROGRAM

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\* Denotes Resident/Fellow Research Award Competition Paper

## Sunday, April 18th

11:00am - 1:00pm

**Workshop: The Molecular Markers of Thyroid Cancer**, Conference Center A

The field of molecular markers in thyroid cancer is new, complex, and may soon change the practice of thyroid surgery. In this workshop, a panel of AAES experts will cover not only basic “Molecular Markers 101” but also will inform the savvy of new data in the field. Our featured speaker Dr. Yuri E. Nikiforov is a world expert in molecular pathology.

**Presenters:**

- Yuri E. Nikiforov Overview of Markers, FNA Panel
- Thomas J. Fahey LOH, DNA Expression Arrays
- Electron Kebebew CDNA, Multigene Arrays, BRAF Spectrum
- Sareh Parangi BRAF Animal Models
- Mira M. Milas Utility of TSHR mRNA
- Martha A. Zeiger Telomerase, Splice Variant Patterns, Pitfalls
- Linwah Yip Use of BRAF & RAS in Extent of Surgery  
Panel Discussion & Recommendations

1:00pm - 3:00pm

**Interesting Case Presentations**, Grand Ballroom

Moderator: Jeffrey E. Lee, MD

3:00pm - 3:15pm

**Opening Session**, Grand Ballroom

- **Welcome: David. L. Bartlett, MD**, University of Pittsburgh Medical Center
- **Opening & In Memoriam: Janice L. Pasiaka, MD** – AAES President

3:15pm - 4:30pm

**Scientific Session I: Papers #1-5**

Moderator: Janice L. Pasiaka, MD

3:15pm - 3:30pm

\*1. ADRENOCORTICAL CARCINOMA: THE INFLUENCE OF LARGE VESSEL EXTENSION

**Harma Turbendian MD**, Vivian Strong MD, Meier Hsu MS, Ronald Ghossein MD, Thomas J Fahey III MD

New York Presbyterian Hospital - Weill Cornell, Memorial Sloan Kettering Cancer Center

# SCIENTIFIC PROGRAM CONT.

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3:30pm - 3:45pm

\*2. RESIDENT/FELLOW ASSISTANCE IN THE OPERATING ROOM DURING THE ERA OF FELLOWSHIPS

**Melanie Goldfarb**, Richard A. Hodin, Sareh Parangi  
Beth Israel Deaconess, Massachusetts General Hospital

3:45pm - 4:00pm

\*3. TRAINING OUR FUTURE ENDOCRINE SURGEONS: A LOOK AT THE ENDOCRINE SURGERY OPERATIVE EXPERIENCE OF U.S. SURGICAL RESIDENTS

**Barbara Zarebczan**, Victoria Rajamanickam, Glen Levenson, Herbert Chen, and Rebecca S Sippel  
University of Wisconsin

4:00pm - 4:15pm

\*4. PET-CT SCANS IN RECURRENT OR PERSISTENT DIFFERENTIATED THYROID CANCER - IS THERE ADDED UTILITY BEYOND CONVENTIONAL IMAGING

**Tricia Fairchild**, Yusuf Menda, James R. Howe, Ronald J. Weigel, Sonia L. Sugg, Geeta Lal  
University of Iowa, Department of Surgery and Radiology

4:15pm - 4:30pm

5. AN ECONOMIC COMPARISON OF SURGICAL AND PHARMACEUTICAL THERAPY IN PATIENTS WITH SECONDARY HYPERPARATHYROIDISM IN GERMANY

**Ralph Schneider**, Georgios Kolios, Emilio Dominguez-Fernandez, Benjamin M. Koch, Detlef K. Bartsch, Katja Schlosser  
Philipps University Marburg

4:30pm - 5:00pm

**Coffee Break & Poster Viewing**

5:00pm - 6:00pm

**Scientific Session II: Papers #6-9**

Moderator: Michael Bouvet, MD

5:00pm - 5:15pm

\*6. ROUTINE CENTRAL LYMPH NODE DISSECTION FOR PAPILLARY THYROID CANCER

**David T. Hughes**, Matthew L. White, Paul G. Gauger, Barbra S. Miller, Richard E. Burney, and Gerard M. Doherty  
University of Michigan

5:15pm - 5:30pm

\*7. COMORBIDITY-RELATED MEDICATION DISCONTINUATION AFTER PARATHYROIDECTOMY

**Adrienne L. Melck**, Michaele J. Armstrong, Michael T. Stang, Sally E. Carty, Linwah Yip



# SCIENTIFIC PROGRAM CONT.

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University of Pittsburgh Medical Center

5:30pm - 5:45pm

\*8. NOMOGRAM FOR PREDICTING MALIGNANCY IN THYROID NODULES USING CLINICAL, ULTRASOUND AND CYTOLOGY FEATURES

**Iain J. Nixon**, Lucy E. Hann, Oscar Lin, Debra A. Goldman, , Monica M. Whitcher, BA, Changhong Yu, Frank L. Palmer, BA, Ashok Shaha, Jatin P. Shah, Ian Ganly, Michael W. Kattan, Snehal G. Patel

Memorial Sloan Kettering Cancer Center

5:45pm - 6:00pm

9. ACCURACY OF 4D-CT IN POORLY-LOCALIZED PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

**Carrie C. Lubitz**, George J. Hunter, Leena M. Hamberg, Sareh Parangi, Daniel Ruan, Atul Gawande, Randall D. Gaz, Gregory W. Randolph, Francis D. Moore, Jr., Richard A. Hodin, and Antonia E. Stephen

Massachusetts General Hospital; Brigham & Women's Hospital

## Monday, April 19th

7:45am - 9:15am

### **Scientific Session III: Papers #10-15**

Moderator: Sonia L. Sugg, MD

7:45am - 8:00am

\*10. BRAF MUTATION IS ASSOCIATED WITH AN INCREASED RISK OF LOCAL RECURRENCE REQUIRING RE-OPERATIVE SURGERY IN PATIENTS WITH PAPILLARY THYROID CANCER

**Christine J. O'Neill**, Martyn Bullock, Angela Chou, Stan B. Sidhu, Leigh W. Delbridge, Anthony Gill, Diana L. Learoyd, Roderick Clifton-Bligh, Mark S. Sywak

University of Sydney Endocrine Surgical Unit

8:00am - 8:15am

11. ANALYSIS OF THE RISING INCIDENCE OF THYROID CANCER UTILIZING THE SURVEILLANCE, EPIDEMIOLOGY, AND END RESULTS (SEER) NATIONAL CANCER DATA REGISTRY

**John D. Cramer**, Pingfu Fu, Karem C. Harth and Scott M. Wilhelm

University Hospitals/Case Western Reserve University, School of Medicine

# SCIENTIFIC PROGRAM CONT.

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*\* Denotes Resident/Fellow Research Award Competition Paper*

8:15am - 8:30am

\*12. THYROIDECTOMY WITH NEOADJUVANT PLX4720 EXTENDS SURVIVAL AND DECREASES TUMOR BURDEN IN AN ORTHOTOPIC MOUSE MODEL OF ANAPLASTIC THYROID CANCER

**Matthew A. Nehs**, Sushruta Nagarkatti, Carmelo Nucera, Richard A. Hodin, and Sareh Parangi  
Massachusetts General Hospital

8:30am - 8:45am

\*13. IS DVT PROPHYLAXIS NECESSARY FOR THYROIDECTOMY AND PARATHYROIDECTOMY?

**Madhu Roy**, Victoria Rajamanickam, Herbert Chen, and Rebecca Sippel  
University of Wisconsin

8:45am - 9:00am

14. DO INTRA-OPERATIVE HORMONE ASSAYS GUIDE THE EXTENT OF SURGICAL RESECTION IN THE MANAGEMENT OF SPORADIC AND SYNDROMIC INSULINOMA?

**James Kirkby-Bott**, Robert Caiazza, Laurent Arnalsteen, Pascal Pigny, Emmanuelle Leteurtre, Guelareh Dezfoulian, Marie-Christine Vantyghem, Michele D'Herbomez, Rachel Desailoud, Odile Verrier Mine, Jean-Louis Wemeau, Bruno Carnaille, François Pattou  
Dept Endocrine & Metabolic surgery, Hopital Huriez, CHU

9:00am - 9:15am

15. A PROSPECTIVE TRIAL EVALUATING THE ACCURACY OF USING COMBINED CLINICAL FACTORS AND CANDIDATE DIAGNOSTIC MARKERS TO REFINE THE ACCURACY OF THYROID FINE NEEDLE ASPIRATION BIOPSY

**Aarti Mathur**, Julie Weng, Willieford Moses, Seth Steinberg, Quan-Yang Duh, Orlo H. Clark, Electron Kebebew  
National Institutes of Health/NCI

9:15am - 9:45am

**Coffee Break & Poster Viewing**

9:45am - 10:00am

**Introduction of New Members**

10:00am - 11:30am

**Scientific Session IV: Papers #16-21**

Moderator: Herbert Chen, MD

# SCIENTIFIC PROGRAM CONT.

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*\* Denotes Resident/Fellow Research Award Competition Paper*

10:00am - 10:15am

**\*16. ALDOSTERONE-SECRETING ADRENAL ADENOMAS - IS SURGERY TOO EXPENSIVE?**

**BethAnn Reimel**, Mark J. Russo, Kyle Zanoocco, Rasa Zarnegar, Cord Sturgeon, Orlo H. Clark, John D Allendorf, John A Chabot, Quan-Yang Duh, James A Lee  
Columbia University Medical Center

10:15am - 10:30am

**17. DIFFERENTIATING HUMAN STEM CELLS INTO PARATHYROID FOR TREATMENT OF HYPOPARATHYROIDISM**

**Kathleen M. Woods Ignatoski**, Eve L. Bingham and Gerard M. Doherty  
University of Michigan

10:30am - 10:45am

**18. IMPACT OF SECOND PRIMARY MALIGNANCY ON OUTCOMES OF DIFFERENTIATED THYROID CARCINOMA**

**Brian H Lang**, Chung-Yau Lo, Irene Oi Wong, Benjamin Cowling  
The University of Hong Kong

10:45am - 11:00am

**19. MANAGEMENT OF CERVICAL NODE METASTASES DETECTED ON TOTAL-BODY I-131 IMAGING FOLLOWING INITIAL SURGERY FOR WELL-DIFFERENTIATED PAPILLARY THYROID CARCINOMA**

**Jeffrey F. Moley**, Bruce H. Haughey, Perry W. Grigsby  
Washington University School of Medicine

11:00am - 11:15am

**20. ROBOTIC THYROID SURGERY BY BILATERAL AXILLO-BREAST APPROACH USING DA VINCI SURGICAL SYSTEM**

**Kyu Eun Lee**, Su-jin Kim, Jeonghun Lee, Do Hoon Koo, Seung Keun Oh, Yeo-Kyu Youn  
Seoul National University College of Medicine

11:15am - 11:30am

**21. INITIAL YUMC EXPERIENCE OF ROBOT-ASSISTED MODIFIED RADICAL NECK DISSECTION IN THE MANAGEMENT OF THYROID CARCINOMA WITH LATERAL LYMPH NODE METASTASIS**

**Sang-Wook Kang**, So Hee Lee, Haeng Rang Ryu, Kang Young Rhee, Jong Ju Jeong, Kee-Hyun Nam and Woong Youn Chung  
Department of Surgery, Yonsei University College of Medicine

11:30am-11:40am

**Paul LoGerfo Educational Research Fund Award**

*\* Denotes Resident/Fellow Research Award Competition Paper*

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11:40am - 12:30pm

**Invited Lecturer: The State of the Art of Radionucleotide Imaging and Therapy in Patients with Neuroendocrine Tumors**

Dr. Alexander J.B. (Sandy) McEwan, MB

Chair and Professor - Department of Oncology; Faculty of Medicine and Dentistry  
University of Alberta; Edmonton, Alberta, Canada

12:30pm - 1:30pm

**AAES Luncheon**, William Penn Ballroom

1:30pm - 2:00pm

**Scientific Session V: Papers #22-23**

Moderator: Jeffrey E. Lee

1:30pm - 1:45pm

22. THE IMPACT OF THE 2009 ATA GUIDELINES ON THE CHOICE OF OPERATION FOR WELL-DIFFERENTIATED THYROID MICROCARCINOMAS

**Keith S. Heller**, Jennifer B. Ogilvie

New York University Langone Medical Center

1:45pm - 2:00pm

23. A NOVEL RET INHIBITOR WITH POTENT EFFICACY AGAINST MEDULLARY THYROID CANCER IN VIVO.

**Abbas K. Samadi**, Anuj Shah, Ridhwi Mukerji, Barbara N. Timmermann, and Mark S. Cohen

University of Kansas Medical Center

2:00pm - 3:00pm

**Presidential Address - Dare to be Oslerian**

Janice L. Pasieka, MD

University of Calgary, Calgary, Alberta, Canada

3:00pm - 3:30pm

**Coffee Break & Poster Viewing**, Urban Room

3:30pm - 4:30pm

**Scientific Session V (continued): Papers #24-27**, Grand Ballroom

Moderator: Nancy D. Perrier

3:30pm - 3:45pm

24. OUTCOMES AND QUALITY OF LIFE AFTER PARTIAL PANCREATECTOMY FOR NON-INSULINOMA PANCREATOGENOUS HYPOGLYCEMIA SYNDROME

**Kimberly A. Vanderveen**, Clive S. Grant, Geoffrey B. Thompson

# SCIENTIFIC PROGRAM CONT.

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Mayo Clinic

3:45pm – 4:00pm

25. BETTER PRESERVATION OF ENDOCRINE AND EXOCRINE FUNCTION FOLLOWING CENTRAL VERSUS DISTAL PANCREATECTOMY FOR MID-GLAND LESIONS

**Leaque Ahmed**, Joseph DiNorcia, Minna K. Lee, BA, Patrick L. Reavey, Elizabeth A. Yakaitis, BA, James A. Lee, Beth A. Schrope, John A. Chabot, and John D. Allendorf  
Columbia University College of Physicians and Surgeons

4:00pm – 4:15pm

26. COST-EFFECTIVE ANALYSIS FOR ADRENAL LESIONS: IMMEDIATE LAPAROSCOPIC ADRENALECTOMY VERSUS OBSERVATION

**Michael T. Stang**, Linwah Yip, Matthew R. Rosengart, Michael J. Armstrong, , Sally E. Carty, Adrienne L. Melck  
University of Pittsburgh Medical Center

4:15pm – 4:30pm

27. IMPACT OF RESECTIONAL STANDARDS IN THYROID CANCER INVADING THE AERODIGESTIVE TRACT ON INDICATION AND SURVIVAL

**Michael Brauckhoff (1,2,3)**, Anja Schmeil (1), Carsten Sekulla (1), Kerstin Lorenz (1), Katrin Brauckhoff (1,3), Henning Dralle (1)  
(1) Department of General-, Visceral and Vascular Surgery, University of Halle, Halle, Germany  
(2) Institute of Surgical Sciences, University of Bergen, Bergen, Norway  
(3) Department of Surgery, Haukeland University Hospital, Bergen, Norway

4:30pm – 5:30pm

**Business Meeting (AAES Members Only)**

## Tuesday, April 20th

7:45am – 9:30am

**Scientific Session VI: Papers #28-34**

Moderator: Peter Angelos, MD, PhD

7:45am – 8:00am

28. EFFECT OF THE BETHESDA SYSTEM FOR REPORTING THYROID CYTOPATHOLOGY ON THYROIDECTOMY RATES AND MALIGNANCY RISK IN CYTOLOGICALLY INDETERMINATE THYROID NODULES

**Jennifer L. Rabaglia**, Wareef Kabbani, Shelby Holt, Lori Watumull, Jeffrey Pruitt, William H. Snyder, Fiemu E. Nwariaku

# SCIENTIFIC PROGRAM CONT.

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University of Texas Southwestern Medical Center

8:00am - 8:15am

29. SINGLE NUCLEOTIDE POLYMORPHISMS ACT AS MODIFIERS AND STRONGLY CORRELATE WITH DEVELOPMENT OF SIMULTANEOUS MEDULLARY AND PAPILLARY THYROID CARCINOMAS IN TWO LARGE, NON-RELATED FAMILIES WITH RET V804M PROTO-ONCOGENE MUTATION.

**Alexander L. Shifrin**, Jennifer B. Ogilvie, Michael T Stang, Angela Musial Fay, Cristina Xenachis, Yen-Hong Kuo, Jerome J. Vernick  
Jersey Shore University Medical Center

8:15am - 8:30am

30. SPRY2 EXPRESSION CORRELATES WITH BRAF MUTATION IN THYROID CANCER

**Lizhong Xu**, Dafna Bar-Sagi, Kopal N. Patel  
NYU Langone Medical Center

8:30am - 8:45am

31. LAPAROSCOPIC RADIOFREQUENCY THERMAL ABLATION OF NEUROENDOCRINE HEPATIC METASTASES: LONG-TERM FOLLOW UP

**Eren Berber**, Hizir Akyildiz, Jamie Mitchell, Mira Milas, Allan Siperstein  
Cleveland Clinic

8:45am - 9:00am

32. SECOND OPINION CYTOPATHOLOGY REVIEW OF THYROID FINE NEEDLE ASPIRATION BIOPSIES REDUCES THE NEED FOR DIAGNOSTIC THYROIDECTOMY

**Tomer Davidov**, Stanley Z. Trooskin, Beth-Ann Shanker, Dana Yip, Oliver Eng, , Jessica Crystal, , Malik F. Deen, Michael May, Renee L. Artymyshyn  
University of Medicine & Dentistry of New Jersey - Robert Wood Johnson Medical School

9:00am - 9:15am

33. DO THE RECENT AMERICAN THYROID ASSOCIATION (ATA) GUIDELINES ACCURATELY GUIDE THE TIMING OF PROPHYLACTIC THYROIDECTOMY?

**Elizabeth G. Grubbs**, Thereasa A. Rich, Yan Xing, Stephen G. Waguespack, Anita K. Ying, Douglas B. Evans, Jeff E. Lee, Nancy D. Perrier  
MD Anderson Cancer Center

9:15am - 9:30am

34. TRANSORAL THYROID AND PARATHYROID SURGERY

**E. Karakas**, T. Steinfeldt, T. Schlosshauer, A. Gockel, J. Jäger, R. Westermann, D.K. Bartsch  
University Hospital Marburg

9:30am - 10:30am

**Poster Competition**

# SCIENTIFIC PROGRAM CONT.

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10:30am

**AAES Historical Presentation: The Time Was Right**

Norman W. Thompson, MD

11:00am

**Best Poster Award, Raffle & Adjournment**

11:15am - 1:30pm

**Establishing & Maintaining an Endocrine Surgery Practice**

Back for a third year by popular demand, the AAES Practice Management Workshop is entitled, Establishing and Maintaining an Endocrine Surgery Practice. This year's topics were determined by a needs-assessment survey of our membership and are designed to focus more on mid-career issues.

**Presenters:**

Orlo H. Clark

Practice Building with Referring MDs

Peter Angelos

Templates for the Electronic Medical Record

& David J. Winchester

Gary B. Talpos

Administrators & Fiscal Realities

Herbert Chen

Coding and Billing in Endocrine Surgery

Douglas B. Evans

How to Write a Really Good Abstract for

Allan Siperstein

Directing an Endocrine Surgery Fellowship

Steven P. Hodak

Establishing a Multidisciplinary Thyroid Center

Steven K. Libutti

Maintaining Perspective in Your Off Time

William B. Inabnet, III

Panel Discussion



# ABSTRACTS

*\* Denotes Resident/Fellow Research Award Competition Paper*



# ABSTRACTS

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\*Paper 1 (3:15pm - 3:30pm)

ADRENOCORTICAL CARCINOMA: THE INFLUENCE OF LARGE VESSEL EXTENSION

**Harma Turbendian MD**, Vivian Strong MD, Meier Hsu MS, Ronald Ghossein MD, Thomas J Fahey III MD

New York Presbyterian Hospital - Weill Cornell, Memorial Sloan Kettering Cancer Center

**Background:** Adrenocortical carcinoma (ACC) portends a poor prognosis and a high recurrence rate. Surgical resection is the only potentially curative treatment. Prognostic factors for survival and recurrence are well documented, but the importance of large vessel extension (LVE) is not commonly evaluated. This study aims to assess outcome of ACC in the presence and absence of LVE.

**Methods:** Dual-institution, retrospective review of 57 patients who underwent curative intent resection for ACC between 1988 and 2008 allowed comparison of patients with and without LVE. LVE was defined as the presence of vascular wall invasion or intraluminal extension of tumor in the inferior vena cava or renal vein. Preoperative diagnostics, operative details, pathology, overall survival (OS), and recurrence free survival (RFS) were analyzed.

**Results:** Twenty-two patients had LVE (39%) and 35 patients (61%) had no LVE. Patients with LVE were more likely to have functional tumors (70% vs. 37%,  $p=0.03$ ) and higher preoperative serum hormone levels (74% vs. 34%,  $p=0.01$ ). There were no significant differences in patient characteristics, operative details, tumor size, presence of metastases, or pathology. Patients with LVE were more likely to have positive margins (55% vs. 15%,  $p=0.005$ ). Survival analysis was performed on 55 of 57 patients with a median follow up time of 3 years, a median OS time of 6 years (95% CI 3-15), and a median RFS time of 3 years (95% CI 1-5). Kaplan-Meier analysis demonstrated a significant reduction in OS ( $p=0.0006$ ) and RFS ( $p=0.001$ ) in patients with LVE. Median OS with and without LVE were 17.8 and 111.4 months respectively and median RFS were 10.7 and 63.6 months. Three year OS with and without LVE were 29% and 93% respectively and 3 year RFS were 15% and 67%. LVE, Stage III disease, Stage IV disease, Weiss score, positive margins, positive lymph nodes, adjacent organ invasion, metastatic disease, elevated preoperative hormone levels, and functional tumors were all significantly associated with OS and RFS on univariate analysis. Multivariable regression analysis showed a significant association for only LVE, Stage III disease, and Stage IV disease.

**Conclusions:** LVE in ACC is associated with poorer OS and RFS when compared to patients without LVE. In addition to systemic and lymph node metastases, LVE is a significant prognosticator for outcome in ACC.

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# ABSTRACTS CONT.

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\*Paper 2 (3:30pm - 3:45pm)

RESIDENT/FELLOW ASSISTANCE IN THE OPERATING ROOM DURING THE ERA OF FELLOWSHIPS

**Melanie Goldfarb**, Richard A. Hodin, Sareh Parangi  
Beth Israel Deaconess, Massachusetts General Hospital

**Background:** The role of surgical residents and fellows participating in endocrine surgical cases may be undergoing dynamic changes due to an increasing number of fellowships. We sought to see if we could identify the level of resident and fellow involvement in endocrine operations at hospitals participating in the National Surgical Quality Improvement Program (NSQIP). In addition, we studied the operative characteristics and patient outcomes after endocrine operations performed with the assistance of surgical residents and fellows compared to surgical attendings operating alone.

**Methods:** The NSQIP database was queried for all major endocrine operations (adrenal, parathyroid, and thyroid) performed during 2005-2008, which is approximately 20% of all endocrine operations at participating hospitals. Resident assistance in the operating room was classified as none, junior (PGY1-3), senior (PGY4,5) or fellow (PGY6 or higher).

**Results:** 24.9% of all endocrine operations were performed by an attending surgeon operating alone (17.3% adrenals, 27.7% thyroids, 20.8% parathyroids). Fellows assisted in 6.8% of the total cases (18.6% adrenals, 4.8% thyroids, 8.4% parathyroids; 586 in 2006, 629 in 2007, 720 in 2008). Senior residents assisted in 37.2% of the total cases (52.6% adrenals, 35.6% thyroids, 37.4% parathyroids). Junior residents assisted in 31.1% of the total cases (11.5% adrenals, 31.9% thyroids, 33.5% parathyroids). Operating with residents or fellows did not significantly increase wound infections, medical complications, return to the OR, or overall morbidity. Operating without residents led to shorter operative times ( $p < .001$ ) but longer surgical lengths of stay for all operations (adrenal: 2.32 days, parathyroid: 1.79 days, thyroid: 1.81 days,  $p < .001$ ). Their patients had similar risk factors except for a higher prevalence of obesity (BMI >30) and octogenarians ( $p = .03$ ).

**Conclusions:** Even with the increase in endocrine surgery fellows, almost one fourth of all endocrine operations are still performed by attending surgeons operating alone. The percentage of fellow-assisted cases has not increased over the past few years despite an increase in the number of fellowships. There was no significant difference in patient outcomes if surgeons operated alone or with residents and fellows, though operations did last significantly longer.

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\*Paper 3 (3:45pm - 4:00pm)

TRAINING OUR FUTURE ENDOCRINE SURGEONS: A LOOK AT THE ENDOCRINE SURGERY OPERATIVE EXPERIENCE OF U.S. SURGICAL RESIDENTS

**Barbara Zarebczan**, Victoria Rajamanickam, Glen Leverson, Herbert Chen, and Rebecca S Sippel

University of Wisconsin

**Background:** Previous studies have shown that the average number of endocrine cases performed by graduating chief residents in US general surgery programs is inadequate. In the last 10 years the number of endocrine procedures performed in the US has increased significantly. We sought to determine if that increase in endocrine procedures has led to an increase in operative case volume for general surgery and/or otolaryngology residents.

**METHOD:** We evaluated the records from the Resident Statistic Summaries of the Resident Review Committee (RRC) for US general surgery and otolaryngology residents for the years 2004-2008. We specifically examined data on thyroidectomies and parathyroidectomies for both groups.

**Results:** Between 2004 and 2008, the average endocrine case volume of both US general surgery and otolaryngology residents increased by approximately 15%. Although both saw a similar rate of growth, otolaryngology residents performed over twice as many operations as US general surgery residents. Otolaryngology increased their volume from 57.1 to 67.3 cases compared to general surgery residents who saw an increase from 26.4 to 30.9 cases ( $p < 0.001$ ). The growth in case volume was mostly due to increases in the number of thyroidectomies performed by US general surgery residents and otolaryngology residents (17.9 to 21.8,  $p = 0.007$  and 46.5 to 54.4,  $p = 0.04$ ). When comparing the average number of thyroidectomies by resident level, as surgeon juniors otolaryngologists performed 14.8 cases compared to 11.6 done by general surgeons ( $p = 0.02$ ). The most striking difference was seen in the significantly larger number of thyroidectomies done by otolaryngology chiefs (34.8 vs. 8.3,  $p = 0.001$ ). Overall, otolaryngology residents performed more parathyroidectomies than their general surgery counterparts (11.6 vs. 8.8,  $p = 0.007$ ). As junior residents, general surgeons performed more parathyroidectomies than otolaryngologists (5.1 vs. 3.6,  $p = 0.001$ ). However, otolaryngology chiefs performed significantly more parathyroidectomies than general surgery chiefs (8.0 vs. 3.7,  $p = 0.002$ ).

**Conclusion:** Although there has been an increase in the number of endocrine cases performed by graduating US general surgery residents, this is still significantly smaller than the number being done by otolaryngology residents. In order to remain competitive, general surgery residents wishing to practice endocrine surgery may need to pursue additional fellowship training.

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\*Paper 4 (4:00pm - 4:15pm)

PET-CT SCANS IN RECURRENT OR PERSISTENT DIFFERENTIATED THYROID CANCER - IS THERE ADDED UTILITY BEYOND CONVENTIONAL IMAGING

**Tricia Fairchild**, Yusuf Menda, James R. Howe, Ronald J. Weigel, Sonia L. Sugg, Geeta Lal  
University of Iowa, Department of Surgery and Radiology

**Background:** Integrated PET-CT may have advantages over conventional imaging in accurately locating disease in patients with recurrent or persistent differentiated thyroid cancer. Our study aims to 1) evaluate the settings in which PET-CT scans are obtained for differentiated thyroid cancers at our institution, 2) assess the utility of PET-CT in localizing disease and 3) assess the additive value of PET-CT over conventional imaging studies.

**Methods:** A retrospective review of all patients with differentiated thyroid cancer who underwent a PET-CT scan between January 2003 and June 2008 was performed. PET-CT results were compared to conventional imaging including contrast CT/MRI, neck ultrasound and Radioactive Iodine (RAI) scans. The performance characteristics of PET-CT were evaluated with histological confirmation or follow-up.

**Results:** 30 patients (11 male, 19 female) with a mean age of 49.9+/-17 years with prior thyroidectomy and RAI ablation for thyroid cancer (Papillary or Follicular variant of Papillary 25, Follicular 1, Hurthle cell 2 and Mixed Papillary and Follicular 2) underwent 36 PET-CT scans. Initial stage at presentation was Stage I in 11, Stage II in 1, Stage III in 8, and Stage 4 in 9 patients. Indications for PET-CT were: Elevated thyroglobulin (Tg) level and negative RAI scan in 30, positive Tg antibodies in 3, and re-staging in 3 patients. Median unstimulated and stimulated Tg levels prior to imaging were 4.9 and 136.9, respectively. 18/36 (50%) of PET-CT scans showed increased uptake in the neck, 11/36 (31%) in the lung, 3/36 (8.3%) in bone and 6/36 (16.6%) in other areas. PET-CT had an overall sensitivity of 73.9%, specificity of 61.5% and positive predictive value of 77.3%. To assess the added value of PET-CT, we focused on the 21 (58%) scans performed after conventional imaging in 20 patients. PET-CT provided additional information in 2 (10%) patients, both of whom were spared additional intervention. However, PET-CT also underestimated extent of disease when compared to conventional imaging in 3 (15%) patients, and led to unnecessary interventions (including surgery, RAI and antibiotics) in 3 (15%) additional patients.

**Conclusion:** PET-CT has reasonable sensitivity in the detection of recurrent differentiated thyroid cancer, however, the added value of PET-CT may be limited after good quality conventional imaging. Further studies are needed to determine the most cost-effective approach to managing these challenging patients.

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Paper 5 (4:15pm - 4:30pm)

AN ECONOMIC COMPARISON OF SURGICAL AND PHARMACEUTICAL THERAPY IN PATIENTS WITH SECONDARY HYPERPARATHYROIDISM IN GERMANY

**Ralph Schneider**, Georgios Kolios, Emilio Dominguez-Fernandez, Benjamin M. Koch, Detlef K. Bartsch, Katja Schlosser

Philipps University Marburg; Department of Visceral, Thoracic and Vascular Surgery

**Background:** Secondary hyperparathyroidism (sHPT) is a frequent complication in patients with chronic kidney disease leading to osteopathy, myopathy and an increased morbidity and mortality related to major vessel calcifications. Total parathyroidectomy (PTX) with autotransplantation and subtotal PTX are considered standard procedures in surgical treatment of sHPT. Conservative therapy was significantly amended with the introduction of Cinacalcet in 2004 and Paricalcitol in 2005 and led to a consecutive reduction in the frequency of surgical procedures performed for sHPT worldwide. Limitations of resources in public health systems demand detailed analyses of accruing costs. The aim of this study was to evaluate and compare the costs of surgical and medical therapy.

**Methods:** All patients with sHPT who underwent initial PTX at our hospital between 01/2003 and 01/2006 (n=91) and all patients treated with Cinacalcet or Paricalcitol at an ambulatory dialysis centre (n=100) were analyzed. The revenues of both therapies for the funding agencies were calculated by a cost-cost-analysis. The real arising costs of the supplier (hospital) were analyzed performing clinical pathways and compared to the revenues of the medical therapies.

**Results:** The annual costs of a therapy with Cinacalcet (60mg/day) were calculated with 5828.40€ and for Paricalcitol (15×g/week) with 4485.20€. Inpatient revenues were calculated using base-case-values, special relative weight and an average rate of reoperations of 5% leading to a total amount of 3755.38€. Additionally, the costs for postoperative ambulant therapy including blood examinations and calcium and calcitriol supplementation were calculated with 545.05€ for the first year and 384.97€ for the following year.

**Conclusions:** Due to linearly rising, expenses of medical treatment with Cinacalcet for more than 9 months or Paricalcitol for more than 12 months exceeded the costs of surgical therapy. The indication of these new medical therapies should therefore be restricted to patients as an interim solution ahead of surgery or in those who are considered unsuitable for surgery.

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\*Paper 6 (5:00pm - 5:15pm)

ROUTINE CENTRAL LYMPH NODE DISSECTION FOR PAPILLARY THYROID CANCER  
**David T. Hughes**, Matthew L. White, Paul G. Gauger, Barbra S. Miller, Richard E. Burney, and Gerard M. Doherty  
University of Michigan

**Background:** Routine central lymph node dissection with total thyroidectomy is controversial in the treatment of papillary thyroid cancer due to the possibility of increased operative morbidity with uncertain clinical benefit.

**Method:** Retrospective cohort study from 2002 to 2009 of 144 patients undergoing total thyroidectomy (TT) (66) or total thyroidectomy with bilateral central lymph node dissection (TT+BCLND) (79) for treatment of papillary thyroid carcinoma larger than one centimeter without preoperative evidence of lymph node involvement.

**Results:** The groups were similar in age, sex, tumor size, multifocality, angioinvasion and MACIS score. There were more tumors with extrathyroidal extension in the TT+BCLND group (41% vs 17%;  $p < 0.01$ ). Median follow up was also longer in TT group (27.5 months vs 19.1 months;  $p = 0.05$ ) because of a trend toward TT+BCLND over the duration of the study.

The mean number of unintentional parathyroids in the pathologic specimen (TT 0.14 vs TT+BCLND 0.41;  $p < 0.01$ ) and the mean number of parathyroid glands reimplanted (TT 0.1 vs TT+BCLND 0.7;  $p < 0.01$ ) were higher in the TT+BCLND patients. The incidence of temporary symptomatic hypocalcemia was more frequent in TT+BCLND patients (7.6% vs. 25.6%;  $p < 0.01$ ) while permanent hypoparathyroidism and recurrent laryngeal nerve injury rates were equivalent at 1.3%.

Patients undergoing TT+BCLND had positive nodes in 62% of cases. The presence of positive nodes upstaged 29% TT+BCLND patients over age 45 and the median dose of radioactive iodine ablation was higher (150 mCi vs 30 mCi) in TT+BCLND patients due to higher disease stage. Median stimulated serum thyroglobulin levels before and 1 year after radioactive iodine ablation were equivalent. The number of patients with undetectable thyroglobulin 1 year after radioactive iodine ablation was similar. Recurrence occurred in 3% of TT patients and in 5% of TT+BCLND patients.

**Conclusion:** The addition of routine central lymph node dissection to total thyroidectomy for the treatment of papillary thyroid cancer increases the rates of temporary hypocalcemia but does not change the rate of other complications. Routine level VI dissection upstaged 29% of patients over the age of 45 thereby changing adjuvant radioactive iodine ablative therapy dose. Stimulated thyroglobulin levels were similar with or without central lymph node dissection. Short-term disease recurrence was unchanged in patients undergoing routine central lymph node dissection.

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\*Paper 7 (5:15pm - 5:30pm)

## COMORBIDITY-RELATED MEDICATION DISCONTINUATION AFTER PARATHYROIDECTOMY

**Adrienne L. Melick**, Michaele J. Armstrong, Michael T. Stang, Sally E. Carty, Linwah Yip  
University of Pittsburgh Medical Center

**Background:** Primary hyperparathyroidism (PHPT) associated comorbidities and nonspecific neurobehavioral, musculoskeletal and gastrointestinal symptoms have been documented to improve after parathyroidectomy (Ptx). Whether symptom improvement translates into the discontinuation or dose-reduction of drugs used to treat these comorbidities is unknown.

**Methods:** All cases of sporadic PHPT treated by Ptx from 1/2007 to 4/2009 with biochemical cure at 6 months (normal calcium and parathormone levels) were retrieved from a prospective database and compared to a cohort of patients undergoing thyroidectomy (Tx) during the same time period. Tx patients who were not euthyroid at postoperative follow-up were excluded. We reviewed patient demographics, medical history, perioperative symptoms and medications (antidepressants, antihypertensives, antilipids, analgesics, antacids, stool softeners, and bisphosphonates). The Fisher's exact and t-tests were used for statistical comparisons.

**Results:** We compared 263 Ptx to 176 Tx patients. The Ptx patients were older compared to the Tx patients (mean age 63 v. 57 yrs,  $p < .001$ ) and were more commonly men (26 v. 15%,  $p = .004$ ). Preoperatively, Ptx patients had a higher prevalence of hypertension (53 v. 38%,  $p = .002$ ), hyperlipidemia (51 v. 27%,  $p < .001$ ), GERD (28 v. 10%,  $p < .001$ ), constipation (22 v. 2%,  $p < .001$ ), osteoporosis (21 v. 5%,  $p < .001$ ), arthritis (62 v. 33%,  $p < .001$ ), fatigue (63 v. 15%,  $p < .001$ ), and/or depression (29 v. 15%,  $p = .001$ ). After surgery, Ptx patients self-reported improvements in their preoperative nocturia (22%), arthritis (36%), fatigue (45%), and depression (23%). Discontinuation or dose-reduction of medications used to treat depression, osteoporosis, hypertension, hyperlipidemia, arthritis, GERD and constipation occurred in 33 (13%) Ptx patients compared to 8 (5%) Tx patients ( $p = .004$ ). Analgesics (9/33, 27%) and antidepressants (6/33, 18%) were the most frequently discontinued medications.

**Conclusion:** Alleviation of PHPT-related symptoms after surgery has been demonstrated by several experts, but remains controversial. We confirm the improvement of these symptoms after Ptx and also show, for the first time, that patients can discontinue associated comorbidity medications. After Ptx, medications for PHPT-related comorbidities should be routinely reviewed and adjusted. Cost-effective analysis must now incorporate ongoing drug therapies for PHPT-related comorbidities.

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\*Paper 8 (5:30pm - 5:45pm)

## NOMOGRAM FOR PREDICTING MALIGNANCY IN THYROID NODULES USING CLINICAL, ULTRASOUND AND CYTOLOGY FEATURES

**Iain J. Nixon**, Lucy E. Hann, Oscar Lin, Debra A. Goldman, , Monica M. Witcher, BA, Changhong Yu, Frank L. Palmer, BA, Ashok Shaha, Jatin P. Shah, Ian Ganly, Michael W. Kattan, Snehal G. Patel

Memorial Sloan Kettering Cancer Center

**Background:** Ready access to high definition ultrasound, has resulted in an increase in the number of nodules detected. However, only around 10% of nodules are malignant and need surgical intervention. The judicious use of fine needle aspiration(FNA) can help identify those needing surgery, but the limitations of a non-diagnostic FNA in predicting malignancy are well recognized. The decision to recommend surgery is based on the clinician's assessment of malignancy risk. Experienced clinicians can predict the chance of malignancy within a nodule using clinical, ultrasound and cytologic features and provide treatment recommendations. However, accurate quantification of risk would be helpful in decision making and counseling patients. The aim of this study was therefore to create a predictive nomogram based on clinical, ultrasound and cytology features to accurately predict the chance of malignancy within a thyroid nodule in a tertiary care setting.

**Methods:** All patients who underwent ultrasound guided FNA and had surgery within our institution during 2007-2008 were identified. Clinical records and pathology reports were reviewed. Ultrasound images were reviewed by a radiologist and cytology slides were reviewed by a cytologist for a list of predetermined features. Data was entered into an electronic database for analysis. Multivariate logistic regression was used to quantify the predictive value of clinical, ultrasound and cytology variables in predicting the risk of malignant nodules. Eight variables with the highest predictive value were selected for the final nomogram. The nomogram was internally validated by assessing discrimination and calibration. Bootstrapping was used to correct for over-fitting bias.

**Results:** One hundred and fifty eight patients with 190 nodules were identified. Eighteen patients were excluded, leaving 172 nodules for analysis. Seventy seven of the 172 nodules were positive for malignancy on histopathology. The 8 variables with highest predictive value selected for the nomogram were: clinical (TSH), ultrasound (shape, echo texture, vascularity) and cytology (nuclear grooves, pseudo-inclusions, cellularity and presence of colloid). The nomogram had an excellent predictive accuracy with a concordance index of 91%.

**Conclusion:** We have produced a nomogram which is able to accurately quantify the risk of malignancy in a thyroid nodule in a tertiary care population based on a combination of clinical, ultrasound and cytology features.

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Paper 9 (5:45pm - 6:00pm)

## ACCURACY OF 4D-CT IN POORLY-LOCALIZED PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

**Carrie C. Lubitz**, George J. Hunter, Leena M. Hamberg, Sareh Parangi, Daniel Ruan, Atul Gawande, Randall D. Gaz, Gregory W. Randolph, Francis D. Moore, Jr., Richard A. Hodin, and Antonia E. Stephen

Massachusetts General Hospital; Brigham & Women's Hospital

**Background:** 4D-CT is a new imaging modality that utilizes multi-planar images and perfusion characteristics to identify abnormal parathyroid glands. Although 4D-CT has been reported to show improved accuracy compared to sestamibi and ultrasound, the appropriate role for this novel imaging study remains to be determined. We aimed to assess the benefit of 4D-CT in patients with inconclusive pre-operative ultrasound and sestamibi localization studies.

**Methods:** The study population consisted of adult patients with primary hyperparathyroidism and non-confirmatory standard imaging (ultrasound and sestamibi) who underwent both localization with 4D-CT and surgery for curative intent by one of eight endocrine surgeons at two tertiary-care, academic hospitals from 5/08-9/09. Patient characteristics, 4D-CT scan results as compared to surgical and pathological findings, and curative proportion were assessed (means (SD), medians (IQR), Fisher exact test). Surgical findings were considered the gold standard for localization.

**Results:** Sixty patients met the inclusion criteria. Sixty-five percent of the patients had no previous neck surgery, whereas 35% had previous parathyroid or thyroid operations. Overall, 4D-CT accurately lateralized 72% and localized 60% of abnormal glands found at surgery. When the 4D-CT identified a single candidate lesion (46/60), findings were confirmed at surgery in 69%. When multiple lesions were identified on 4D-CT (14/60), accuracy dropped to 36%. Accuracy of 4D-CT was not significantly different between primary and re-operative cases (Fisher exact  $p = 0.21$ ). The one case labeled four-gland hyperplasia on 4D-CT was confirmed at surgery. Of the eight patients with multi-gland disease (> one abnormal parathyroid) diagnosed at the time of surgery, five had multiple candidate lesions noted on 4D-CT. In 90% of patients, a greater than 50% drop in PTH level was achieved 10 minutes after resection and 83% were normocalcemic (8.5-10.4 mg/dL) following surgery (median follow-up 22 days, IQR 14-129). A single gland was found on 4D-CT and confirmed at surgery in 32 of the 60 cases; 96% had a 50% fall in intra-operative PTH level.

**Conclusions:** 4D-CT identifies the majority of abnormal parathyroids missed by traditional imaging and should be considered in cases with negative or discordant sestamibi and ultrasound. Multi-gland disease remains a challenging entity.

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\*Paper 10 (7:45am - 8:00am)

**BRAF MUTATION IS ASSOCIATED WITH AN INCREASED RISK OF LOCAL RECURRENCE REQUIRING RE-OPERATIVE SURGERY IN PATIENTS WITH PAPILLARY THYROID CANCER**

**Christine J. O'Neill**, Martyn Bullock, Angela Chou, Stan B. Sidhu, Leigh W. Delbridge, Anthony Gill, Diana L. Learoyd, Roderick Clifton-Bligh, Mark S. Sywak  
University of Sydney Endocrine Surgical Unit

**Background:** Mutation of the BRAF oncogene is the most common genetic alteration in papillary thyroid cancer (PTC) yet its role as an independent prognostic factor remains controversial. Some studies suggest that BRAF mutation is associated with poor radioactive iodine uptake and a higher risk of local recurrence. The aim of this study was to evaluate the relationship between BRAF mutation and disease-free survival particularly with regards to local recurrence requiring further surgery.

**Methods:** Paraffin embedded specimens from consecutive patients who underwent surgery for PTC prior to 2003 were retrieved and independently reviewed by an endocrine pathologist. DNA was extracted, amplified by polymerase chain reaction and BRAF V600E (valine to glutamic acid at codon 600) mutational status determined by restriction digest. These results were correlated with the clinicopathological features of the tumor and with long-term disease outcomes.

**Results:** The study group comprised 100 patients (81% female) with a median age of 43 years. BRAF mutation was present in 58% of thyroid tumors. At a median follow-up of 105 months (8.8 years) overall disease-free survival was 80% and disease related mortality was 4%. Local recurrence occurred in 14% of BRAF positive patients and all required further surgery with lateral neck dissection ( $p=0.02$ ). In contrast local recurrence occurred in 7% of BRAF negative patients with none requiring further surgery as all were successfully ablated with radioactive iodine. All 4 disease-related deaths occurred in patients whose primary tumour contained the BRAF mutation, however this did not reach statistical significance ( $p=0.09$ ). In patients with Stage III or IV disease there was a trend towards poorer disease-free survival ( $p=0.05$ ) in those with BRAF mutation.

**Conclusion:** BRAF mutation is associated with an increased risk of local recurrence and the need for re-operative surgery.

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Paper 11 (8:00am - 8:15am)

ANALYSIS OF THE RISING INCIDENCE OF THYROID CANCER UTILIZING THE SURVEILLANCE, EPIDEMIOLOGY, AND END RESULTS (SEER) NATIONAL CANCER DATA REGISTRY

**John D. Cramer**, Pingfu Fu, Karem C. Harth and Scott M. Wilhelm  
University Hospitals/Case Western Reserve University, School of Medicine

**Background:** The incidence of thyroid cancer has more than doubled in recent decades. Debate continues if the rising incidence is due to an increased detection of small tumors or other factors. Our aims are to examine trends in thyroid cancer incidence and to analyze tumor histopathologic characteristics and treatment modalities.

**Method:** We evaluated a retrospective cohort of patients from 1973-2006 in the Surveillance, Epidemiology, and End Results (SEER) database of the National Cancer Institute. All thyroid cancer diagnoses (Papillary, Follicular, Medullary, and Anaplastic) were extracted, yielding 50,212 cases. We examined the incidence of thyroid cancer and compared variations based on tumor size and stage, as well as the surgical and adjuvant therapy of the tumors. Incidence rates (Data available 1973-2006) were age adjusted based on the U.S. population in 2000 expressed per 100,000 individuals with the use of SEER Stat. The Cochran-Armitage (CA) trend test was then used to examine the trends for papillary thyroid cancer (Tumor pathology data available from 1983-2006).  $P < 0.05$  was significant.

**Results:** Thyroid cancer (all types) increased from a rate of 4.5 per 100,000 in 1973 to 11.0 per 100,000 in 2006, a 2.4 fold increase. This change can be primarily attributed to a rise in papillary thyroid carcinoma (PTC), 2.67 to 8.78 per 100,000, a 3.3 fold increase ( $P < 0.0001$ ). The rise in PTC was further examined based on tumor size. While the incidence of micropapillary thyroid cancer (microPTC), tumor  $\leq 1$ cm, increased the most at a total of 441% between 1983-2006 or 19.2% per year, the incidence of PTC also increased significantly in 1.1-2cm tumors, 12.3%/year, 10.3%/year in 2.1-5cm tumors, and 12.0%/year for  $>5$  cm tumors (all  $P < 0.0001$  by CA trend test). Tumors confined to the thyroid increased at 15.1%/year, while PTC with regional lymph node metastases increased 15.6%/year. Annual rates of distant metastatic disease did not increase. Treatment for thyroid cancer has also shifted with total thyroidectomy replacing partial thyroidectomy as the most common surgical therapy.

**Conclusions:** Contrary to other studies, our data indicates that the rising incidence of thyroid cancer cannot be fully accounted for by an increased detection of small tumors representing microPTC. Other possible explanations for the rise in clinically significant ( $>1$  cm) well differentiated thyroid carcinoma should be explored.

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\*Paper 12 (8:15am - 8:30am)

THYROIDECTOMY WITH NEOADJUVANT PLX4720 EXTENDS SURVIVAL AND DECREASES TUMOR BURDEN IN AN ORTHOTOPIC MOUSE MODEL OF ANAPLASTIC THYROID CANCER

**Matthew A. Nehs**, Sushruta Nagarkatti, Carmelo Nucera, Richard A. Hodin, and Sareh Parangi

Massachusetts General Hospital

**Background:** Anaplastic thyroid cancer is among the most lethal of all human cancers and has very few therapeutic options. BRAFV600E is a common mutation in these tumors and represents a novel therapeutic target. We hypothesized that PLX4720 (a selective inhibitor of BRAFV600E) and subsequent thyroidectomy would extend survival and decrease tumor burden in an orthotopic mouse model of anaplastic thyroid cancer.

**Methods:** Orthotopic thyroid tumors were induced in SCID mice using the human-derived anaplastic thyroid cancer cell line, 8505c. Three experimental conditions were used: Vehicle+Sham Surgery (Group 1, n=5), PLX4720+Sham Surgery (Group 2, n=6), and PLX4720+Thyroidectomy (Group 3, n=6). Either PLX4720 or vehicle was administered for three weeks after a one week period of tumor growth. Thyroidectomy or sham surgery was performed after two weeks of tumor growth. At 35 days, the neck space was re-explored and tumor volume was measured. Mice were sacrificed when they lost >25% of their initial weight or developed tracheal compression symptoms.

**Results:** All (five) mice in Group 1 had invasive, unresectable tumors at two weeks that developed into large thyroid tumors (average 61 mm<sup>3</sup>) at 35 days. All of these mice developed cachexia and met criteria to be sacrificed at 35 days. All (six) mice in Group 2 had small tumors (average 1.3 mm<sup>3</sup>) and maintained their weight. In Group 3, three of six mice had no evidence of tumor at 35 days; the other three mice had small tumors (average 1.4 mm<sup>3</sup>) and showed no signs of metastatic disease. All mice in groups 2 and 3 were alive and well-appearing at 50 days.

**Conclusions:** While orthotopic anaplastic thyroid cancer (8505c) is uniformly fatal in untreated mice, early treatment with PLX4720 and thyroidectomy dramatically reduces tumor volume and extends survival. Thyroidectomy with neoadjuvant PLX4720 could be an effective therapeutic strategy for early anaplastic thyroid cancers that harbor the BRAFV600E mutation and are refractory to conventional therapeutic modalities.

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\*Paper 13 (8:30am - 8:45am)

## IS DVT PROPHYLAXIS NECESSARY FOR THYROIDECTOMY AND PARATHYROIDECTOMY?

**Madhu Roy**, Victoria Rajamanickam, Herbert Chen, and Rebecca Sippel  
University of Wisconsin

**Background:** Recent guidelines suggest pharmacologic DVT prophylaxis in all patients undergoing major surgical procedures to minimize the risk of post-operative DVT and PE. Pharmacologic DVT prophylaxis peri-operatively may increase the risk of bleeding complications. We hypothesized that the risk of DVT formation in patients undergoing thyroid and parathyroid surgeries is significantly lower than other surgical procedures. We also hypothesized that these patients are at a much higher risk of developing life-threatening bleeding complications. Therefore, the risk to benefit ratio of DVT prophylaxis in this group of patients may need to be reconsidered.

**Methods:** A review of the ACS NSQIP Database from 2005-2007 was performed. The incidence of DVT/PE complications in the entire cohort of 347,862 patients was compared to the 16,022 patients who underwent a thyroidectomy or parathyroidectomy. We identified risk factors for DVT/PE and developed a surrogate variable to determine the risk for post-operative bleeding.

**Results:** The risk of DVT/PE complication in the total surgical population was 0.96% while the incidence in the thyroidectomy and parathyroidectomy patients was only 0.16%, 6 fold less than the entire cohort ( $p < 0.001$ ). In a univariate analysis, the variables associated with a higher risk of DVT formation were the 'duration the patient is in the room', 'the anesthesia time', 'length of total hospital stay', and 'history of CVA'. While bleeding, not requiring a transfusion, is not specifically tracked in NSQIP, return to the operating room is. After eliminating patients that had undergone a thyroid lobectomy who were found to have cancer, and eliminating patients with wound infections, we found that the remaining patients had a 1.6% incidence of returning to the operating room within the first 30 days. This suggests that the risk of bleeding requiring a return to the operating room may be as high as 1.6%, which is 10 fold higher than the risk of developing a DVT/PE ( $p < 0.001$ ).

**Conclusions:** Patients undergoing thyroidectomy and parathyroidectomy have a very low incidence of developing DVT/PE complications and have a significantly higher risk of developing bleeding complications. Hence we believe that DVT prophylaxis should not be mandatory for thyroidectomy and parathyroidectomy cases and should be done at the discretion of the surgeon in select high-risk patients.

\* Denotes Resident/Fellow Research Award Competition Paper

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Paper 14 (8:45am - 9:00am)

DO INTRA-OPERATIVE HORMONE ASSAYS GUIDE THE EXTENT OF SURGICAL RESECTION IN THE MANAGEMENT OF SPORADIC AND SYNDROMIC INSULINOMA?

**James Kirkby-Bott**, Robert Caiazzo, Laurent Arnalsteen, Pascal Pigny, Emmanuelle Leteurtre, Guelareh Dezfoulian, Marie-Christine Vantyghem, Michele D'Herbomez, Rachel Desailoud, Odile Verrier Mine, Jean-Louis Wemeau, Bruno Carnaille, François Pattou

Dept Endocrine & Metabolic surgery, Hopital Huriez, CHU

**Background:** Surgery for insulinoma is sometimes complex, especially in certain cases: syndromic disease, equivocal imaging findings and when a laparoscopic approach is planned. Like in parathyroid surgery, intra-operative peptide assay has been proposed to guide the surgical management of insulinoma. In this study we assessed the performance of intra-operative insulin assay (IOIA) and its clinical usefulness in patients with sporadic and syndromic insulinoma.

**Method:** Patients operated on for insulinoma between 1998 and 2009 underwent intra-operative insulin measurement (IOIA). Insulin, proinsulin, C-peptide and insulin: glucose ratios were measured in portal and peripheral vein samples at 5 and 20 minutes post excision. At the end of the study the threshold of change in peptide levels needed to predict biochemical cure after surgery was determined using a receiver operating characteristic (ROC) curve. We assessed the performance of the test in sporadic and syndromic cases. IOIA was considered clinically useful when its results significantly affected the extent of surgery.

**Results:** A total of 33 patients (22 female, 11 male median age 44 years), including 21 with sporadic insulinomas and 12 syndromic cases (9 MEN-1, 2 carcinomas and 1 islet cell hyperplasia) were enrolled. Biochemical cure was achieved after surgery in 100% of sporadic cases and 11/12 (92%) of syndromic cases. ROC curve analysis showed that the most accurate parameter was an insulin drop greater than 50%, 20 minutes after excision. Portal sampling gave no advantage over peripheral sampling. In sporadic cases IOIA had a positive predictive value (PPV) of 100% and sensitivity of 91%; and determined the extent of surgery in 2 patients (10%) with equivocal imaging. In syndromic cases IOIA had a positive predictive value (PPV) of 90% and sensitivity of 90%; and determined the extent of surgery in 3 patients (25%) with multiple lesions on imaging.

**Conclusion:** We found that IOIA was clinically useful in the surgical treatment of insulinomas. A 50% drop in insulin levels in peripheral blood 20 minutes after excision confirmed biochemical cure after the excision of a seemingly unique lesion. IOIA guided the extent of resection in cases with multiple lesions.

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Paper 15 (9:00am - 9:15am)

A PROSPECTIVE TRIAL EVALUATING THE ACCURACY OF USING COMBINED CLINICAL FACTORS AND CANDIDATE DIAGNOSTIC MARKERS TO REFINE THE ACCURACY OF THYROID FINE NEEDLE ASPIRATION BIOPSY

**Aarti Mathur**, Julie Weng , Willieford Moses , Seth Steinberg, Quan-Yang Duh, Orlo H. Clark, Electron Kebebew

National Institutes of Health/NCI

**Background:** Although thyroid fine needle aspiration (FNA) biopsy is an accurate diagnostic test to evaluate for malignancy, approximately 30% will provide inconclusive Results (indeterminate, suspicious, or nondiagnostic). The development of adjunct diagnostic approaches to thyroid FNA biopsy has been an active area of thyroid cancer research with candidate markers identified. We conducted a prospective trial to determine if clinical, imaging, laboratory and molecular markers could be used in combination to improve the accuracy of thyroid FNA biopsy.

**Methods:** 423 patients were enrolled in a prospective trial. Demographic, clinical, imaging, tumor FNA genotype for common somatic mutations (BRAF V600E, NRAS, KRAS, RET/PTC1, RET/PTC3, NTRK1) and 6 candidate gene expression levels were analyzed to determine if they could reliably distinguish benign from malignant thyroid tumors. FNA cytologic interpretation was classified according to the NCI State of the Science recommendation. Univariate and multivariate analyses were performed to determine which factors predict malignancy.

**Results:** Out of 423 patients with a dominant thyroid nodule, 302 were benign and 121 were malignant. Univariate analysis revealed a significant difference in patient age, gender, greatest tumor diameter on ultrasound, presence of a somatic mutation, and 4 of 6 candidate gene expression levels ( $p \leq 0.01$ ). By multivariate analysis age, gender, FNA cytology classification, and TIMP1 expression level were significant predictors of malignancy ( $p \leq 0.03$ ). The overall accuracy of the scoring model to distinguish benign from malignant thyroid tumors was 89%. In the indeterminate FNA biopsies, 32% (21/66) were malignant. The scoring model, when applied was 65% accurate with a specificity of 93% and sensitivity of 5%. In the suspicious FNA group, 59% were malignant and increased to 82% using the scoring model with a sensitivity of 88% and specificity of 73%.

**Conclusions:** Age, classification of FNA cytology, and TIMP1 mRNA expression levels in combination have a high diagnostic accuracy to allow selection of more definitive initial surgical treatment but the sensitivity is not high enough to avoid the need for diagnostic thyroidectomies in patients with indeterminate FNA findings.

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\*Paper 16 (10:00am - 10:15am)

ALDOSTERONE-SECRETING ADRENAL ADENOMAS - IS SURGERY TOO EXPENSIVE?

**BethAnn Reimel**, Mark J. Russo, Kyle Zanooco, Rasa Zarnegar, Cord Sturgeon, Orlo H. Clark, John D Allendorf, John A Chabot, Quan-Yang Duh, James A Lee  
Columbia University Medical Center

**Background:** Primary hyperaldosteronism (PHA) is the disease characterized by excessive secretion of aldosterone by the adrenal glands. In the majority of cases, this is due to an aldosterone-secreting adrenal adenoma. Recently, there has been some controversy over the best management of patients with this problem. Some endocrinologists have suggested that long-term medical management with oral spironolactone is preferable to surgical resection via laparoscopic adrenalectomy, even in younger patients. In our current cultural and economic environment, the financial cost associated with treatment options should be one of the points considered as we make medical decisions. In this study, we sought to compare the cost of long-term medical management to surgical resection in patients with primary hyperaldosteronism.

**Methods:** Based on review of the literature and a series of 122 patients with primary hyperaldosteronism that underwent laparoscopic adrenalectomy at a tertiary medical center between 1994 and 2006, success rates were determined for the various medical and surgical treatment arms.

Medicare reimbursement rates and Agency for Healthcare Research and Quality database were used to obtain costs of treatment regimens. Cost analysis differentiated between one-time costs and those to be multiplied by years of life.

Decision analysis was performed by constructing a Markov state transition model comparing two strategies: (1) medical management of aldosteronomas (2) surgical resection of aldosteronomas. Extensive sensitivity analyses were performed. A threshold analysis was performed to determine the number of years from diagnosis when surgery becomes the less costly treatment strategy.

**Results:** Threshold analysis was performed to determine the time (from diagnosis to end-of-life) at which surgical treatment becomes a less costly option than medical treatment. Our analyses found that if, at the time of diagnosis, the patient has a life expectancy of 15.9 years or more, surgery is less costly than medical management, and is the optimal strategy from a cost perspective. The discounted average cost of the surgical strategy was \$33,437 vs \$54,946 in a 40-year-old with a 48 year life expectancy.

**Conclusions:** For patients with PHA due to an adrenal aldosteronoma, surgery is the optimal strategy from a cost-perspective if, at the time of diagnosis, the patient has a life expectancy of 15.9 years or more.

\* Denotes Resident/Fellow Research Award Competition Paper

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Paper 17 (10:15am - 10:30am)

## DIFFERENTIATING HUMAN STEM CELLS INTO PARATHYROID FOR TREATMENT OF HYPOPARATHYROIDISM

**Kathleen M. Woods** Ignatoski, Eve L. Bingham and Gerard M. Doherty  
University of Michigan

**Background:** Loss of parathyroid gland function (hypoparathyroidism) is the most frequent permanent complication of thyroid and parathyroid surgery. Hypoparathyroidism is poorly managed by currently available replacement methods which require the patient to take multiple daily oral doses of vitamin D and calcium supplements to avoid neuromuscular symptoms, but do not alleviate chronic bone problems; therefore, new therapies are needed.

Parathyroid glands are optimal for cellular replacement therapy because: (1) each parathyroid cell contains the complete function of the organ; (2) the total number of cells needed for function is small; (3) no architectural arrangement of parathyroid cells is needed to support or enhance the function of the organ; and (4) transplantation of autologous parathyroid cells has been proven to reconstitute normal parathyroid function. Our hypothesis is that human stem cells in culture can be differentiated into parathyroid cells and used to reconstitute parathyroid function.

**Methods:** We have modified the differentiation procedure used by D'Amour (Nat. Biotechnol. (2005). 23 (12): 1534-41) to differentiate the BG01 human embryonic stem cells (hESC).

**Results:** Differentiated BG01 cells expressed the mRNA for certain biomarkers of normal parathyroid cells including calcium sensing receptor (CaSR; which is present on parathyroid cells), CXCR4 (an epithelial marker), GCM2 (a parathyroid specific marker), and parathyroid hormone (PTH). CaSR and CxCr4 were also present on approximately 90% of the cells by immuno-fluorescence. The differentiated cells also expressed parathyroid hormone (PTH). We have successfully replicated the differentiation seen in the BG01 cells in H1 hESC cells. We have been able to isolate CaSR+ cells from long term cultures of H1 cells that have undergone our differentiation protocol.

**Conclusions:** These data suggest that hESC cells were successfully differentiated into parathyroid cells. We are in the process of identifying pluripotent adult cells to be used with our differentiation scheme to create parathyroid for therapeutic purposes. These data give a solid rationale for the isolation of parathyroid stem cells from human tissue for parathyroid replacement therapy in clinical hypoparathyroidism.

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Paper 18 (10:30am - 10:45am)

## IMPACT OF SECOND PRIMARY MALIGNANCY ON OUTCOMES OF DIFFERENTIATED THYROID CARCINOMA

**Brian H Lang**, Chung-Yau Lo, Irene Oi Wong, Benjamin Cowling  
The University of Hong Kong

**Background:** Differentiated thyroid carcinoma (DTC) generally affects relatively young patients with a good life-expectancy and so the occurrence of second primary malignancy (SPM) poses a real concern to these patients. The study aimed at evaluating the risk of SPM in DTC patients' cohort and assessing whether its occurrence and timing have any impact on the clinical course of DTC.

**Methods:** A retrospective review of 1043 DTC patients managed at our institution from 1970 - 2008 was performed. All SPMs were captured by the territory-wide Clinical Management System. Among the 132 SPMs, 27 were synchronous (i.e. diagnosed within 6 months of DTC, group 1) and 69 were metachronous (diagnosed > 6months after DTC, group 2). The total person-years of observation were 10419. The standardized incidence ratio (SIR), based on the age- and sex-specific cancer incidence rates from the local cancer registry, was calculated. Kaplan-Meier analysis was used to estimate survivals and comparison of survival was performed by the log rank test.

**Results:** There was a 39% increase in SPM rate (SIR = 1.39, 95% CI: 1.09 - 1.73) in DTC patients compared with the general population. The 3 commonest SPM sites were breast (n=14), colon (n=10) and lung (n=8). Despite similar DTC-specific survival, those with SPM had a worse overall survival than those without SPM ( $p<0.001$ ). When DTC's features were compared, group 1 tumors were more advanced-TNM-stage than group 2 ( $p<0.001$ ), even though they were more often detected incidentally on imaging ( $p<0.001$ ) and smaller in size ( $p=0.005$ ). As a result, group 1 had worse 5-yr and 10-yr DTC-specific survivals than group 2 (77.65%, 77.65% vs 100%, 100%,  $p=0.002$ , respectively). However, group 2 had worse 3-yr and 5-yr SPM-specific survivals than group 1 (77.52%, 77.52% vs 55.04%, 47.81%,  $p=0.042$ ). Fewer patients in group 2 were able to receive curative treatment for SPM after discovery (38/69 vs 21/27,  $p=0.040$ ).

**Conclusion:** Our patients' cohort was at increased risk of developing SPM. Despite similar DTC-specific survival, those with SPM had a worse overall survival than those without. Patients with synchronous SPM had more advanced DTC and were more likely to die from DTC than those with metachronous SPM. In contrast, those with metachronous SPM were more likely to die from SPM as fewer patients were able to receive curative treatment. Perhaps, closer postoperative SPM surveillance should be considered in the future.

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Paper 19 (10:45am - 11:00am)

## MANAGEMENT OF CERVICAL NODE METASTASES DETECTED ON TOTAL-BODY I-131 IMAGING FOLLOWING INITIAL SURGERY FOR WELL-DIFFERENTIATED PAPILLARY THYROID CARCINOMA

**Jeffrey F. Moley**, Bruce H. Haughey, Perry W. Grigsby  
Washington University School of Medicine

**Background:** Following surgery and post-operative I-131 treatment, patients undergo a post-therapy total-body I-131 scan. The purpose of this study was to evaluate the outcome of patients whose post-therapy scan demonstrated I-131 uptake in cervical lymph nodes.

**Methods:** This is a prospective cohort study of 95 patients with well-differentiated thyroid carcinoma. All patients underwent a total thyroidectomy and 66/95 (69%) had a lymph node dissection. Post-operatively, all patients were treated with I-131 (mean, 125 mCi) and 3 to 5 days later they underwent a post-therapy total-body I-131 scan. The post-therapy I-131 total-body scan demonstrated physiologic uptake in the thyroid bed and abnormal I-131 uptake in cervical lymph nodes in all 95 patients. Patients were subsequently evaluated by further total-body I-131 scans and treated with additional I-131 or surgical excision of cervical lymph nodes as clinically indicated. Patients were followed for a mean of 6.8 years and progression-free survival was evaluated.

**Results:** Patients received a total of one to three I-131 administrations (mean 235 mCi). Surveillance total-body imaging and serum thyroglobulin were performed to evaluate for persistent disease. I-131 uptake was eliminated from the thyroid bed in all patients. Persistent I-131 uptake was detected in cervical lymph nodes in 7/95 (7%) and these 7 patients underwent lymph node excision. All patients subsequently had a negative total-body I-131 scan and an undetectable serum thyroglobulin. Nine patients (9/95, 9%) developed recurrent disease in cervical lymph nodes requiring surgical excision. At last follow-up, all patients were free of disease.

**Conclusions:** Most patients (83%) with cervical lymph node metastasis detected on their initial post-therapy total-body I-131 scan are rendered free of disease with I-131. Surgical intervention was required in 17% (16/95). The use and timing of additional I-131 therapy versus surgical intervention in this group of patients needs to be further evaluated.

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Paper 20 (11:00am - 11:15am)

## ROBOTIC THYROID SURGERY BY BILATERAL AXILLO-BREAST APPROACH USING DA VINCI SURGICAL SYSTEM

**Kyu Eun Lee**, Su-jin Kim, Jeonghun Lee, Do Hoon Koo, Seung Keun Oh, Yeo-Kyu Youn  
Seoul National University College of Medicine

**Background:** Robotic surgery is useful in areas with difficult access like the pelvis. The ideal indications for robotic surgery are still to be established. The neck area, especially the thyroid gland poses a difficult challenge for many endoscopic surgeons. Robotic surgery is useful in this area due to its excellent magnification and endo-wrist function. We present our experience with robotic endoscopic thyroidectomy using the bilateral axillary breast approach.

**Patients and Methods:** From February, 2008 to August 2009, we applied da Vinci surgical system to BABA endoscopic neck surgery for 275 patients. The male to female ratio was 1:7.33. Mean age of the patients were 38.1 ± 8.9 (13-66) years. After subcutaneous infiltration with diluted epinephrine solution, subplatysmal and subcutaneous space was dissected. Two circumareolar ports and 2 axillary ports were used and operative space was obtained with low pressure CO<sub>2</sub> gas insufflation. We could obtain sufficient robotic arm mobility. Total thyroidectomies and central node dissection were done in a manner similar to BABA endoscopic thyroid surgery.

**Results:** BABA robotic thyroid surgery included 9 thyroid lobectomies, 17 subtotal thyroidectomies, and 174 total thyroidectomies. The mean operation time was 210.0445.5 min. The mean console time was 126436.5 min. The mean operation time of total thyroidectomy was 208.6439.2 min. The intraoperative loss of blood was minimal. The mean hospital stay was 3.54 ± 0.7 day. The pathologic diagnosis included 187 papillary carcinoma, 1 follicular adenoma, 1 Hashimoto's thyroiditis, 1 focal fibrosis, and 4 adenomatous goiter. There was 1 case of conversion to open surgery. There were 56 (28.0%) cases of transient hypoparathyroidism and 3 cases (1.5%) of permanent hypoparathyroidism. There were 15 cases (7.5%) of transient and 1 case (0.5%) of permanent recurrent laryngeal nerve palsy. One (0.5%) postoperative bleeding and one case (0.5%) of pneumothorax developed. Cosmetic results were excellent and patients were all satisfied.

**Conclusion:** The Robot BABA endoscopic thyroid surgery would be a feasible method for thyroidectomy with an excellent operative visualization, optimal robotic arm mobility, minimal adverse effect, and excellent cosmetic result.

# ABSTRACTS CONT.

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Paper 21 (11:15am - 11:30am)

## INITIAL YUMC EXPERIENCE OF ROBOT-ASSISTED MODIFIED RADICAL NECK DISSECTION IN THE MANAGEMENT OF THYROID CARCINOMA WITH LATERAL LYMPH NODE METASTASIS

**Sang-Wook Kang** , So Hee Lee , Haeng Rang Ryu , Kang Young Rhee , Jong Ju Jeong , Kee-Hyun Nam and Woong Youn Chung  
Department of Surgery, Yonsei University College of Medicine

**Background:** Since the introduction of endoscopic technique to thyroid operation, several trials of endoscopic lateral neck dissection have been reported for the purpose of avoiding a long cervical scar after surgery. However, it definitely took more effort and operation time than open surgery mainly due to 2-dimensional view and technical limitations caused by long and rigid instruments. With the incorporation of surgical robotic system into the thyroid surgery, still and meticulous dissection have been enabled and more precise and improved endoscopic techniques have been accomplished. In this study, our initial experience of robot-assisted modified radical neck dissection (MRND) in thyroid cancer with da Vinci robotic system is described.

**Method:** From Oct. 2007 to Oct. 2009, 995 patients have undergone robot-assisted thyroidectomy using a gasless, transaxillary approach (RAT-TAA) for thyroid cancer. Among them, 33 patients have been performed additional robotic MRND for lateral LN metastasis. We have performed this procedure using two skin incisions (a 7-8 cm ipsilateral axilla and a 0.8 cm anterior chest incision). The clinico-pathologic data of the patients were analyzed retrospectively.

**Results :** The mean age of patients was 37.249.2 years and gender ratio (male to female) was 7:26. Mean operation time was 280.8440.6 min. and mean post operative hospital stay was 5.441.6 days. The mean tumor size was 1.0940.52 cm and PTMC was in 20 cases (60.6%). Mean retrieved L/N numbers are 6.144.4 in central compartment and 27.7411.0 in lateral neck compartment. There was no serious post operative complication such as Horner syndrome and major nerve injury (vagus, spinal accessory, hypoglossal, marginal mandibular branch of facial nerve and recurrent laryngeal nerve). There were 3 cases of minor chyle leak and all of the cases were resolved through conservative management.

**Conclusion :** This noble procedure of robot-assisted MRND is technically feasible, safe and cosmetically excellent. Through this method, precise manipulation of robotic instruments makes it possible to perform complete compartment-oriented dissection without any injury of major vessels or nerves and any compromising of surgical oncologic principles. From our initial experience, the robot-assisted MRND can be the acceptable alternative as an operative method, currently in the low risk, well-differentiated thyroid cancer patients with lateral neck metastasis.

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Paper 22 (1:30pm - 1:45pm)

THE IMPACT OF THE 2009 ATA GUIDELINES ON THE CHOICE OF OPERATION FOR WELL-DIFFERENTIATED THYROID MICROCARCINOMAS

**Keith S. Heller**, Jennifer B. Ogilvie

New York University Langone Medical Center

**Background:** The choice of operation for differentiated thyroid cancer (DTC) is controversial. The 2009 ATA Guidelines state "lobectomy alone may be sufficient treatment for small (<1cm), low risk, unifocal, intrathyroidal papillary carcinomas in the absence of prior head and neck irradiation or... nodal metastases." This study was undertaken to determine how often these criteria are satisfied and whether size alone is sufficient to dictate surgical management.

**Methods:** The charts of all 346 pts undergoing initial surgery for DTC from 1/1/07 - 11/10/09 were reviewed. 130 pts with tumors  $\leq$  10mm and negative lateral nodes were identified. These were divided into 2 groups: Group 1 - tumors  $\leq$  5mm (57 pts) and Group 2 - tumors 6-10 mm (73 pts). Pathology reports were reviewed for adverse features including multifocality, extrathyroid extension, vascular invasion and central node metastases.

**Results:** DTC was found incidentally at the time of thyroidectomy performed for other indications in 52 (40%). Preoperative FNA was performed in 78 (60%): 44 papillary cancer (PTC), 22 suspicious for PTC and 12 follicular neoplasm. 4 pts had a history of radiation. 109/130 (84%) underwent total thyroidectomy and 21 (16%) had a central node dissection. Surgical pathology revealed PTC (103), follicular variant of PTC (19), other subtypes of PTC (6) and follicular cancer (2). 50% of patients had no adverse pathologic features. Adverse pathologic features included 45% with multifocal tumors, 8% with extrathyroid extension and 17% with vascular invasion. At least 1 central node was removed in 66 pts, and 14% had nodal metastases. Groups 1 and 2 were compared. 75% of DTC in Group 1 were incidental findings compared to only 12% in Group 2. In Group 1, 67% had no adverse features, compared with only 37% in Group 2 ( $p=0.001$ ). Multifocality was the most common adverse finding: 32% in Group 1 vs. 55% in Group 2 ( $p=0.004$ ). Pts with multifocal DTC who underwent total thyroidectomy had bilateral disease in 53% of Group 1, vs. 82% of Group 2 ( $p=0.0005$ ). Positive central nodes were identified in 4% of Group 1 and 22% of Group 2 ( $P=0.004$ ).

**Conclusion:** This study makes no claims that total thyroidectomy will decrease local recurrence or increase survival in patients with DTC. However, if the current ATA Guidelines are followed, the high incidence of adverse pathologic features suggests that total thyroidectomy should be strongly considered as the initial surgery for patients with DTC > 5mm.

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Paper 23 (1:45pm - 2:00pm)

A NOVEL RET INHIBITOR WITH POTENT EFFICACY AGAINST MEDULLARY THYROID CANCER IN VIVO.

**Abbas K. Samadi**, Anuj Shah, Ridhwi Mukerji, Barbara N. Timmermann, and Mark S. Cohen

University of Kansas Medical Center

**Background:** Medullary thyroid carcinoma (MTC) represents 5 to 7% of thyroid cancers, but remains a challenge to treat with over 50% of patients recurring or progressing despite optimal surgical resection. Although new targeted therapies are being tested clinically, there remains a paucity of chemotherapeutics with durable efficacy and tolerable toxicity profiles. The purpose of this study was to build upon previous in vitro work and evaluate a novel natural product RET inhibitor for its efficacy in a metastatic model of MTC in vivo.

**Methods:** A metastatic mouse model for MTC was established by injection of 8 million DRO-81-1 human MTC cells in the left neck posterior triangle nodal group of Nu/Nu female mice. In this model, animals demonstrate metastatic spread locally as well as to viscera especially the liver, spleen, and lungs. Primary tumors were measured daily by digital calipers and treatment with Withaferin A (WA at 8 mg/kg/day i.p. x 21 days) was started once tumor volume >100 mm<sup>3</sup> (~2-3 wks. post-injection). Weights and body score were measured 3x/week for the duration of the study and animals were removed from the study once weight decreased by >10% or body score deteriorated.

**Results:** All control animals (saline; n=5) died from metastatic disease by 6 weeks post injection. All treated animals (WA; n=5) were alive after 12 weeks post injection (6 wks post-treatment); p<0.01. Four treated mice (80%) had complete regression of tumor without recurrence or metastatic disease after 12 weeks post-injection. The remaining animal was alive with tumor that continued to grow after therapy. This mouse had a larger tumor volume at the start of treatment (200 mm<sup>3</sup>). All treated animals demonstrated no clinical toxicity or weight changes for the duration of the study. Tumor cells treated with WA demonstrated inhibition of total and phospho-RET levels by Western-Blot analysis in a dose-dependent manner (almost complete inhibition with 3 uM WA treatment) as well as potent inhibition of phospho-ERK and phospho-AKT levels.

**Conclusions:** Withaferin A is a novel natural product RET inhibitor with potent antitumor effects in a metastatic model of MTC with 80% of treated animals demonstrating a complete response to therapy without recurrence. Animals demonstrated no weight changes or clinical toxicities at the treatment dose given. Further studies on long-term efficacy, toxicity and dose-escalation are warranted to evaluate this compound for clinical translation.

# ABSTRACTS CONT.

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Paper 24 (3:30pm - 3:45pm)

OUTCOMES AND QUALITY OF LIFE AFTER PARTIAL PANCREATECTOMY FOR NON-INSULINOMA PANCREATOGENOUS HYPOGLYCEMIA SYNDROME

**Kimberly A. Vanderveen**, Clive S. Grant, Geoffrey B. Thompson  
Mayo Clinic

**Background:** Noninsulinoma pancreatogenous hypoglycemia syndrome (NIPHS) is an increasingly important cause of endogenous hyperinsulinemic hypoglycemia. Particularly in patients who have undergone prior Roux-Y gastric bypass for obesity or other gastric or vagal operations, the pathophysiology is strongly suspected to be a secondary phenomenon related to the prior procedure. Whereas partial pancreatectomy has been documented to be successful in controlling hypoglycemia early postoperatively, later follow-up indicated relapse of identical symptoms. The goal of this study was to assess the frequency and severity of recurrent symptoms in operated NIPHS patients.

**Methods:** All patients who had undergone pancreatic resection for NIPHS at our institution from January 1996 through December 2008 were reviewed for demographics, preoperative biochemical and radiologic evaluation, operative procedure and postoperative complications. Additionally, a mail survey including questions on pre- and post-surgical symptoms, European Quality of Life Survey (EQ-5D), and Fear of Hypoglycemia Scale (FOHS-98) was sent to all surviving patients. The EQ-5D is a validated, 5-category quality of life (QOL) instrument. The FOHS-98 has been validated in medically-treated diabetics, addressing psychological impact and behavioral modifications in these patients who experience hypoglycemia. This tool seemed applicable to our patients.

**Results:** 75 patients underwent pancreatic resection for NIPHS (57; 2004-8); 69 were eligible for survey participation (5 deceased, 1 incarcerated). 48 patients (70%) completed the survey, mean follow-up of 53 months. Forty-one patients (87%) reported recurrent symptoms; one patient underwent total pancreatectomy for severe persistent symptoms. Median time to recurrent symptoms was 16 months (range, <1 - 157 mo.). Despite symptom recurrence, almost all patients reported overall improvement in pre- versus postoperative QOL; median EQ-5D overall health scores increased from 40 to 75 out of 100 ( $p < 0.001$ ). Moreover, they noted marked reduction in psychological stress and hypoglycemic symptoms with greater than 50% decrease in median scores on the overall, worry, and behavioral scores on the FOHS-98 ( $p < 0.001$ ).

**Conclusions:** Although nearly 90% of patients developed recurrence of their preoperative hypoglycemic symptoms, almost all reported significant overall improvements in QOL and marked reduction in symptom severity after pancreatic resection.

# ABSTRACTS CONT.

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Paper 25 (3:45pm - 4:00pm)

## BETTER PRESERVATION OF ENDOCRINE AND EXOCRINE FUNCTION FOLLOWING CENTRAL VERSUS DISTAL PANCREATECTOMY FOR MID-GLAND LESIONS

**Leaque Ahmed**, Joseph DiNorcia, Minna K. Lee, BA, Patrick L. Reavey, Elizabeth A. Yakaitis, BA, James A. Lee, Beth A. Schrope, John A. Chabot, and John D. Allendorf  
Columbia University College of Physicians and Surgeons

**Background:** Benign and low-grade malignant neoplasms of the neck or body of the pancreas traditionally are treated by pancreaticoduodenectomy or distal pancreatectomy (DP) when enucleation is not appropriate. These extended resections result in a loss of normal pancreatic tissue that may lead to endocrine and exocrine insufficiency. Central pancreatectomy (CP) is a tissue-sparing option for lesions of the mid-pancreas. This study compares rates of glycemic control and pancreatic insufficiency in patients undergoing central versus distal pancreatectomy.

**Methods:** We identified patients who underwent central or distal pancreatectomy between March 1991 and June 2009 and retrospectively collected demographic and perioperative data. We compared pathology characteristics, operative morbidity, and postoperative pancreatic function in 50 patients undergoing CP who were matched for age, gender, race, and pathology to 50 DP patients using Wilcoxon signed-rank test for continuous and McNemar's test for categorical variables.

**Results:** Sixty-seven patients with a mean age of 57.5 years underwent CP for varying pathology. The proximal pancreas was sutured (45, 67.2%) or stapled with reinforcement (22, 32.8%). The distal pancreas was reconstructed via pancreaticogastrostomy (65, 97%) or pancreaticojejunostomy (2, 3%). The median operative time was 310.5 minutes with a median EBL of 400ml. The overall morbidity was 38.8% with no perioperative deaths. One patient required reoperation for hemorrhage. The median length of stay was 6 days. The median follow-up was 34 months. When compared to a matched group of DP patients, there were no significant differences in length of stay, pancreatic fistula, morbidity, and mortality. The CP group had less pancreas resected (length 4.35 vs. 9.00cm,  $p < 0.0001$ ) for smaller lesions (diameter 2.0 vs. 2.5cm,  $p = 0.004$ ). The CP group also had a lower rate of new-onset or worsening diabetes than the DP group (14% vs. 40%,  $p = 0.012$ ). Of the new-onset or worsening diabetics, only 1 (2%) required insulin in the CP group whereas 14 (28%) were insulin-dependent in the DP group ( $p = 0.001$ ). There were no differences in pancreatic exocrine function as assessed by the need for enzyme supplementation.

**Conclusion:** CP is a safe, effective treatment for benign and low-grade malignant neoplasms of the mid-pancreas. Patients undergoing CP have a markedly decreased insulin requirement compared to DP patients.

NOTES

Paper 26 (4:00pm - 4:15pm)

## COST-EFFECTIVE ANALYSIS FOR ADRENAL LESIONS: IMMEDIATE LAPAROSCOPIC ADRENALECTOMY VERSUS OBSERVATION

**Michael T. Stang**, Linwah Yip, Matthew R. Rosengart, Michaele J. Armstrong, , Sally E. Carty, Adrienne L. Melck  
University of Pittsburgh Medical Center

**Introduction:** The management of adrenal masses that are <6 cm, non-functional and have complex and/or lipid-poor imaging characteristics is controversial. The options include resection or observation with serial imaging and biochemical studies; however, the optimal duration of nonoperative follow-up is unknown. We evaluated the cost-effectiveness of immediate laparoscopic adrenalectomy versus observation for these lesions.

**Methods:** We reviewed 122 patients evaluated for an adrenal mass between 1/04 and 12/05. The number and type of imaging (CT or MRI), biochemical studies, operative procedure, and length of follow-up was determined. Patients were classified as either having immediate surgery (IS) or undergoing observation (OBS) with serial imaging and biochemical studies. Intention-to-treat analysis comparing total hospital charges and adjusted costs was done using the Wilcoxon rank-sum test;  $p < .05$  was considered significant.

**Results:** A total of 16/122 (13%) patients had nonfunctional adrenal masses <6cm with lipid-poor and/or complex imaging characteristics; 9 and 7 patients were grouped into the IS and OBS cohorts, respectively. The IS cohort had no postoperative complications and a mean length of stay of 1.9 days (range, 1-4). The OBS cohort was followed for a median of 31 months (range, 2-67), receiving an average of 1.9 CTs, 2.4 MRIs, and 1.7 24-hour urinary analyses. Two OBS patients underwent adrenalectomy after 7 and 9 months. With this short-term follow-up, the mean cost of IS was significantly higher than OBS (\$10,541 v. \$6,889,  $p=.03$ ). After projecting for annual surveillance with CT, urine metanephrines and a low-dose dexamethasone suppression test, OBS would exceed the cost of IS after 5 years (\$10,725).

**Conclusion:** Patients with a <6cm, nonfunctional adrenal lesion that have lipid-poor and/or complex imaging characteristics can be followed initially with annual imaging and functional studies. In the absence of adequate natural history data for these unique lesions, our institutional preference is to follow these indefinitely. However, beyond 4 years of surveillance, it becomes more cost-effective to proceed with laparoscopic adrenalectomy. The decision for immediate surgery must also consider patient compliance, psychologic impact, and the cumulative radiation effects of yearly follow-up.

NOTES

Paper 27 (4:15pm - 4:30pm)

## IMPACT OF RESECTIONAL STANDARDS IN THYROID CANCER INVADING THE AERODIGESTIVE TRACT ON INDICATION AND SURVIVAL

**Michael Brauckhoff (1,2,3)**, Anja Schmeil (1), Carsten Sekulla (1), Kerstin Lorenz (1), Katrin Brauckhoff (1,3), Henning Dralle (1)

(1) Department of General-, Visceral and Vascular Surgery, University of Halle, Halle, Germany

(2) Institute of Surgical Sciences, University of Bergen, Bergen, Norway

(3) Department of Surgery, Haukeland University Hospital, Bergen, Norway

**Background:** Radical surgery in patients with thyroid cancer invading trachea and/or esophagus is controversial and not standardized.

**Patients and Methods:** Since 1995, 106 consecutive patients (male/female n=61/45, mean age 41.54±7.8 yr) with thyroid cancer (differentiated thyroid cancer (DTC) n=58, medullary thyroid cancer (MTC) n=23, poorly and undifferentiated thyroid cancer (PDTC/UTC) n=25) invading trachea and/or esophagus underwent resection (n=74) or shaving (n=32) procedures. Resection procedures on trachea were classified as window resection (type 1 (laryngocricoid) n=18 and type 2 (trachea) n=12), sleeve resection (type 3 (laryngocricoid) n=12 and type 4 (trachea) n=14), and cervical evisceration (type 5 (laryngectomy) n=9 and type 6 (laryngoesophagectomy) n=9). Disease specific survival (DSS), local recurrence rate, and prognostic factors were analyzed.

**Results:** Surgical morbidity was highest in cervical evisceration (55%) when compared to type 1+2 (30%), type 3+4 (35%), or shaving (12.5%, P<.01). Incomplete (R1) resection was found in 25/32 (78%) after shaving and 7/74 (9.5%) after resection (P<.001). During mean follow up 59.44±19.9 months, 14/32 (43.8%) shaving and 9/74 (12.1%) resection patients developed locoregional recurrence (P<.001). After resection procedures, 5 and 10 year DSS in patients with DTC, MTC, PDTC/UTC were 92, 74, 7% and 83, 40, 0% (P<.001), respectively. Type of resection had no impact on DSS. Prognostic factors for reduced DSS were tumor invaded resection margin (Odds ratio (OR) 3.1), PDTC/UTC (OR 5.9), and distant metastases at the time of resection (OR 2.6). As prognostic factor for local recurrence, only R1 resection (OR 3.2) was detected.

**Conclusion:** Shaving is associated with low morbidity but high risk for R1 resection and local recurrence. Resection procedures offer good long term prognosis, particularly in DTC and MTC. There is, however, increasing morbidity with increasing extent of surgery. Histological tumor type and required extent of resection mainly predict decision making in surgery of advanced thyroid cancer. In selected cases with PDTC or DTC/MTC with distant metastases but stable disease, limited aerodigestive tract resection in terms of palliation and locoregional tumor control can be considered.

NOTES

Paper 28 (7:45am - 8:00am)

EFFECT OF THE BETHESDA SYSTEM FOR REPORTING THYROID CYTOPATHOLOGY ON THYROIDECTOMY RATES AND MALIGNANCY RISK IN CYTOLOGICALLY INDETERMINATE THYROID NODULES

**Jennifer L. Rabaglia**, Wareef Kabbani, Shelby Holt, Lori Watumull, Jeffrey Pruitt, William H. Snyder, Fiemu E. Nwariaku  
University of Texas Southwestern Medical Center

**Background:** Cytologically indeterminate thyroid nodules are a diagnostic and therapeutic challenge. To improve diagnostic accuracy, the National Cancer Institute recently recommended the Bethesda System for Reporting Thyroid Cytopathology (TBSRTC) for interpretation of fine-needle aspiration (FNA) cytology. Our objective was to determine the effect of TBSRTC on thyroidectomy rates and malignancy risk in cytologically indeterminate lesions.

**Methods:** Thyroid FNA records for patients at a single academic institution between January 2000 and November 2009 were examined. We compared two time periods; one prior to adoption of TBSRTC (pre-TBSRTC, 1/00-9/03) and one post TBSRTC (1/09-11/09). The former group included cytology classified as indeterminate or atypical, whereas cases with atypical cells of undetermined significance (ACUS) were included in the latter data set. We compared thyroidectomy rate (histopathology) and malignancy rate between both groups. Statistical comparisons were performed using the Fisher's exact test and Chi-square analysis (p-value of 0.05 = significant).

**Results:** Demographics were similar in both groups. 938 FNAs were performed in the first period compared to 501 in the second period. We identified 70 (7%) cytologically indeterminate cases (cellular atypia or indeterminate architecture) in the pre-TBSRTC group, of which 17 were clearly classified as cellular atypia. This compares to 69 (13.8%) patients with the finding of ACUS in the post-TBSRTC group. We found no statistically significant difference in thyroidectomy rates between the two groups (31/70, 44% pre vs. 20/69, 29% post;  $p=0.07$ ). However, the rate of malignancy within lesions with clear atypia was significantly higher on final surgical histology in the pre-TBSRTC group (8/17, 47% vs. 6/69, 8.7%;  $p=0.0007$ ).

**Conclusion:** TBSRTC streamlined classification of cytologically indeterminate lesions without changing thyroidectomy rates. However, application of TBSRTC is associated with a lower rate of malignancy in thyroid nodules with ACUS versus the pre-TBSRTC label of "atypical". These findings imply that standardization of cytologic classification can alter diagnostic accuracy. Additional, multi-institutional evaluation and subsequent refinement of this recommendation is warranted in order to increase diagnostic accuracy and avoid either insufficient or excess utilization of surgical management.

NOTES



Paper 29 (8:00am - 8:15am)

SINGLE NUCLEOTIDE POLYMORPHISMS ACT AS MODIFIERS AND STRONGLY CORRELATE WITH DEVELOPMENT OF SIMULTANEOUS MEDULLARY AND PAPILLARY THYROID CARCINOMAS IN TWO LARGE, NON-RELATED FAMILIES WITH RET V804M PROTO-ONCOGENE MUTATION.

**Alexander L. Shifrin**, Jennifer B. Ogilvie, Michael T Stang, Angela Musial Fay, Cristina Xenachis, Yen-Hong Kuo, Jerome J. Vernick  
Jersey Shore University Medical Center

**Background:** Single nucleotide polymorphisms (SNPs) have been reported to function as modifiers of RET proto-oncogene, resulting in the expression of medullary thyroid carcinoma (MTC) and papillary thyroid carcinoma (PTC). The RET V804M mutation is rare and reports showing SNPs associated with it are limited. We recently reported a high rate (40%) of simultaneous MTC and PTC, associated with primary hyperparathyroidism and absence of pheochromocytoma (so called "MEN 2C"), in a large family with the RET V804M mutation. We now present a second, non-related RET V804M family, with simultaneous MTC and PTC. We correlated the presence of specific SNPs to the development of simultaneous MTC and PTC in both families.

**Methods:** Two non-related Italian-American families of 107 (Family 1) and 31 members (Family 2) with RET V804M mutation were evaluated for presence of MTC, C cell hyperplasia (CCH) and PTC. Sequencing was performed on exons 10, 11, 13, 14, 15 and 16 of the RET proto-oncogene through amplification of genomic DNA using polymerase chain reaction (PCR) followed by nucleotide sequence analysis on an automated capillary DNA sequencer. Development of MTC and PTC was correlated to the presence of specific SNPs.

**Results:** In Family 1, 40/107 members were found to carry the RET V804M mutation. Of these 40 members, 15 underwent total thyroidectomy and were found to have MTC (10/15) or CCH (5/15). 6 of 15 (40%) had simultaneous MTC/CCH and PTC. 11 members were tested for SNPs. In Family 2, 3/31 members were RET V804M positive: 1 had MTC and PTC, 1 had micro MTC and PTC, and 1 had CCH. All 3 were tested for SNPs. Three SNPs were detected in both families: Exon 11 (G691S), Exon 13 (769L), and Exon 15 (904S). All three SNPs were present in 100% of patients with overt MTC. SNPs in Exon 13 (769L) were present in all RET positive patients. SNPs in Exon 11 (G691S) and Exon 15 (904S) were present only in patients with overt MTC, and were absent in patients with micro MTC or CCH.

**Conclusions:** We present two non-related families with RET V804M mutation and high incidence of simultaneous MTC and PTC. SNP analysis revealed a similar pattern between the two families that correlated with phenotypic expression. SNPs in Exon 11 (G691S) and Exon 15 (904S) were found in 100% of patients with overt MTC. SNPs in Exon 13 (769L) were present in all RET positive patients, and may serve as modifiers in the development of simultaneous MTC and PTC in patients with RET V804M mutation.

NOTES

Paper 30 (8:15am - 8:30am)

SPRY2 EXPRESSION CORRELATES WITH BRAF MUTATION IN THYROID CANCER

**Lizhong Xu**, Dafna Bar-Sagi, Kopal N. Patel

NYU Langone Medical Center

**Background:** Activating mutations of the MAPK pathway (BRAF, RAS, RET/PTC) are the most common genetic alterations in thyroid cancer (TC). BRAF mutations often confer an aggressive TC phenotype. Sprouty 2 (Spry2) is an inducible inhibitor of MAPK signaling and has been implicated in negative feedback regulation of the MAPK pathway. The aim of this study was to investigate the role of Spry2 in TC.

**Methods:** BRAF (+) TC cell lines were analyzed for Spry2 expression and expression of downstream MAPK proteins, pMEK and pERK. BRAF (+) cells were treated with increasing concentrations (5-20 microM) of MEK inhibitor, U0126, for 24 hours. MTT cell viability assays were performed. TC cell lines were also transfected with Spry2 shRNA and control shRNA. Cells were analyzed for Spry2, pMEK and pERK expression. BRAF (-) TC cell lines were used as control. In addition, 30 human papillary thyroid cancers (PTCs) from our tumor bank were analyzed for BRAF and RAS mutations, RET/PTC rearrangements and Spry2 expression.

**Results:** Increased baseline expression of pMEK and Spry2 was found in BRAF (+) cells. MEK inhibition in BRAF (+) cells resulted in decreased pMEK and Spry2 expression and a significant decrease in cell viability when compared to BRAF (-) cells ( $p < 0.02$ ). BRAF (+) cells treated with Spry2 shRNA showed decreased Spry2 expression and increased pMEK expression. From our tissue samples, 10 PTCs had BRAF mutation, 2 had RET/PTC rearrangement and 2 had RAS mutation. Increased Spry2 expression was seen only in BRAF (+) tumors (8/10).

**Conclusions:** These data confirm that only BRAF (+) TC cells are sensitive to MEK inhibition. Moreover, Spry2 expression correlates with BRAF status, implicating Spry2 as a negative feedback regulator of the MAPK pathway in TC. Increased Spry2 expression serves as a surrogate marker of MAPK pathway activation and may help maintain tumor cell homeostasis and equilibrium. Evasion of MAPK pathway feedback inhibition may be a fundamental requirement for oncogenic transformation and helps explain why MEK inhibition alone has not been sufficient to induce major clinical responses.

# ABSTRACTS CONT.

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Paper 31 (8:30am - 8:45am)

## LAPAROSCOPIC RADIOFREQUENCY THERMAL ABLATION OF NEUROENDOCRINE HEPATIC METASTASES: LONG-TERM FOLLOW UP

**Eren Berber**, Hizir Akyildiz, Jamie Mitchell, Mira Milas, Allan Siperstein  
Cleveland Clinic

**Background:** Since our first report 13 years ago, laparoscopic radiofrequency thermal ablation (RFA) has been incorporated into the treatment algorithm of patients with neuroendocrine liver metastases. The aim of this study is to report long-term oncologic results.

**Methods:** Eighty-nine patients with neuroendocrine hepatic metastases underwent 119 laparoscopic RFA sessions within a 13-year time period. All patients had unresectable disease and indication for RFA was progression of liver involvement and/or hormonal symptoms. Octreotide and chemoembolization were used adjunctive to RFA in follow up in appropriate cases. Chest-Abdomen-Pelvis CT scans were obtained quarterly for the first 2 years and then biannually. Clinical and survival data were obtained from a prospective, IRB-approved database. Univariate Kaplan Meier survival and multivariate Cox Proportional Hazards Model were used for statistical analyses. Data are expressed as mean  $\pm$  standard error of the mean (SEM).

**Results:** There were 35 women and 54 men with a mean age of 56  $\pm$  1.4 years. There were 55 patients with carcinoid tumors, 23 with pancreatic islet cell tumors, and 11 with medullary thyroid cancer. Mean tumor size was 3.6  $\pm$  0.2 (range 1-10 cm) and number of lesions 6  $\pm$  1 (range 1 to 16). Peri-operative morbidity was 6%, with 0.1% 30-day mortality. Hormonal symptoms were present in 33% of patients preoperatively and symptom relief was achieved in 97% of these patients after RFA. The median follow-up was 30  $\pm$  3 months. Twenty-two percent of patients developed local liver recurrence, 63% new liver lesions, and 59% extrahepatic disease in follow up. Repeat RFA (28% of patients), and chemoembolization (13%) were used to achieve further local hepatic tumor control in these patients. The Kaplan-Meier median disease-free survival was 1.3 years and overall survival 6 years after the first RFA procedure. On univariate analysis, gender, liver tumor volume, symptomatology, and presence of extrahepatic disease effected survival. On multivariate analysis, liver tumor volume, symptomatology and extrahepatic disease were independent predictors of survival.

**Conclusions:** To our knowledge, this is the largest prospective experience with RFA of neuroendocrine liver metastases. Effective symptom palliation and long-term local tumor control are possible in these patients, who are not surgical candidates due to aggressive liver involvement, with minimal morbidity and mortality.

NOTES

Paper 32 (8:45am - 9:00am)

## SECOND OPINION CYTOPATHOLOGY REVIEW OF THYROID FINE NEEDLE ASPIRATION BIOPSIES REDUCES THE NEED FOR DIAGNOSTIC THYROIDECTOMY

**Tomer Davidov**, Stanley Z. Trooskin, Beth-Ann Shanker, Dana Yip, Oliver Eng, , Jessica Crystal, , Malik F. Deen, Michael May, Renee L. Artymyshyn

University of Medicine & Dentistry of New Jersey - Robert Wood Johnson Medical School

**Background:** Follicular thyroid carcinoma (FTC) cannot be distinguished reliably from benign follicular neoplasia by fine needle aspiration (FNA) biopsy. Given an estimated 20% risk of malignancy, many patients with suspicious FNAs require thyroid surgery for diagnosis. Some centers have shown significant discordance when a second pathologists evaluates the same FNA. We sought to determine whether routine cytopathology second opinion reduces the need for diagnostic thyroidectomy, especially in patients with suspicious FNAs.

**Methods:** 331 thyroid FNA specimens obtained from outside centers from 2004 to 2009 were reviewed at our institution. FNA results were categorized into benign (nodular goiter, thyroiditis, colloid nodule, hyperplastic focus), suspicious (follicular or hurthle cell neoplasm, follicular or hurthle cell lesion, "malignancy cannot be excluded"), malignant (papillary, medullary, and anaplastic thyroid carcinoma), and nondiagnostic (inadequate cellularity or preservation artifact). Final pathology of 250 patients who underwent thyroidectomy was compared to FNA results.

**Results:** Average patient age was 51 with a female predominance (79%). The overall pathology concordance for all 331 FNAs was 66% (218/331). Concordance was highest at 86% (74/86) with malignant FNAs. Concordance in the 129 patients with FNAs deemed suspicious by initial pathology review was only 37% (48/129) on second opinion. Suspicious FNAs were thought to be nondiagnostic in 21% (27/129) and benign in 42% (54/129) of patients. Suspicious FNAs on second opinion were found to be malignant in 23% (11/48) on final pathology compared to 13% (17/129) of the suspicious FNAs from initial pathology opinion. Benign FNAs on second opinion were found to be benign in 95% (21/22) on final pathology. Twelve patients with nondiagnostic FNAs underwent repeat FNAs. Of these, 67% (8/12) were interpreted as benign and 33% (4/12) as suspicious or frankly malignant. Of the 4 who underwent surgery, 2 were found to have malignancy, 1 papillary microcarcinoma, and 1 was benign. Overall, routine cytopathology second opinion of suspicious thyroid FNAs avoided surgery in 35% and potentially obviated the need for diagnostic thyroidectomy in as many as 56% (72/129) of patients.

**Conclusions:** Routine second opinion review of suspicious thyroid FNA biopsies reduces the need for unnecessary diagnostic thyroidectomy by as much as 56%.

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Paper 33 (9:00am - 9:15am)

DO THE RECENT AMERICAN THYROID ASSOCIATION (ATA) GUIDELINES ACCURATELY GUIDE THE TIMING OF PROPHYLACTIC THYROIDECTOMY?

**Elizabeth G. Grubbs**, Thereasa A. Rich, Yan Xing, Stephen G. Waguespack, Anita K. Ying, Douglas B. Evans, Jeff E. Lee, Nancy D. Perrier  
MD Anderson Cancer Center

**Introduction:** In 2009, the ATA published consensus guidelines directing the timing of surgical intervention for the treatment of hereditary medullary thyroid cancer (MTC). The recommendations for prophylactic thyroidectomy (PThy) were based on a combination of new RET mutation-based risk levels and clinical criteria including patient age, family history (FH), calcitonin (Ct) level and ultrasonographic (US) findings. The aim of this study was to assess whether the clinical criteria outlined in the ATA guidelines could accurately predict the presence of MTC on final pathology.

**Methods:** A retrospective study of an endocrine surgery database at a tertiary care center was performed. Patients undergoing PThy were included. We evaluated mutation-based risk levels in combination with ATA criteria for resection: aggressive FH, elevated Ct and abnormal US at the time of PThy for "lower risk" (level A & B) mutations and age <5 years (y) for "high risk" (level C) mutations. Logistic regression analysis was performed to identify predictive factors of MTC on final pathology.

**Results:** 55 pts underwent PThy between 1972 and 2009. 20 (36%) patients had a level A or B mutation and 35 (64%) had a level C mutation. The median age at PThy was 11.5 y (range 2-68). Only 4 patients (8%) underwent PThy prior to age 5. On final pathology, 44% (24/55) of patients had MTC; median size of tumor was 3mm (range 1-12) and no patient had nodal metastasis. The majority of patients with MTC (16/24, 67%) had a level C mutation and the youngest age of MTC in a level C mutation carrier was 5y. The youngest age of MTC in level A or B carriers was 15y. The single factor that predicted an overall increased risk of MTC at time of PThy was meeting at least one criteria in the ATA mutation-based guidelines for surgical intervention ( $p=0.02$ ). Meeting individual clinical criteria (FH, Ct, US, age <5) was not predictive of MTC nor was risk level of mutation alone. In a subset analysis of level C patients, age was the only significant predictor of MTC ( $p=0.04$ ). Utilization of ATA criteria had a negative predictive value (NPV) of MTC at the time of PThy of 92%.

**Conclusion:** ATA criteria that includes risk assessment of RET mutation are important in predicting the presence of MTC in patients who are candidates for PThy. A NPV of 92% makes delay of PThy reasonable if all criteria are met. In the context of an experienced surgeon, the recent guideline suggestions are useful in determining the appropriate timing of PThy.

# ABSTRACTS CONT.

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Paper 34 (9:15am - 9:30am)

TRANSORAL THYROID AND PARATHYROID SURGERY

**E. Karakas**, T. Steinfeldt, T. Schlosshauer, A. Gockel, J. Jäger, R. Westermann, D.K. Bartsch  
University Hospital Marburg

**Background:** Transluminal endoscopic interventions via so-called natural orifices are gaining increasing interest as they allow surgical treatment without any incision of the skin. Moreover minimally invasive procedures have found their way into thyroid and parathyroid surgery. After development of an entirely transoral access for thyroid and parathyroid resection our aim was to evaluate the safety of the new technique, especially potential and clinically relevant contamination of the access route.

**Method:** We performed thyroid resections in 10 orally intubated pigs via an entirely transoral access to the thyroid region. Preparation and resection was done using a modified rigid rectoscope and conventional laparoscopic instruments. Prior to and after thyroid resection recurrent laryngeal nerve function was documented by intraoperative neuromonitoring (IONM). The mucosa of the bottom of the mouth was sealed with a continuous absorbable suture. After a 14 days observation period an autopsy, including macorscopol evaluation of the bottom of the mouth, the access route and the thyroid region as well as laboratory and microbiological investigations were performed. Additionally we performed the new transoral technique in 10 human corpses.

**Results:** In all animals the transoral hemithyroidectomy was done without complications. IONM showed a regular signal every time. Vital signs, laboratory values, behavior, body temperature as well as nutrition and increase in weight (Mean 5,1kg) were normal. The access route and the operating field showed no signs of inflammation or infection. Further investigations showed, that in contrast to pigs, an access way behind the hyoid bone was not feasible in human corpses and led to a modification of the access way mentioned before. However, 9 out of ten normal sized human parathyroid glands could be detected and resected via the modified transoral way.

**Conclusion:** Entirely transoral thyroid and parathyroid surgery via a sublingual access is feasible and safe. Firstly focussing on parathyroid surgery the first transoral parathyroid resection in a patient suffering from primary hyperparathyroidism is forthcoming.

# ABSTRACTS CONT.

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# POSTER COMPETITION

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Tuesday, April 20  
9:30am – 10:30am

35. ELECTRONIC SYNOPTIC OPERATIVE REPORTING FOR THYROID SURGERY USING AN ELECTRONIC DATA MANAGEMENT SYSTEM: POTENTIAL FOR PROSPECTIVE MULTI-CENTER DATA COLLECTION

**N. Gopalakrishna Iyer**, Iain Nixon, Frank Palmer, Ian Ganly, Snehal G. Patel, Ashok R. Shaha

Memorial Sloan-Kettering Cancer Center

36. DO PATIENTS WITH INCIDENTALLY DISCOVERED ADRENAL MASSES OBTAIN THE RECOMMENDED BIOCHEMICAL TESTING AND FOLLOW-UP?

**Roy Phitayakorn**, Richard A. Hodin, Sareh Parangi, Antonia Stephen

The Massachusetts General Hospital

37. DETECTION AND MANAGEMENT OF HYPOTHYROIDISM FOLLOWING TOTAL OR NEAR TOTAL THYROID LOBECTOMY: EVALUATION OF A CLINICAL ALGORITHM

**Amanda Johner**, Obi L. Griffith, Leanne Wood, Hannah Piper, Graeme Wilkins, Blair Walker, Christopher Baliski, Samuel Bugis, Steven J.M. Jones, Sam M. Wiseman

St. Paul's Hospital/University of British Columbia & Kelowna General Hospital

38. 4D-PARATHYROID CT SCAN AS THE INITIAL LOCALIZATION STUDY IN DE NOVO PRIMARY HYPERPARATHYROIDISM

**Lee F. Starker**, Amit Mahajan, Gordon Sze, Robert Udelsman, Tobias Carling

Yale New Haven Hospital

39. SAME DAY THYROIDECTOMY: A REVIEW OF PRACTICE PATTERNS AND OUTCOMES FOR 1,168 PROCEDURES IN NEW YORK STATE

**Charles T. Tuggle**, Sanziana Roman, Robert Udelsman, Julie Ann Sosa

Yale University School of Medicine

40. DEFINING THE LEARNING CURVE FOR ROBOTIC THYROIDECTOMY

**Jandee Lee**, Woong Youn Chung, Kee Hyun Nam Nam, Jong Ho Yun

Department of Surgery, Ajou University School of Medicine

41. TRAINING SURGICAL RESIDENTS INCREASES MENTAL STRAIN: A PROSPECTIVE STUDY OF HEART RATE VARIABILITY IN ENDOCRINE SURGERY

**Ruth S Prichard**, Jennifer Oucharek, Leigh W Delbridge

University of Sydney Endocrine Surgical Unit

42. STRATEGIC IMPACT OF A NEW ACADEMIC ENDOCRINE SURGERY PROGRAM

**James E. Wiseman**, Philip H.G. Ituarte

David Geffen School of Medicine at UCLA

# POSTER COMPETITION CONT.

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43. DOES THE MEDIASTINAL EXTENSION OF THE GOITRE INCREASE MORBIDITY OF TOTAL THYROIDECTOMY? A MULTICENTRIC STUDY ON 19,662 TOTAL THYROIDECTOMY.

**Mario Testini**, Giuseppe Piccinni (1), Angela Gurrado (1), Germana Lissidini (1), Elisabetta Poli (1), Nicola Avenia (2), Rocco Bellantone (3), Antonio Biondi (4), Paolo Brazzarola (5), Giorgio De Toma (6), Celestino P. Lombardi (3), Lodovico Rosato (7), Francesco Basile (4)

(1) University Medical School of Bari, (2) University Medical School of Perugia, (3) University Medical School "Cattolica del Sacro Cuore", of Rome

44. DACARBAZINE INHIBITS CELL CYCLE PROGRESSION AND REDUCES TUMOR GROWTH IN AN ORTHOTOPIC MODEL OF ANAPLASTIC THYROID CANCER

**Matthew A. Nehs**, Carmelo Nucera, Sushruta Nagarkatti, Richard A. Hodin, and Sareh Parangi

Massachusetts General Hospital

45. ADRENAL VENOUS SAMPLING IN PRIMARY HYPERALDOSTERONISM: STANDARDIZING A GOLD STANDARD

**Aarti Mathur**, Clinton D. Kemp, Utpal Dutta, Smita Baid, Alejandro Ayala, Richard E Chang, Seth Steinberg, Eileen Lange RN, James F. Pingpank, H. Richard Alexander, W. Marston Linehan, Peter A. Pinto, Giao Phan, Marybeth Hughes, Steven K. Libutti, Constantine Stratakis, Electron Kebebew

National Cancer Institute

46. PATTERNS OF PRESENTATION AND TREATMENT FOR PERSISTENT AND RECURRENT HYPERPARATHYROIDISM DURING A TEN YEAR PERIOD AT A HIGH VOLUME TERTIARY REFERRAL CENTER

**Barbra S. Miller**, David T. Hughes, Paul G. Gauger, Norman W. Thompson, Gerard M. Doherty

University of Michigan

47. IMPACT OF HASHIMOTO'S THYROIDITIS ON THE ACCURACY OF FINE NEEDLE ASPIRATION BIOPSY

**Anthony Okobi**, Jovian Yu, John M. Monchik, Peter J Mazzaglia

Warren Alpert School of Medicine at Brown University

48. SURGEONS AND PATIENTS DISAGREE ON THE POTENTIAL CONSEQUENCES FROM HYPOPARATHYROIDISM

**Matthew D. LeClair**, Nathaneal Hevelone, Atul A. Gawande, Michelle M. Mello, Jacob Moalem, Edward E. Whang, Lily Chen, , Nancy L. Cho, Elliot Mitmaker, Francis D. Moore, Jr., Daniel T Ruan

Brigham and Women's Hospital

# POSTER COMPETITION CONT.

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49. ARE THERE PREDICTABLE CRITERIA FOR SELECTIVE, RATHER THAN ROUTINE, CALCIUM SUPPLEMENTATION FOLLOWING THYROIDECTOMY?

**Christine S. Landry**, Elizabeth G. Grub, Mike Hernandez, Mimi I. Hu, Mandy K. Ormond, Jeffrey E. Lee, Nancy D. Perrier

The University of Texas M. D. Anderson Cancer Center

# POSTERS

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50. LITHIUM INHIBITS CARCINOID CELL GROWTH IN VITRO AND IN VIVO

**David Y Greenblatt**, Li Ning, Mary Ndiaye, , Herbert Chen, and Muthusamy Kunnimalaiyaan  
University of Wisconsin

51. SYSTEMIC HYPOCALCEMIC CHALLENGE ENABLES SUCCESSFUL SEMI-SELECTIVE VENOUS SAMPLING FOR PERSISTENT HYPERPARATHYROIDISM

**Lilah F. Morris**, Christopher T. Loh, , Amy S. Asandra, James E Wiseman, Antoinette S. Gomes , Samuel Wairiri, Michael W Yeh  
David Geffen School of Medicine at UCLA

52. PREOPERATIVE 99MTC-SESTAMIBI LOCALIZATION PREDICTS INTRAOPERATIVE PARATHYROID HORMONE DYNAMICS IN PRIMARY HYPERPARATHYROIDISM: AN ANALYSIS OF 855 CASES

**Susan C. Pitt**, Rajarajan Panneerselvan, Rebecca S. Sippel, Herbert Chen  
University of Wisconsin

53. DURABILITY OF MINIMALLY INVASIVE PARATHYROIDECTOMY IN YOUNG PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

**Jennifer J. Oucharek**, Christine J. O'Neill, James W. Suliburk, Mark S. Sywak, Leigh W. Delbridge, Stan B. Sidhu  
University of Sydney Endocrine Surgical Unit

54. RADIO-GUIDED EXPLORATION FACILITATES SURGICAL CYTOREDUCTION OF NEUROENDOCRINE TUMORS.

**Yi-Zarn Wang**, Abby E Gandolfi Lowell B. Anthony, Richard Campeau, Eugene Woltering, J. Philip Boudreaux  
Louisiana State University Health Sciences Center

55. DOES THE INITIAL TREATMENT OF PARATHYROID CARCINOMA AT A HIGH-VOLUME CENTER CONFER A SURVIVAL ADVANTAGE?

**Insoo Suh**, Avital Harari, Elliot Mitmaker, Raymon H. Grogan, Ann Griffin, Jessica E. Gosnell, Quan-Yang Duh, Orlo H. Clark, Wen T. Shen  
University of California, San Francisco

56. PERSPECTIVES OF ROBOT ASSISTED THYROIDECTOMY IN THE MANAGEMENT OF THYROID CARCINOMA FROM THE YUMC EXPERIENCE OF CONSECUTIVE 1000 CASES

**Sang-Wook Kang** , So Hee Lee , Haeng Rang Ryu , Kang Young Rhee , Jong Ju Jeong , Kee-Hyun Nam and Woong Youn Chung  
Department of Surgery, Yonsei University College of Medicine



57. LEARNING CURVE OF ROBOT-ASSISTED THYROIDECTOMY FOR THYROID CANCER

**Sang-Wook Kang**, Jandee Lee, So Hee Lee, Haeng Rang Ryu, Kang Young Rhee, Jong Ju Jeong, Kee-Hyun Nam and Woong Youn Chung  
Department of Surgery, Yonsei University College of Medicine

58. SURVEILLANCE AND INTERVENTION FOLLOWING THYROID LOBECTOMY

**Philip M. Spanheimer**, Kristopher M. Day, Sonia L. Sugg, Geeta Lal, James R. Howe, Ronald J. Weigel  
University of Iowa, Department of Surgery

59. MORE STRINGENT CRITERIA ARE REQUIRED FOR IOPTH MONITORING IN MULTIGLANDULAR PARATHYROID DISEASE

**David T. Hughes**, Barbra S. Miller, Gerard M. Doherty  
University of Michigan

60. SINCE THE INTRODUCTION OF MINIMALLY INVASIVE PARATHYROIDECTOMY FOR PRIMARY HYPERPARATHYROIDISM THE INCIDENCE OF MULTI-GLAND DISEASE HAS DECLINED; HYPERPLASIA SEEMS TO BE RARER THAN GENERALLY PRESUMED.

**Bas A. Twigt**, Anne M. Vollebregt, Menno R. Vriens, Inne H.M. Borel Rinkes, Thijs v. Dalen  
University Medical Center Utrecht

62. DNA BASE EXCISION REPAIR GENE XRCC1 SINGLE NUCLEOTIDE POLYMORPHISM VARIANT IS ASSOCIATED WITH AN INCREASED RISK OF LYMPH NODE METASTASES IN PATIENTS WITH PAPILLARY THYROID CANCER

**Guennadi Kouniavsky**, Yongchun Wang, Alan P. B. Dackiw, Christopher B. Umbricht, and, Martha A. Zeiger  
Johns Hopkins University School of Medicine

63. PRIMARY HYPERPARATHYROIDISM IN THE UNINSURED: A STUDY OF 527 PATIENTS

**Azad A. Jabiev**, John I. Lew, Jane L. Garb, , Carmen C. Solorzano  
Baystate Medical Center, Tufts University School of Medicine; University of Miami Miller School of Medicine

64. REAL-TIME IMAGING OF TUMOR PROGRESSION IN AN ORTHOTOPIC MOUSE MODEL OF RED FLUORESCENT PROTEIN-EXPRESSING THYROID CANCER

**Hop S. Tran Cao**, Sharmeela Kaushal, Cynthia S. Snyder, Weg M. Ongkeko, Robert M. Hoffman, Michael Bouvet  
University of California, San Diego

65. FAMILY HISTORY OF THYROID CANCER IS THE STRONGEST PREDICTOR OF POSITIVE CERVICAL LYMPHADENOPATHY FOUND ON PRE-OPERATIVE ULTRASOUND IN PATIENTS WITH PAPILLARY THYROID CANCER

**Nephtali R. Gomez**, Guennadi Kuoniavsky, Hua-Ling Tsai, ScM, Zita Shiue, Helina Somervell, NP, Anthony P. Tufaro, Sara I. Pai, Ralph P. Tufano, Christopher Umbricht, Jeanne Kowalski, Alan P.B. Dackiw, Martha A. Zeiger  
Johns Hopkins University School of Medicine

66. THE ROLE OF CONTRAST ENHANCED COMPUTED TOMOGRAPHY IS COMPLEMENTARY TO ULTRASOUND IN THE PREOPERATIVE DIAGNOSIS OF CERVICAL METASTATIC ADENOPATHY IN PAPILLARY THYROID CARCINOMA

**Robert Tasevski**, David P. Goldstein, Dale H. Brown, Eric S. Bartlett, Eugene Yu, Sylvia L. Asa, Lorne E. Rotstein  
University of Toronto

67. PATIENTS WITH PRIMARY HYPERPARATHYROIDISM PRESENT WITH SIGNIFICANTLY LOWER VITAMIN D LEVELS THAN PATIENTS WITH BENIGN THYROID DISEASE

**Catherine E. Pesce**, Guennadi Kouniavsky, Hua-Ling Tsai, Zita Shiue, Jeanne Kowalski, Martha A. Zeiger  
Johns Hopkins Hospital

68. A NOVEL SCORING SYSTEM FOR SESTAMIBI AND SURGEON-PERFORMED ULTRASOUND FOR PRE-OPERATIVE LOCALIZATION IN PARATHYROID SURGERY

**Katy H. Carpizo**, Mira M. Milas, Jamie Mitchell, Allan E. Siperstein, and Eren Berber  
Cleveland Clinic Foundation

69. PRIMARY HYPERPARATHYROIDISM PATIENTS WITH POSITIVE PRE-OPERATIVE SESTAMIBI SCAN AND NEGATIVE ULTRASOUND ARE MORE LIKELY TO HAVE POSTERIORLY LOCATED UPPER GLAND ADENOMAS

**Avital Harari, MD**; Elliot Mitmaker, MD; Raymon H. Grogan, MD; James Lee, MD; Wen Shen, MD; Jessica Gosnell, MD; Orlo Clark, MD\*; Quan-Yang Duh, MD\*  
University of California, San Francisco

70. EXPERIENCE IN PARATHYROID LOCALIZATION USING 4D-COMPUTED TOMOGRAPHY

**Philip W. Smith**, Virginia B. Simpson, Scott R. Geraghty, John R. Gaughen, John B. Hanks  
University of Virginia

71. GLOBAL TYROSINE KINOME PROFILING OF HUMAN THYROID TUMORS IDENTIFIES SRC AS A PROMISING TARGET FOR INVASIVE CANCERS.

**Nancy L. Cho**, Chi-iou Lin, Jinyan Du, Edward E. Whang, Hiromichi Ito, Elliot J. Mitmaker, Wen T. Shen, Francis D. Moore, Jr., Daniel T. Ruan  
Brigham & Women's Hospital

72. CHANGING INTRAOPERATIVE PARATHYROID HORMONE COLLECTION SITES FROM PERIPHERAL TO CENTRAL DOES NOT AFFECT PREDICTIVE ACCURACY DURING PARATHYROIDECTOMY

**Sherif R.Z. Abdel-Misih**, James Broome, Xiaobai Li, Eugene P. Chambers, J. Kenneth Jaco, John E. Phay

The Ohio State University Medical Center/James Cancer Hospital

73. PRIMARY HYPERPARATHYROIDISM IN PATIENTS UNDER 40: PREOPERATIVE AND INTRA-OPERATIVE FINDINGS

**Adam D. Laytin**, Robert T. Lewis, Douglas L. Fraker

University of Pennsylvania

74. PSEUDO-PHEOCHROMOCYTOMAS: ADRENO-CORTICAL LESIONS MIMICKING PHEOCHROMOCYTOMAS

**Jonathan G. Sham**, Robert T. Lewis, Kenechi Ebede, Kathleen T. Montone, Virginia A. LiVolsi, Douglas L. Fraker

University of Pennsylvania

75. GALECTIN-3 IS A NOVEL THERAPEUTIC TARGET TO REDUCE CORTISOL SECRETION AND IMPROVE CHEMOSENSITIVITY IN ADRENOCORTICAL CANCER

**Chi-lou Lin**, Edward E. Whang, Wan-Hui Liao, Ulf J. Nilsson, Jinyan Du, Nancy L. Cho, Hiromichi Ito, Francis D. Moore, Jr, Daniel T Ruan

Brigham and Women's Hospital

76. A PREDICTIVE MODEL FOR MULTIGLAND DISEASE IN PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

**David F. Schneider**, Peter H. Anastopoulos, Daniel J. Weber, and Steven A. De Jong

Loyola University Medical Center

77. OCCURRENCE AND PREDICTION OF PATHOLOGICAL OUTCOMES IN PATIENTS WITH COEXISTENT FOLLICULAR ADENOMA AND PAPILLARY THYROID CARCINOMA

**Tricia A. Moo-Young**, Dawn P. Bradly, Subhash Patel, Richard A. Prinz, Paul Gattuso

Rush University Medical Center

# BYLAWS

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## I. CORPORATION

- 1.1 NAME.** The name of the corporation is The American Association of Endocrine Surgeons.
- 1.2 PURPOSES.** The purposes for which the corporation is organized are as follows: The corporation is organized exclusively for the purposes set forth in Sections 501(c)(3) of the Internal Revenue Code of 1986 (or the corresponding provision of any future United States Internal Revenue law) (the “Code”), including, for such purposes, making of distributions to organizations that qualify as exempt organizations under Section 501(c)(3) of the Code. The objects of the corporation shall include: (1) advancement of the science and art of endocrine surgery and (2) maintenance of high standards in the practice and art of endocrine surgery; and doing anything reasonably in furtherance of, or incidental to, the foregoing purposes as the Council may determine to be appropriate and as are not forbidden by Section 501(c)(3) of the Code, with all the power conferred on nonprofit corporations under the laws of the State of Illinois.
- 1.3 NONPROFIT OPERATION.** The corporation shall be operated exclusively for scientific, literary and educational purposes within the meaning of Section 501(c)(3) of the Code as a nonprofit corporation. No Councilor or member of the corporation shall have any title to or interest in the corporate property or earnings in his or her individual or private capacity and no part of the net earnings of the corporation shall inure to the benefit of any Councilor, member, officer or any individual. No substantial part of the activities of the corporation shall consist of carrying on propaganda or otherwise attempting to influence legislation, nor shall the corporation participate in or intervene in any political campaign on behalf of (or in opposition to) any candidate for public office.

## II. MEMBERSHIP

### 2.1 MEMBERSHIP.

A. Membership in this Association shall be limited to surgeons of good professional standing, who have a major interest and devote significant portions of their practice or research to endocrine surgery, and who are certified by the American Board of Surgery or its equivalent in Canada, Central America, Mexico, and South America. In addition, membership shall be limited to fellows of the American College of Surgeons or its international equivalent.

B. **Types of Members.** There shall be seven types of members: Active, Senior, Allied Specialist, Honorary, Corresponding, Candidate, and Resident/Fellow.

1. **Active members** shall consist of original charter members and all members subsequently elected until they become eligible for senior membership. The number of active members shall not be limited.

1a. The candidates for Active membership would have attended at least one annual meeting (hereinafter “assembly”) of the American Association of Endocrine Surgeons prior to their application;

1b. The candidates for Active membership should be able to provide evidence of special interest in endocrine surgery;

1c. The candidates who are applying for Active membership, who have completed their Endocrine Surgical Fellowship, should be in practice at least for one year with special emphasis in endocrine operative surgery.

2. **Senior members** shall consist of Active members who have reached the age of 65 years or who have retired from active practice. Senior members shall have all the responsibilities and privileges of active members, excepting those regarding attendance at assemblies. Senior members are not required to pay dues.

3. **Honorary members** shall consist of individuals who have made outstanding contributions to the discipline of endocrine surgery. They shall have no voting privileges, are not eligible for election as officers, and are not subject to assessment for dues.

4. **Corresponding members** shall consist of individuals who meet all the same qualifications in their respective countries as active members. They shall have no voting privileges, are not eligible for election as officers, shall not have attendance requirements, but may be subject to dues at a reduced amount.

5. **Allied Specialist members** shall consist of specialists with American Board certification in their respective field or its equivalent in Canada, Central America, Mexico and South America. In addition, Allied Specialist membership shall be limited to Fellows of the American College of Surgeons or its international equivalent. Allied Specialist members shall have demonstrated a significant commitment to and documented excellence in clinical practice, education, and/or research in their area(s) of practice within endocrine surgery. Allied Specialist members shall have been in practice within their specialty for a minimum of five years beyond training. Non-physician scientists (PhD) with a demonstrated interest in, and who have made significant contributions to, the field of endocrine surgery, are also eligible for membership under the

Allied Specialist category. Allied Specialist members shall pay dues as levied by the Council and approved by the membership, shall have voting privileges, are subject to attendance requirements, shall have the right to attend the annual business meeting, can serve on committees, and are not eligible for election to office or Council.

**6. Candidate members** shall consist of individuals who have completed their surgical training and who are awaiting qualification as Active members. Candidate members are required to pay dues at a reduced rate, do not have voting rights, and may register for the annual meeting at a reduced rate. Candidate membership will be limited to a period of time no more than three years following completion of all continuous training to include residency and fellowship(s). A letter of sponsorship from an Active or Senior AAES member will be sufficient to be considered as a Candidate member. Candidate members are strongly urged to attend the annual meeting but need not have attended a prior meeting.

**7. Resident/Fellow members** shall consist of individuals who are currently training, either as surgical residents or fellows. Resident/Fellow members are required to pay dues at a reduced rate, do not have voting rights, and may register for the annual meeting at a reduced rate. Resident/Fellow membership is limited to the time that an individual is in a residency, research, or clinical fellowship training program. A letter of sponsorship from an Active or Senior AAES member will be sufficient to be considered as a Resident/Fellow member. Attendance at a prior meeting of the AAES is not required. Resident/Fellow members will become Candidate members upon completion of their training and upon request.

### **C. Election of New Members**

1. Physicians fulfilling the requirements for Active membership stated in paragraphs 2.1A and 2.1B of these Bylaws who reside in the United States, Canada, Central America, Mexico or South America may be eligible for Active membership.

2. Application forms for Active or Corresponding membership shall be provided by the Secretary-Treasurer. Completed application forms signed by the proposed member, one sponsor, and two endorsees shall be delivered to the Secretary-Treasurer at least four months before the annual assembly. Completed applications shall be reviewed by Council, which has

the right to accept or reject any application for membership in the Association. Names of prospective members recommended for election by the Council shall be submitted to the membership at the annual assembly. Election shall be made by secret ballot, by a three-fourths affirmative vote of the members present. A prospective member who fails to be elected at one assembly may be considered at the next two annual assemblies of the Association. If election fails a third time, the prospective member's application may be resubmitted after a two year interval.

3. Prospective members for Honorary membership shall be proposed in writing to the Council through the Secretary-Treasurer. Prospective members approved by the Council will be elected by three-fourths affirmative vote of the Council and officers present.

4. Active members in good standing who subsequently take up practice in geographic areas outside of the United States, Canada, Central America, Mexico, or South America shall be changed to corresponding members of the Association.

**D. Dues**

Dues and assessments shall be levied by the Council and approved by the membership at the annual assembly.

**E. Resignations / Expulsions**

1. Resignations of members otherwise in good standing shall be accepted by majority vote of the Council.

2. Charges of unprofessional or unethical conduct against any member of the Association must be submitted in writing to Council. The Council's concurrence or disallowance of the charges shall be presented to the membership at the annual assembly executive session. A three-fourths affirmative vote of the members present shall be required for expulsion.

3. Any Active member who is absent from three consecutive annual assemblies without adequate explanation of this absence made in writing to the Secretary-Treasurer shall be dropped from membership in the Association by vote of the Council. Membership may be reinstated by vote of the Council.

4. Any member whose dues remain unpaid for a period of one (1) year shall be dropped from membership, provided that notification of such a lapse beginning at least three (3) months

prior to its effective date. The member may be reinstated following payment of the dues in arrears on approval of the Council.

**2.2 PLACE OF ASSEMBLIES.** Annual and special assemblies of the members shall be held at such time and place as shall be determined by the Council.

**2.3 ANNUAL ASSEMBLY.** The annual assembly of the members of the corporation for election of Officers and Councilors and for such other business as may come before the assembly shall be held on such date and hour as shall have been determined by the members (or if the members have not acted, by the Council or the Chairperson), and stated in the notice of the assembly. If for any reason the annual assembly is not held on the determined date of any year, any business which could have been conducted at an annual assembly may be conducted at any subsequent special or annual assembly or by consent resolution.

A. During the annual assembly, there shall be an AAES Business Meeting of the membership. The business of the association shall be conducted at this time. The report of the nominating committee shall be presented to the membership during the AAES Business Meeting. Nominations may be made from the floor. Officers of the Association and Council members shall be elected by majority vote of the active and senior members during the AAES Business Meeting.

B. Any member of the Association may invite one or more guests to attend the annual assembly.

C. Abstracts for consideration for presentation must be authored or sponsored by a member of the following categories: Active, Corresponding, Senior, Honorary, or Allied Specialist.

**2.4 SPECIAL ASSEMBLIES.** Special assemblies of the members of the corporation may be called by the Council or the President and shall be called by the President or the Secretary-Treasurer at the written request of any 30 members of the corporation. No business may be transacted at a special assembly except the business specified in the notice of the assembly.

**2.5 NOTICE OF ASSEMBLIES OF MEMBERS.** Except as otherwise provided by statute, written notice of the place, day, and hour of the assembly and in the case of a special assembly, the purpose or purposes for which the assembly of the members of the corporation is called, shall be given not less than five (5) nor more than sixty (60) days before the date of the assembly to each member, either personally or by mailing such notice to each member at the address designated by the member for such purpose or, if none is designated, at the member's last known address.



- 2.6 WAIVER OF NOTICE.** Whenever any notice whatever is required to be given under the provisions of the Illinois Not for Profit Corporation Act of 1986 (“the Act”) or under the provisions of the articles of incorporation or bylaws of this corporation, a waiver thereof in writing signed by the person or persons entitled to such notice, whether before or after the time stated therein, shall be deemed equivalent to the giving of such notice. Attendance at any meeting shall constitute waiver of notice thereof unless the person at the meeting objects to the holding of the meeting because proper notice was not given.
- 2.7 QUORUM OF MEMBERS ENTITLED TO VOTE.** A minimum of thirty (30) members eligible to vote shall constitute a quorum at the annual assembly to effect changes in the bylaws of the Association, to make assessments, to authorize appropriations or expenditures of money other than those required in the routine business of the Association, to elect officers, Council members and members, and to expel members. For the transaction of other business, the members entitled to vote present at any annual assembly shall constitute a quorum.

## III. COUNCIL

- 3.1 COUNCIL.** The business and affairs of the corporation shall be managed by or under the direction of a Council which is the governing body of the corporation. The Council shall meet as often as necessary to conduct the business of the corporation.
- 3.2 NUMBER AND SELECTION OF COUNCIL.** The Council shall consist of the officers of the Association, the three immediate past Presidents, and six other Council members, as the membership shall from time to time determine. The Council shall be elected by majority vote of the Active and Senior membership during the AAES Business Meeting at its annual assembly and vacancies shall be filled in the manner specified in Section 3.4 below. Councilors (other than those elected to fill vacancies) shall serve for three (3) year terms, with two (2) Councilors being elected annually so as to provide overlapping terms.
- 3.3 REMOVAL.** Any Councilor may be removed from office with cause at any annual or special assembly of the members. No Councilor may be removed except as follows: (1) A Councilor may be removed by the affirmative vote of two-thirds of the votes present and voted, either in person or by proxy (2) No Councilor shall be removed at a meeting of members entitled to vote unless the written notice of such meeting is delivered to all members entitled to vote on removal of Councilors. Such notice shall state that a purpose or the meeting is to vote upon the removal of one or more Councilors named in the notice. Only the named Councilor or Councilors may be removed at such meeting. If the vote of Councilors is to take place at a special assembly

of Councilors, written notice of the proposed removal shall be delivered to all Councilors no less than twenty (20) days prior to such assembly. Written notice for removal must include the purpose of the assembly (i.e., removal) and the particular Councilor to be removed.

- 3.4 VACANCIES.** Vacancies occurring in the Council by reason of death, resignation, removal or other inability to serve shall be filled by the affirmative vote of a majority of the remaining Councilors although less than a quorum of the Council. A Councilor elected by the Council to fill a vacancy shall serve until the next annual assembly of the membership. At such annual assembly, the members shall elect a person to the Council who shall serve for the remaining portion of the term.
- 3.5 ANNUAL ASSEMBLY.** The annual assembly of the Council shall be held at such place, date and hour as the Council may determine from time to time. At the annual assembly, the Council shall consider such business as may properly be brought before the assembly. If less than a quorum of the Councilors appear for such an annual assembly of the Council, the holding of such annual assembly shall not be required and matters which might have been taken up at the annual assembly may be taken up at any later regular, special or annual assembly or by consent resolution.
- 3.6 REGULAR AND SPECIAL ASSEMBLIES.** Regular assemblies of the Council may be held at such times and places as the Councilors may from time to time determine at a prior assembly or as shall be directed or approved by the vote or written consent of all the Councilors. Special assemblies of the Council may be called by the President or the Secretary-Treasurer, and shall be called by the President or the Secretary-Treasurer upon the written request of any two (2) Councilors.
- 3.7 NOTICE OF ASSEMBLIES OF THE COUNCIL.** Written notice of the time and place of all assemblies of the Council shall be given to each Councilor at least 10 days before the day of the assembly, either personally or by mailing such notice to each Councilor at the address designated by the Councilor for such purposes, or if none is designated, at the Councilor's last known address. Notices of special assemblies shall state the purpose or purposes of the assembly, and no business may be conducted at a special assembly except the business specified in the notice of the assembly. Notice of any assembly of the Council may be waived in writing before or after the assembly.
- 3.8 ACTION WITHOUT AN ASSEMBLY.** Any action required or permitted at any assembly of the Council or a committee thereof may be taken without an assembly, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, shall be signed by all of the Councilors and all of any non-Councilor committee members entitled to vote with respect

to the subject matter thereof, or by all the members of such committee, as the case may be. The consent shall be evidenced by one or more written approvals, each of which sets forth the action taken and bears the signature of one or more Councilors or committee members. All the approvals evidencing the consent shall be delivered to the Secretary-Treasurer to be filed in the corporate records. The action taken shall be effective when all the Councilors or the committee members, as the case may be, have approved the consent unless the consent specifies a different effective date. Any such consent signed by all Councilors or all the committee members, as the case may be, shall have the same effect as a unanimous vote and may be stated as such in any document filed with the Secretary of State under the Illinois General Not for Profit Corporation Act.

- 3.9 QUORUM AND VOTING REQUIREMENTS.** A majority of the Councilors then in office and a majority of any committee appointed by the Council constitutes a quorum for the transaction of business. The vote of a majority of the Councilors or committee members present at any assembly at which there is a quorum shall be the acts of the Council or the committee, except as a larger vote may be required by the laws of the State of Illinois, these bylaws or the Articles of Incorporation. A member of the Council or of a committee may participate in an assembly by conference telephone or similar communications equipment by means of which all persons participating in the assembly can hear one another and communicate with each other. Participation in an assembly in this manner constitutes presence in person at the assembly. No Councilor may act by proxy on any matter.
- 3.10 POWERS OF THE COUNCILORS.** The Councilors shall have charge, control and management of the business, property, personnel, affairs and funds of the corporation and shall have the power and authority to do and perform all acts and functions permitted for an organization described in Section 501(c)(3) of the Code not inconsistent with these bylaws, the Articles of Incorporation or the laws of the State of Illinois. In addition to and not in limitation of all powers, express or implied, now or hereafter conferred upon Boards of Directors of nonprofit corporations, and in addition to the powers mentioned in and implied from Section 1.3, the Councilors shall have the power to borrow or raise money for corporate purposes, to issue bonds, notes or debentures, to secure such obligations by mortgage or other lien upon any and all of the property of the corporation, whether at the time owned or thereafter acquired, and to guarantee the debt of any affiliated or subsidiary corporation or other entity, whenever the same shall be in the best interests of the corporation and in furtherance of its purposes.
- 3.11 COMPENSATION.** Councilors shall receive no compensation for their services on the Council. The preceding shall not, however, prevent the corporation from purchasing insurance as provided in Section 5.1 nor shall it

prevent the Council from providing reasonable compensation to a Councilor for services which are beyond the scope of his or her duties as Councilor or from reimbursing any Councilor for expenses actually and necessarily incurred in the performance of his or her duties as a Councilor.

## IV. OFFICERS

- 4.1 OFFICERS.** The officers shall be a President, a President-Elect, a Vice President, a Secretary-Treasurer, and a Recorder.
- 4.2 ELECTION AND TERM OF OFFICE.** The President, President-Elect, and Vice President of the Association shall be elected for terms of one year each. The Secretary-Treasurer and Recorder shall be elected for three year terms. Officers of the Association shall be elected by majority vote of the active and senior members during the AAES Business Meeting.
- 4.3 REMOVAL.** Any officer or agent may be removed with or without cause by the Council or other persons authorized to elect or appoint such officer or agent but such removal shall be without prejudice to the contract rights, if any, of the person so removed. Election or appointment of an officer or agent shall not of itself create any contract rights.
- 4.4 PRESIDENT.** The President shall preside at Council assemblies and the annual members' assembly. The President shall appoint members to all standing and ad hoc committees and shall serve as an ex-officio member of each. Successors to vacated offices of the Association shall be appointed by the President until the position is filled at the next annual assembly. The President shall prepare an address to the annual assembly of the Association.
- 4.5 PRESIDENT-ELECT.** The President-Elect, in the absence or incapacity of the President, shall perform the duties of the President's office.
- 4.6 VICE PRESIDENT.** In the absence or incapacity of both the President and the President-Elect, the Chair shall be assumed by the Vice President
- 4.7 SECRETARY-TREASURER.** The Secretary-Treasurer shall keep minutes of the Association and the Council, receive and care for all records belonging to the Association, and conduct the correspondence of the Association. This office will issue to all members a written report of the preceding year's transactions to be read to the Council and membership at the annual assembly. The Secretary-Treasurer will prepare an annual report for audit. The Secretary-Treasurer shall have the authority to certify the bylaws, resolutions of the members and Council and committees thereof, and other documents of the corporation as true and correct copies thereof.

- 4.8 RECORDER.** The Recorder shall receive the manuscripts and edition of the discussions. The Recorder shall be custodian for the transactions of the Association.

## V. INDEMNIFICATION

- 5.1 INDEMNIFICATION.** Each person who is or was a Councilor, member, officer or member of a committee of the corporation and each person who serves or has served at the request of the corporation, as a Councilor, officer, partner, employee or agent of any other corporation, partnership, joint venture, trust or other enterprise may be indemnified by the corporation to the fullest extent permitted by the corporation laws of the State of Illinois as they may be in effect from time to time. The corporation may purchase and maintain insurance on behalf of any such person against any liability asserted against and incurred by such person in any such capacity or arising out of his status as such, whether or not the corporation would have power to indemnify such person against such liability under the preceding sentence. The corporation may, to the extent authorized from time to time by the Council, grant rights to indemnification to any employee or agent of the corporation to the fullest extent provided under the laws of the State of Illinois as they may be in effect from time to time.

## VI. COMMITTEES

- 6.1 COMMITTEES.** A majority of the Council may establish such committees from time to time as it shall deem appropriate and shall define the powers and responsibilities of such committees. The Council may establish one or more executive committees and determine the powers and duties of such executive committee or committees within the limits prescribed by law.
- A. Standing committees of the Association shall consist of the Membership Committee (composed of the Council), Publication and Program Committee, Education and Research Committee, and Fellowship Committee.
- B. The Nominating Committee shall consist of the President and two immediate past Presidents. The most senior past President is chairman of the committee.
- C. All committees shall be chaired by members appointed by the President with the advice of the Council.

**6.2 COMMITTEES OF COUNCILORS.** Unless the appointment by the Council requires a greater number, a majority of any committee shall constitute a quorum, and a majority of committee members present and voting at a meeting at which a quorum is present is necessary for committee action. A committee may act by unanimous consent in writing without a meeting and, subject to the provisions of the bylaws for action by the Council, the committee by majority vote of its members shall determine the time and place of meetings and the notice required thereof. To the extent specified by the Council or in the articles of incorporation or bylaws, each committee may exercise the authority of the Council under Section 108.05 of the Act; provided, however, a committee may not:

- A. Adopt a plan for the distribution of the assets of the corporation, or for dissolution;
- B. Approve or recommend to members any act the Act requires to be approved by members, except that committees appointed by the Council or otherwise authorized by the bylaws relating to the election, nomination, qualification, or credentials of Councilors or other committees involved in the process of electing Councilors may make recommendations to the members relating to electing Councilors;
- C. Fill vacancies on the Council or on any of its committees;
- D. Elect, appoint, or remove any officer or Councilor or member of any committee, or fix the compensation of any member of a committee;
- E. Adopt, amend, or repeal the bylaws or the articles of incorporation;
- F. Adopt a plan of merger or adopt a plan of consolidation with another corporation, or authorize the sale, lease, exchange or mortgage of all or substantially all of the property or assets of the corporation; or
- G. Amend, alter, repeal, or take action inconsistent with any resolution or action of the Council when the resolution or action of the Council provides by its terms that it shall not be amended, altered, or repealed by action of a committee.

## VII. AMENDMENTS

**7.1 AMENDMENTS.** These bylaws may be amended at the annual assembly of the membership provided a notice setting forth the amendment or a summary of the changes to be effected thereby is given to each member entitled to vote

thereon in the manner and within the time provided in these bylaws for notice of the assembly. These bylaws may be amended at the annual assembly by a two-thirds affirmative vote of the members present. No amendment inconsistent with the Articles of Incorporation shall be effective prior to amendment of the Articles of Incorporation.

## VIII. BOOKS AND RECORDS

- 8.1 BOOKS AND RECORDS.** The corporation shall keep correct and complete books and records of account and shall also keep minutes of the proceedings of its members, Council and committees having any of the authority of the Council, and shall keep at the registered or principal office a record giving the names and addresses of the Council and members entitled to vote. All books and records of the corporation may be inspected by any Councilor or member entitled to vote, or his or her agent or attorney for any proper purpose at any reasonable time.

## IX. PARLIAMENTARY AUTHORITY

- 9.1 PARLIAMENTARY AUTHORITY.** The rules of parliamentary procedure in "Robert's Rules of Order, Revised", shall govern the proceedings of the assemblies of this corporation, subject to all other rules contained in the Articles of Incorporation and Bylaws and except that proxy voting shall be allowed in accordance with the Illinois General Not for Profit Corporation Act of 1986

## X. SEVERABILITY

- 10.1 SEVERABILITY.** Each of the sections, subsections and provisions hereof shall be deemed and considered separate and severable so that if any section, subsection or provision is deemed or declared to be invalid or unenforceable, this shall have no effect on the validity or enforceability of any of the other sections, subsections or provisions.



# GEOGRAPHICAL MEMBERSHIP DIRECTORY

2009 - 2010



# GEOGRAPHICAL MEMBERSHIP DIRECTORY

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## **Brazil**

---

### **Porto Alegre**

Molinari, Alberto S.

### **Sao Paulo**

Aun, Frederico

## **Canada**

---

### **ALBERTA**

#### **Calgary**

Harvey, Adrian M

Mack, Lloyd

Pasieka, Janice Lynn

### **BRITISH COLUMBIA**

#### **Vancouver**

Bugis, Samuel P.

Schmidt, Nis

### **ONTARIO**

#### **Toronto**

Rosen, Irving Bernard

Rotstein, Lorne E.

Tasevski, Robert

Urbach, David Robert

### **QUEBEC**

#### **Montreal**

Tabah, Roger J.

## **Chile**

---

### **Santiago**

Costa, Eduardo A.

## **Guatemala**

---

### **Guatemala City**

Penalzo, Marco Antonio

## **Mexico**

---

### **Merida**

Fajardo-Cevallos, Rafael Enrique

### **Mexico**

Pantoja, Juan Pablo Pablo

### **Mexico City**

Herrera, Miguel F.

Sierra-Salazar, Mauricio

## **United States**

---

### **ALABAMA**

#### **Birmingham**

Diethelm, Arnold G.

Smith, Gardner S.

Sperling, David

#### **Mobile**

Dyess, Donna Lynn

#### **Montevallo**

Beenken, Samuel

### **ARIZONA**

#### **Phoenix**

Flynn, Stuart D.

Harding, Richard J.

Schlinkert, Richard T.

#### **Scottsdale**

Demeure, Michael J.

Van Lier Ribbink, Jeffrey A.

### **ARKANSAS**

#### **Little Rock**

Kim, Lawrence T.

Mancino, Anne T.

### **CALIFORNIA**

#### **Beverly Hills**

Katz, Alfred D.

# GEOGRAPHICAL MEMBERSHIP DIRECTORY

---

## **Duarte**

Yim, John Hosei

## **El Macero**

Wolfman, Earl

## **Hillsborough**

Lim, Robert C.

## **La Jolla**

Bouvet, Michael

Sanford, Arthur

## **Los Angeles**

Haigh, Philip I.

Hines, Oscar J.

Yeh, Michael W

## **Mountain View**

Grogan, Raymon H.

## **Northstar-Truckee**

Danto, Lawrence A.

## **Orange**

Harness, Jay Kenneth

## **Pleasant Hill**

Clark, Gary C.

## **San Diego**

Block, Melvin A.

## **San Francisco**

Clark, Orlo H.

Debas, Haile T.

Duh, Quan-Yang

Galante, Maurice

Harari, Avital

Hunt, Thomas K.

Mitmayer, Elliot J.

Shen, Wen Tsong

Yutan, Elaine U.

## **San Jose**

Allo, Maria D.

## **Santa Barbara**

Latimer, Ronald G.

## **Santa Monica**

Giuliano, Armando E.

## **Stanford**

Greco, Ralph S.

Norton, Jeffrey A.

## **Sylmar**

Zuckerbraun, Lionel

## **COLORADO**

### **Aurora**

McIntyre, Robert C.

Raeburn, Christopher D.

### **Boulder**

Brown, Dennistoun K.

### **Littleton**

Liechty, R. Dale

## **CONNECTICUT**

### **New Haven**

Foster, Jr., Roger S.

Milan, Stacey A.

Roman, Sanziana Alina

Sosa, Julie Ann

Udelsman, Robert

## **DISTRICT OF COLUMBIA**

### **Washington D.C.**

Felger, Erin A.

Geelhoed, Glenn W.

Stojadinovic, Alexander

## **FLORIDA**

### **Bay Pines**

Goodgame, J. Thomas

### **Bonita Springs**

Freier, Duane T.

### **Coral Gables**

Irvin, George L.

### **Highland Beach**

Hamberger, Stuart W.

### **Jacksonville**

Asbun, Horacio

Martin, J. Kirk

Smith, Stephen L.

# GEOGRAPHICAL MEMBERSHIP DIRECTORY

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## **Miami**

Cannon, Jennifer  
Lew, John I.

## **Miami Beach**

Dembrow, Victor D.

## **Ponte Vedra Beach**

Remine, William H.

## **Safety Harbor**

Schmidt, Rick J.

## **Stuart**

Vopal, James J.

## **Tampa**

Carter, Bradford  
Fabri, Peter J.  
Gallagher, Scott F  
**Wesley Chapel**  
Norman, James G  
Politz, Doug

## **GEORGIA**

### **Atlanta**

McGill, Julie F  
Sharma, Jyotirmay  
Weber, Collin J.

### **Augusta**

Mansberger, Arlie R.  
Terris, David J.  
Yeh, Karen A.

### **Marietta**

Underwood, Robert A

### **Savannah**

Yeager, E. Stephen

## **HAWAII**

### **Honolulu**

Wong, Livingston

## **ILLINOIS**

### **Aurora**

Bloom, Allen D.

### **Chicago**

Angelos, Peter  
Fredland, Allan J.  
Kaplan, Edwin L.  
Moo-Your, Tricia A.

Patel, Subhash  
Pickleman, Jack  
Sturgeon, Cord

### **Evanston**

Prinz, Richard A.  
Winchester, David J.

### **Hinsdale**

Paloyan, Edward

### **Maywood**

De Jong, Steven A.

### **North Chicago**

Ross, Arthur J.  
Zdon, Michael J.

### **Oaklawn**

Hopkins, William M.

### **Park Ridge**

Hann, Sang E.

### **Zion**

Staren, Edgar D.

## **INDIANA**

### **Indianapolis**

Broadie, Thomas A.  
Miskulin, Judiann

## **IOWA**

### **Iowa City**

Gurll, Nelson J.  
Howe, James R.  
Lal, Geeta  
Sugg, Sonia L.  
Weigel, Ronald J.

## **KANSAS**

### **Kansas City**

Cohen, Mark S.

# GEOGRAPHICAL MEMBERSHIP DIRECTORY

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## **Lake Quivera**

Hermreck, Arlo S.

## **KENTUCKY**

### **Louisville**

Goldstein, Richard E.

## **LOUISIANA**

### **Kenner**

Woltering, Eugene A.

### **New Orleans**

Jaffe, Bernard M.

Kandil, Emad

### **Shreveport**

McDonald, John C.

## **MAINE**

### **Portland**

Goldfarb, Walter B.

MacGillivray, Dougald C.

Radke, Frederick R.

Wu, Leslie S.

### **Vinalhaven**

Kinder, Barbara

## **MARYLAND**

### **Baltimore**

Alexander, H. Richard

Barbul, Adrian

Dackiw, Alan P.B.

Gann, Donald S.

Marohn, Michael R.

Turner, Douglas J.

Zeiger, Martha A.

### **Bethesda**

Hughes, Marybeth

Kebebew, Electron

Mathur, Aarti

McCoy, Kelly Lynn

Phan, Giao Quynhthi

## **MASSACHUSETTS**

### **Auburndale**

Silen, William

### **Beverly**

Narra, Vinod

### **Boston**

Beazley, Robert

Brooks, David C.

Gawande, Atul

Gaz, Randall D.

Goldfarb, Melanie

Hasselgren, Per-Olof J.

Hodin, Richard A.

Lubitz, Carrie C.

McAneny, David

Moore, Francis D.

Nehs, Matthew A.

Parangi, Sareh

Randolph, Gregory W.

Rosen, Jennifer E.

### **Brookline**

Cady, Blake

Mowschenson, Peter

### **Burlington**

Brams, David M.

Wei, John P.

### **Pittsfield**

Curletti, Eugene L.

### **Shrewsbury**

Patwardhan, Nilima

### **Springfield**

Coe, Nicholas P.W.

Jabiev, Azad

### **Weston**

Aliapoulos, Menelaos A.

## **MICHIGAN**

### **Ann Arbor**

Burney, Richard E.

Cerny, Joseph C.

Doherty, Gerard M.

# GEOGRAPHICAL MEMBERSHIP DIRECTORY

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Gauger, Paul G.  
Hughes, David T.  
Miller, Barbra S.  
Thompson, Norman W.

## **Bloomfield Hills**

Saxe, Andrew W.

## **Detroit**

Talpos, Gary B.

## **Frankfort**

Griffen, Ward O.

## **Kalamazoo**

McLeod, Michael K.

## **Midland**

Sequeira, Melwyn J.

## **Royal Oak**

Czako, Peter F.

Reid, Daryl A.

## **MINNESOTA**

### **Minneapolis**

Delaney, John P.

Najarian, John S.

### **Rochester**

Carney, J. Aidan

Farley, David R.

Grant, Clive S.

Hay, Ian D.

McKenzie, Travis J

Richards, Melanie L.

Service, F. John

Thompson, Geoffrey B.

Young, William F.

## **MISSISSIPPI**

### **Jackson**

Parent, Andrew D.

### **Tupelo**

Bowlin, John W.

## **MISSOURI**

### **Columbia**

Koivunen, Debra G.

### **Saint Louis**

Ballinger, Walter F.

Brunt, L. Michael

Gillanders, William E.

Hall, Bruce L.

O'Neal, Lawrence W.

Moley, Jeffrey F.

Shieber, William

Wells, Samuel A.

## **MONTANA**

### **Kalispell**

Sheldon, David

## **NEBRASKA**

### **Papillion**

Stanislav, Gregory

## **NEW JERSEY**

### **Morristown**

Whitman, Eric D.

### **Neptune**

Shifrin, Alexander L.

### **Paterson**

Budd, Daniel C.

## **NEW MEXICO**

### **Albuquerque**

Quintana, Doris A.

### **Rio Rancho**

Miscall, Brian G.

## **NEW YORK**

### **Bronx**

Libutti, Steven K.

### **Buffalo**

Cance, William G.

### **Cooperstown**

# GEOGRAPHICAL MEMBERSHIP DIRECTORY

---

Olson, John E.  
Ryan, M. Bernadette

## **Ithaca**

Foster, Cory L.

## **Lake Success**

Sznytter, Laura A.

## **Middletown**

Geha, Rula

## **Mount Kisco**

Spanknebel, Kathryn

## **New York**

Allendorf, John

Brennan, Murray F.

Chabot, John A.

Fahey, Thomas J

Heller, Keith S.

Inabnet III, William B

Iyer, N Gopalakrishna

Lee, James

Ogilvie, Jennifer B.

Owen, Randall P

Patel, Kopal N.

Shah, Jatin P.

Shaha, Ashok R.

Strong, Vivian E.

## **Syracuse**

Kort, Kara C.

Numann, Patricia J.

## **NORTH CAROLINA**

### **Apex**

Leight, George S.

### **Asheville**

Humble, Ted H.

### **Chapel Hill**

Croom, Robert D.

Thomas, Jr., Colin G.

### **Charlotte**

Kercher, Kent

Pederson, Lee

Wagner, Kristin E.

## **Durham**

Olson, Jr., John A.

Tyler, Douglas S.

## **Greenville**

Pofahl, Walter E.

Pories, Walter J.

## **Raleigh**

Faust, Kirk B.

## **Winston Salem**

Albertson, David A.

## **OHIO**

### **Akron**

Horattas, Mark C.

### **Chardon**

Dobyns, Brown M.

### **Cleveland**

Berber, Eren

Esselstyn, Caldwell B.

Mansour, Edward G.

McHenry, Christopher R.

Milas, Kresimira M.

Raaf, John H.

Siperstein, Allan

Wilhelm, Scott M.

### **Columbus**

Arrese, David

Ellison, Christopher

Farrar, William B.

Phay, John E.

## **OKLAHOMA**

### **Tulsa**

Broughan, Thomas A.

## **OREGON**

### **Portland**

Pommier, Rodney F.

Sheppard, Brett C.

Yu, Kelvin Chiu

# GEOGRAPHICAL MEMBERSHIP DIRECTORY

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## **PENNSYLVANIA**

### **Abington**

Borman, Karen R.

Kukora, John S.

### **Allentown**

Hartzell, George W.

### **Center Valley**

McDonald, Marian P.

### **Danville**

Pellitteri, Phillip K.

Strodel, William E.

### **Harrisburgh**

Yang, Harold C.

### **Hershey**

Kauffman, Jr, Gordon L.

Shereef, Serene

### **Philadelphia**

Cohn, Herbert E.

Fraker, Douglas S.

Kairys, John C.

LiVolsi, Virginia

Ridge, John A.

Yeo, Charles J.

### **Pittsburgh**

Bartlett, David L.

Carty, Sally E.

Melck, Adrienne

Stang, Michael T.

Stremple, John

Yip, Linwah

### **Ridley Park**

Amara, Shamly V

### **Sayre**

Trostle, Doug R.

## **RHODE ISLAND**

### **Providence**

Monchik, Jack M.

### **Rumford**

Harrison, Timothy S.

## **SOUTH CAROLINA**

### **Charleston**

Carneiro-Pla, Denise

Cole, David J.

van Heerden, Jon A.

### **Columbia**

Brown, J. Jeffrey

### **Greenville**

Lokey, Jonathan S

Macfie, Jeffreys

### **Spartanburg**

Orr, Richard K.

## **TENNESSEE**

### **Chattanooga**

Giles, Wesley H.

Roe, S. Michael

### **Knoxville**

Nelson, H. Sperry

Zirkle, Kevin

### **Nashville**

Abumrad, Naji N.

Solorzano, Carmen C.

Williams, Kathleen Crews

## **TEXAS**

### **Dallas**

Holt, Shelby A.

Nwariaku, Fiemu E

Snyder, III, William H.

Steckler, Robert M.

### **Houston**

Brandt, Mary L.

Brunicardi, F. Charles

Jackson, Gilchrist L.

Lee, Jeffrey E.

Perrier, Nancy D.

### **Temple**

Lairmore, Terry Curtis

Snyder, Samuel K.

# GEOGRAPHICAL MEMBERSHIP DIRECTORY

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## **Wichita Falls**

Sutton, Beth H.

## **UTAH**

### **Salt Lake City**

Neumayer, Leigh A.

## **VIRGINIA**

### **Charlottesville**

Hanks, John Bright  
Smith, Philip W.

### **Falls Church**

Lee, Louis C

### **Richmond**

Grover, Amelia C.  
Merrell, Ronald C.  
Newsome, H. H.  
Stevenson, Christina E.

## **WASHINGTON**

### **Spokane**

Sinha, Renu

## **WEST VIRGINIA**

### **Morgantown**

Mitchell, Bradford K.

## **WISCONSIN**

### **La Crosse**

Kisken, William A.

### **Madison**

Chen, Herbert  
Kunnimalaiyaan, Muthusamy  
Mack, Eberhard A.  
Matzke, Gregory M.  
Starling, James R.  
Wenger, Ronald D.

### **Milwaukee**

Evans, Douglas B.  
Wilson, Stuart D.  
Yen, Tina Wei-Fang

## Corresponding Countries of the AAES

## **Australia**

---

### **Beecroft**

Reeve, Thomas S.

### **Frankston**

Serpell, Jonathan W,

### **St Leonards**

Delbridge, Leigh Walter  
Sidhu, Stan  
Sywak, Mark

### **Warroona**

Edis, Anthony J.

## **Austria**

---

### **Vienna**

Niederle, Bruno

## **Belgium**

---

### **Liege**

Defechereux, Thierry

## **China**

---

### **Hong Kong**

Lo, Chung-Yau

## **Croatia**

---

Bura, Miljenko

## **Denmark**

---

### **Duisburg**

Simon, Dietmar

### **Dusseldorf**

Roehler, Hans-Dietrich

### **Essen**

Frilling, Andrea

### **Halle**



# GEOGRAPHICAL MEMBERSHIP DIRECTORY

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Dralle, Henning

## **Mainz**

Musholt, Thomas J.

## **Rostock**

Klar, Ernst

## **Ulm**

Weber, Theresia

## **France**

---

### **Francheville**

Peix, Jean-louis

### **Lille Cedex**

Carnaille, Bruno Marie

### **Marseilles**

Henry, Jean-Francois

Sebag, Frederic N.

### **Poitiers**

Kraimps, Jean Louis

### **Strasbourg**

Mutter, Didier

### **Vandoeuvre les Nancy**

Brunaud, Laurent

## **Germany**

---

### **Marousi**

Linos, Dimitrios A.

## **India**

---

### **Lucknow**

Agarwal, Gaurav

Mishra, Saroj K.

## **Israel**

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### **Hertzlia**

Schachter, Pinhas P.

## **Italy**

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### **Padova**

Iacobone, Maurizio

Favia, Gennaro

### **Pisa**

Miccoli, Paolo

### **Rome**

Bellantone, Rocco

Lombardi, Celestino Pio

Raffaelli, Marco

## **Japan**

---

### **Kobe**

Miyauchi, Akira

### **Nagoya**

Imai, Tsuneo

### **Oita**

Noguchi, Shiro

### **Osaka**

Shiba, Elichi

Imamura, Masayuki

### **Tokyo**

Obara, Takao

Takami, Hiroshi E.

## **Korea**

---

### **Seoul**

Youn, Yeo-Kyu

## **Netherlands**

---

### **Utrecht**

Vriens, Menno R

## **Norway**

---

### **Bergen**

Brauckhoff, Michael

Varhaug, Jan E.

# GEOGRAPHICAL MEMBERSHIP DIRECTORY

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## **Russia**

---

### **Saint Petersburg**

Romanchishen, Anatoly Filippovich

## **Saudi Arabia**

---

### **Riyadh**

Al Sobhi, Saif Sulaiman

## **Spain**

---

### **Barcelona**

Moreno Llorente, Pablo

### **Sevilla**

Sanchez-Blanco, J.M.

## **Sweden**

---

### **Linkoping**

Gimm, Oliver

### **Stockholm**

Hamberger, Bertil

### **Uppsala**

Akerstrom, Goran

Skogseid, Britt

## **Taiwan**

---

### **Taipei**

Lee, Chen-Hsen

Tu, Shih Hsin

## **Turkey**

---

### **Istanbul**

Tezelman, Serdar Tevfik

Duren, Mete

Terzioglu, Tarik

## **Ukraine**

---

### **Kiev**

Kvachenyuk, Andrey

## **United Kingdom**

---

### **Devon**

Pearse, A.G.E.

### **Oxfordshire**

Dudley, Nicholas E.

# 2010 MEMBER CONTACT INFORMATION

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## IMPORTANT!

*Please indicate any changes and be sure to include your current email address*

**Name:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Institution:** \_\_\_\_\_

**Birthdate:** \_\_\_\_\_

**Spouse:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

**Fax:** \_\_\_\_\_

**Email:** \_\_\_\_\_

### SUBMIT TO \*REGISTRATION DESK

or to AAES Headquarters via  
Email: [information@endocrinesurgery.org](mailto:information@endocrinesurgery.org)

OR

Fax: **(913) 273-9940**

# IN MEMORIAM

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**Richard Schwartz**

*Lexington, KY*







