55th Annual Meeting of the Southeastern Society of Plastic and Reconstructive Surgeons

The Science Behind the Art

FINAL PROGRAM
Ritz-Carlton Amelia Island
Amelia Island, Florida
JUNE 2–6, 2012
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GREETINGS AND WELCOME
TO AMELIA ISLAND, FLORIDA!

On behalf of the Society, we are glad you decided to join us for this annual event. The Annual Scientific Meeting is known for its high-quality clinical sessions. But it is also one of the only meetings around that allows you to spend some quality time with family and friends at one of the best resort locations in the southeast. Have a great week, and remember to take advantage of the social events we’ve planned just for you.

You won’t be disappointed!

W. Byron Barber
President
2011–2012
OFFICERS & TRUSTEES

PRESIDENT
W. Byron Barber
Greensboro, North Carolina

PRESIDENT-ELECT
Ann Ford Reilley
Baton Rouge, Louisiana

VICE-PRESIDENT
Harold I. Friedman
Columbia, South Carolina

SECRETARY
Henry Vasconez
Lexington, Kentucky

ASSISTANT SECRETARY
Kevin Hagan
Nashville, Tennessee

TREASURER
Walter Erhardt
Albany, Georgia

HISTORIAN
David Drake
Charlottesville, Virginia

PARLIAMENTARIAN
Braun Graham
Sarasota, Florida

PAST PRESIDENT AND TRUSTEE
James C. Grotting
Birmingham, Alabama

TRUSTEES
Jorge de la Torre (2012)
Birmingham, Alabama

Karen Wells (2012)
Tampa, Florida

Robert L. Allen (2013)
Charleston, South Carolina

William Lineaweaver (2013)
Brandon, Mississippi

C. Scott Hultman (2014)
Chapel Hill, North Carolina

John Lindsey (2014)
Metairie, Louisiana
PAST PRESIDENTS

1958 • Founding
1959 • Neal Owens*
1960 • Greer Ricketson*
1961 • Robert F. Hagerty*
1962 • Lorenzo H. Adams*
1963 • Clifford C. Snyder
1964 • Samuel E. Upchurch*
1965 • McCarthy DeMere*
1966 • Charles Horton*
1967 • Francis Marzoni*
1968 • Andrew M. Moore*
1969 • Carter P. Maguire*
1970 • James H. Hendrix*
1971 • John R. Lewis*
1972 • James G. Stuckey*
1973 • James B. Cox
1974 • William M. Berkeley*
1975 • Henry T. Brobst*
1976 • John M. Hamilton
1977 • Jerome E. Adamson
1978 • Byron E. Green
1979 • George W. Hoffman*
1980 • William E. Huger*
1981 • Eugene F. Worthen
1982 • Joel W.L. Mattison*
1983 • James H. Fleming
1984 • Robert C. Reeder*
1985 • Andrew W. Walker*
1986 • John R. Reynolds
1987 • John R. Royer
1988 • James H. Carraway
1989 • John H. Hartley, Jr.
1990 • W. Michael Bryant
1991 • Allen H. Hughes
1992 • Norman M. Cole
1993 • Edward A. Luce
1994 • Benjamin H. Wofford
1995 • William F. Mullis
1996 • Thomas W. Orcutt
1997 • J. Barry Bishop
1998 • Kenna S. Given
1999 • W. Howard Kisner
2000 • R. Cole Goodman
2001 • L. Franklyn Elliott
2002 • Andrew M. Moore, II
2003 • Ronald J. Johnson
2004 • William H. Wallace
2005 • Michael E. Beasley
2006 • Anthony J. Pizzo
2007 • R. Bruce Shack
2008 • Suman K. Das
2009 • James W. Wade
2010 • James Moore
2011 • James C. Grotting

*Deceased
Samuel Upchurch (1909–1968) was born in Clanton, Alabama on April 13, 1909. He died in 1968 at the age of 59 at University Hospital in Birmingham, Alabama. He started his undergraduate education at the Citadel in Charleston, SC in 1925 and later finished his A.B. degree at Vanderbilt University in 1929. He stayed at Vanderbilt to complete his M.D. degree in 1933 and then began his surgical training at Duke University. He became Chief Resident in Surgery and stayed on the Duke faculty as Instructor in Surgery.

He then trained in plastic surgery in St. Louis under Drs. Barrett Brown, Frank McDowell, and Louis Byars. During World War II, he was ordered to active duty and installed as a Major in the Surgical Division of the 65th General Hospital which was sent to England for the duration of the war. He ultimately became Regional Consultant in Plastic Surgery for the Eighth Air Force. After the war, he returned to St. Louis for an additional year of training with the plastic surgical group, and in 1947 he moved to Birmingham, Alabama and became the pioneer plastic surgeon in Alabama. He was soon made Chief of the Division of Plastic Surgery. He published numerous scientific articles and was an investigator in the use of silicones as a soft tissue substitute.

He was President of the Southeastern Society of Plastic and Reconstructive Surgeons in 1964. Upon his death, his wife, Ann (Samford) Upchurch, bequeathed to the Society the funds for the establishment of the Upchurch Educational Fund and the annual Upchurch Lectureship.

The inaugural Samuel E. Upchurch Memorial lecture was given on May 27, 1975 by Ian Jackson entitled, “Reconstruction of the Upper Limb in Rheumatoid Arthritis”.
Ian Jackson, M.D. 1975
Thomas Cronin, M.D. 1977
Sal Castanares, M.D. 1978
Kenneth Pickrell, M.D. 1979
Robert Goldwyn, M.D. 1980
Richard Stark, M.D. 1981
William Hamm, M.D. 1982
Reed Dingman, M.D. 1983
Clifford Snyder, M.D. 1984
John Mustarde, M.D. 1985
Fernando Ortiz-Monasterio, M.D. 1986
Jack Sheen, M.D. 1987
Jacques van der Meulen, M.D. 1988
Thomas D. Rees, M.D. 1989
Paul M. Weeks, M.D. 1990
Frederick J. McCoy, M.D. 1991
Simon Fredricks, M.D. 1992
John Hoopes, M.D. 1993
J.B. Lynch, M.D. 1994
M.J. Jurkiewicz, M.D. 1995
Milton T. Edgerton, M.D. 1996
Carl R. Hartrampf, M.D. 1997
John B. McCraw, M.D. 1998
D. Ralph Millard, Jr., M.D. 1999
Burton D. Brent, M.D. 2000
Jacques Baudet, M.D. 2001
Leonard T. Furlow, Jr., M.D. 2002
Norman M. Cole, M.D. 2003
Michael E. Jabeley, M.D. 2004
P.G. Arnold, M.D. 2005
Luis O. Vasconez, M.D. 2006
Edward A. Luce, M.D. 2007
Wayne Morrison, M.D. 2008
Gustavo Colon, M.D. 2009
Rod Hester, M.D. 2010
William P. Magee, Jr., M.D. 2011
Maurice (Josh) Jurkiewicz, M.D. (1923–2011) was born on September 24, 1923 in Claremont, New Hampshire. He died on May 29, 2011. He was the second of five children born to his Polish immigrant parents who passed through Ellis Island before World War I. The family moved to Bellow’s Falls, VT where they operated a family grocery store. After high school, Josh graduated magna cum laude with a D.D.S. from the University of Maryland in 1946.

During a brief enlistment in the Navy, he became interested in surgery. After his discharge, he enrolled at Harvard Medical School completing his M.D. studies and stayed for residency training in general surgery. He received his plastic surgery training at Barnes Hospital in St. Louis under Drs. Brown and Byars. After completing his surgical training in 1959, he was appointed chief of plastic surgery at the University of Florida. He did not take his plastic surgery board exam until 1963. Thus, formal plastic surgery resident training did not occur until 1965 at the University of Florida.

In 1971, Dr. Jurkiewicz moved to Atlanta and became the chief of plastic surgery at Emory University. His surgical skills coupled with excellent faculty recruitment and training resulted in Emory’s residency training program becoming renowned throughout the country. After years of national and international contributions to surgery, Dr. Jurkiewicz was selected as president of the American College of Surgeons in 1989.

In 2001, the Jurkiewicz Society of Emory University honored him by providing funding for a biannual Jurkiewicz lecture to be presented on odd years during the annual SESPRS meeting.

The first Jurkiewicz lecture was presented by Dr. Carl Hartrampf, Jr on June 11, 2001 entitled “Plastic Surgery at Emory Before Jurkiewicz and Plastic Surgery at Emory, 1971–2001.”

Carl R. Hartrampf, Jr., M.D. 2001
Leonard T. Furlow, Jr., M.D. 2003
Luis O. Vasconez, M.D. 2005
T. Roderick Hester, Jr., M.D. 2007
John McCraw, M.D. 2009
John J. Coleman III, M.D. 2011
SPECIAL ACHIEVEMENT AWARD

William J. Pitts, M.D. 1977

Robert C. Reeder, M.D. 1979

John R. Lewis, M.D. 1981

Bernard L. Kaye, M.D. 1982

Joel Mattison, M.D. 1985

McCarthy DeMere, M.D. 1987

Greer Ricketson, M.D. 1994

Allen Hughes, M.D. 1995

Richard Hagerty, M.D. 1997

Erle Peacock, M.D. 2001

Andrew Moore II, M.D. 2010
PICKRELL AWARD

Kenneth L. Pickrell, M.D. (1910–1984) was born on June 6, 1910 in Reading, PA. He died on August 20, 1984 in Durham, NC. He completed his undergraduate studies at Franklin and Marshall College in 1931. He received his MD from Johns Hopkins University in 1935. He completed his general surgery and plastic surgery training under Dr. John Stage Davis (1872–1946) at Johns Hopkins from 1935–1943. He subsequently became Chief of the Division of Plastic Surgery at Duke University where he trained scores of talented plastic surgery residents.

The SESPRS honored him posthumously by creating the Pickrell Award given meritoriously to a Southeastern member exemplifying outstanding teaching attributes in plastic surgery. The first recipient of the award was Dr. Andrew Moore from Lexington, KY in 1985.

Andrew M. Moore, M.D. 1985  John McCraw, M.D. 1996
James H. Hendrix, M.D. 1988  Joel Mattison, M.D. 1999
Leonard T. Furlow, Jr., M.D. 1992  Luis Vasconez, M.D. 2005
Hal G. Bingham, M.D. 1993  Michael E. Jabaley, M.D. 2006
Norman Cole, M.D. 1994
GLANCY AWARD

General Alfred Robinson Glancy, a former vice president of General Motors Corporation, was appointed by Franklin Roosevelt in 1942 to become Brigadier General in charge of running the automotive combat division of Army Ordnance in Detroit.

In 1944, Gen and Mrs. Glancy donated funds at the request of their daughter, Nora, to help build a hospital in Duluth, GA. The hospital was named the Joan Glancy Memorial Hospital in memory of their other daughter, Joan, who died as a child of pneumonia. While visiting Georgia long after his retirement, General Glancy had a successful surgical encounter with Southeastern member Dr. Billy Huger of Atlanta. When the General asked what he could do for Dr. Huger in gratitude for medical services rendered, he was politely asked to fund a residency competition award for the SESPRS. Hence, the Glancy Competition and the Glancy Award were founded.

This award is given every year to the resident judged to have the best paper presented in the resident’s competition. The winning resident’s program director is allowed to retain the coveted Glancy Bowl and display it at their institution for the following year until a new resident winner is named.

The first award was presented to Dr. Foad Nahai in 1977 for the paper “Facial Reconstruction with Microvascular Free Omental Transfer and Split Rib Grafts”.

<table>
<thead>
<tr>
<th>Award Year</th>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>Foad Nahai, M.D.</td>
<td>Emory University</td>
</tr>
<tr>
<td>1978</td>
<td>H. Louis Hill, M.D.</td>
<td>Emory University</td>
</tr>
<tr>
<td>1979</td>
<td>E.D. Newton, M.D.</td>
<td>University of Tennessee</td>
</tr>
<tr>
<td>1980</td>
<td>E.D. Newton, M.D.</td>
<td>University of Tennessee</td>
</tr>
<tr>
<td>1981</td>
<td>Dan H. Shell, M.D.</td>
<td>University of Tennessee</td>
</tr>
<tr>
<td>1982</td>
<td>Donato Viggiano, M.D.</td>
<td>University of Tennessee</td>
</tr>
<tr>
<td>1983</td>
<td>Larry Nichter, M.D.</td>
<td>University of Virginia</td>
</tr>
<tr>
<td>1984</td>
<td>Leonard Miller, M.D.</td>
<td>Emory University</td>
</tr>
<tr>
<td>1984</td>
<td>Richard Sadove, M.D.</td>
<td>Eastern Virginia Medical School</td>
</tr>
<tr>
<td>1986</td>
<td>Mason Williams, M.D.</td>
<td>Eastern Virginia Medical School</td>
</tr>
<tr>
<td>1987</td>
<td>David Hurley, M.D.</td>
<td>University of Virginia</td>
</tr>
<tr>
<td>1988</td>
<td>J.D. Stuart, M.D.</td>
<td>University of Virginia</td>
</tr>
</tbody>
</table>
James H. Schmidt, M.D.
University of Florida
1989

Paul A. Watterson, M.D.
Emory University
1990

Michael G. Kanosky, M.D.
University of Mississippi
1991

Joseph M. Woods, IV, M.D.
Vanderbilt University
1992

David Brothers, M.D.
University of N.C. at Chapel Hill
1993

Scott N. Oishi, M.D.
University of Kentucky
1994

Gregory Mackay, M.D.
Emory University
1995

R. C. High, M.D.
Bowman Gray School of Medicine
1996

Henry F. Garazo, M.D.
Medical College of Georgia
1997

Kim Edward Koger, M.D.
Duke University
1998

J. Timothy Katzen, M.D.
Vanderbilt University
1999

Richard Rosenblum, M.D.
Vanderbilt University
2000

Colin Riordan, M.D.
Vanderbilt University
2001

Julia MacRae, M.D.
University of Virginia
2002

Julia MacRae, M.D.
University of Virginia
2003

M.I. Okwueze, M.D.
Vanderbilt University
2004

Robert E.H. Ferguson, Jr., M.D.
Kentucky Clinic
2005

Dean DeRoberts, M.D.
Wake Forest
2006

Howard Levinson, M.D.
Duke University
2007

S.S Tholpady, M.D.
University of Virginia
2008

Scott Hollenbeck, M.D.
Duke University
2009

Yvonne Pierpont, M.D.
University of South Florida
2010

Anthony Capito, M.D.
University of Virginia
2011
### Saturday, June 2

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:00–6:30 PM</td>
<td>Registration Open</td>
<td>Seaside Room</td>
</tr>
<tr>
<td>6:30–8:00 PM</td>
<td>Welcome Reception</td>
<td>Oceanfront Lawn</td>
</tr>
<tr>
<td></td>
<td>Open to all registrants. Dress is “Ritz” Casual. Drinks and hors d’oeuvres will be served. Dinner on your own — reservations highly recommended.</td>
<td></td>
</tr>
<tr>
<td>7:30–10:00 PM</td>
<td>Past Presidents Dinner</td>
<td></td>
</tr>
<tr>
<td></td>
<td>By invitation only. See Registration for details.</td>
<td></td>
</tr>
</tbody>
</table>

### Sunday, June 3

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 AM</td>
<td>Registration Open</td>
<td>Salon 2 Foyer</td>
</tr>
<tr>
<td>6:30–7:30 AM</td>
<td>Continental Breakfast and Exhibits Open</td>
<td>Salon 3</td>
</tr>
<tr>
<td>7:30–8:00 AM</td>
<td>Welcome and Society Reports</td>
<td>Salon 2</td>
</tr>
<tr>
<td>8:00–10:15 AM</td>
<td>Resident Paper Competition 1–4</td>
<td>Salon 2</td>
</tr>
<tr>
<td></td>
<td>Member Papers</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Keynote Presentation:</strong> Charles Bierbauer</td>
<td></td>
</tr>
<tr>
<td>10:15–10:45 AM</td>
<td>Break, Visit Exhibits, and Posters</td>
<td>Salon 3, Plaza 1</td>
</tr>
<tr>
<td>10:45–12:15 PM</td>
<td>Body Contouring Panel</td>
<td>Salon 2</td>
</tr>
<tr>
<td>12:15–12:45 PM</td>
<td>Break, Visit Exhibits, and Posters</td>
<td>Salon 3, Plaza 1</td>
</tr>
<tr>
<td>12:30–2:30 PM</td>
<td><strong>Teaching Course:</strong> Modern Nasal Reconstruction*</td>
<td>Santa Maria Room</td>
</tr>
<tr>
<td></td>
<td>Fred Menick, M.D.</td>
<td></td>
</tr>
<tr>
<td>1:00–5:00 PM</td>
<td>Annual Tennis Tournament*</td>
<td>Ritz-Carlton</td>
</tr>
<tr>
<td></td>
<td>Tennis Courts</td>
<td>Tennis Courts</td>
</tr>
<tr>
<td>4:30–5:15 PM</td>
<td>Review of Poster Presentations with Dr. Mark Codner, ASAPS Traveling Professor</td>
<td>Plaza 1</td>
</tr>
<tr>
<td></td>
<td>All Residents with posters on display are asked to attend.</td>
<td></td>
</tr>
<tr>
<td>6:30–10:00 PM</td>
<td>Theme Dinner</td>
<td>Walker’s Landing, Omni Amelia Island Plantation</td>
</tr>
<tr>
<td></td>
<td>Low Country Boil</td>
<td></td>
</tr>
</tbody>
</table>

Open to all registrants. Dress is Resort Casual. Transportation from the Ritz-Carlton to Walker’s Landing will begin at approximately 6:15 PM. Schedule subject to change. Check the Registration Desk for details.

### Monday, June 4
WEEK AT-A-GLANCE

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 AM</td>
<td>Registration Open</td>
<td>Salon 2 Foyer</td>
</tr>
<tr>
<td>6:00 AM</td>
<td>Annual “Fun Run”</td>
<td>Ritz-Carlton Grounds</td>
</tr>
<tr>
<td></td>
<td>Registration preferred but not required</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(no charge). Participants should meet in the lobby of the Ritz-Carlton at 6:00 AM.</td>
<td></td>
</tr>
<tr>
<td>7:00–8:00 AM</td>
<td>Continental Breakfast</td>
<td>Salon 3</td>
</tr>
<tr>
<td></td>
<td>Exhibits Open</td>
<td></td>
</tr>
<tr>
<td>7:00–8:00 AM</td>
<td>Poster Session with Author Q&amp;A</td>
<td>Plaza 1</td>
</tr>
<tr>
<td>7:30–11:20 AM</td>
<td>Member and Resident Papers</td>
<td>Salon 2</td>
</tr>
<tr>
<td></td>
<td>Facial Reconstruction Panel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resident Paper Competition 5–8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Upchurch Lecture: Thomas Biggs, M.D.</td>
<td></td>
</tr>
<tr>
<td>11:20–11:40 AM</td>
<td>Break, Visit Exhibits, and Posters</td>
<td>Salon 3, Plaza 1</td>
</tr>
<tr>
<td>11:40–1:00 PM</td>
<td>Panel Presentation: “The Science Behind the Art”</td>
<td>Salon 2</td>
</tr>
<tr>
<td>1:30 – 6:30 PM</td>
<td>Annual Golf Tournament</td>
<td>Golf Club of Amelia Island</td>
</tr>
</tbody>
</table>

Separate registration required. Participants to meet at Golf Club of Amelia Island, just outside the front door to the Ritz-Carlton, at 1:30 PM. See Registration Desk for details.

Dinner on your own — reservations highly recommended. SESPRS has negotiated with Salt, the award-winning restaurant at the Ritz-Carlton, to open for our attendees this evening. We encourage you to reserve your table early, to enjoy this unique culinary experience!

Tuesday, June 5

NEW FOR 2012: Scientific Poster Sessions on Monday and Tuesday morning, with opportunities for Q&A with the authors! More information is available at the Registration Desk.

* Separate registration required.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:00 AM</td>
<td>Registration Open</td>
<td>Salon 2 Foyer</td>
</tr>
<tr>
<td>6:30 AM – 7:30 AM</td>
<td>Continental Breakfast Exhibits Open</td>
<td>Salon 3</td>
</tr>
<tr>
<td>6:30 – 7:30 AM</td>
<td>Poster Session with Author Q&amp;A</td>
<td>Plaza 1</td>
</tr>
<tr>
<td>7:30 – 8:30 AM</td>
<td>Safety CME Presentations</td>
<td>Salon 2</td>
</tr>
<tr>
<td>8:30 – 9:20 AM</td>
<td>Panel: Patterns in Rhinoplasty</td>
<td>Salon 2</td>
</tr>
<tr>
<td>9:20 – 9:50 AM</td>
<td>Break, Visit Exhibits, and Posters</td>
<td>Salon 3, Plaza 1</td>
</tr>
<tr>
<td>9:50 – 11:00 AM</td>
<td>Facial Rejuvenation Panel</td>
<td>Salon 2</td>
</tr>
<tr>
<td>11:00 – 12:30 PM</td>
<td>“Problems and Pearls” Session, with Member Participation</td>
<td>Salon 2</td>
</tr>
<tr>
<td>12:00 – 1:00 PM</td>
<td>Residents Luncheon, with Dr. Mark Codner, ASAPS Traveling Professor</td>
<td>Open to all Residents, no fee required, R.S.V.P requested. See Registration Desk for details.</td>
</tr>
<tr>
<td>12:30 – 12:45 PM</td>
<td>Break, Visit Exhibits, and Posters</td>
<td>Salon 3, Plaza 1</td>
</tr>
<tr>
<td>12:45 – 1:40 PM</td>
<td>SESPRS Annual Business Meeting</td>
<td>Salon 2</td>
</tr>
<tr>
<td>2:00 – 3:30 PM</td>
<td>Meeting: “Operation Smile”</td>
<td>Amelia Room</td>
</tr>
<tr>
<td>6:30 – 7:30 PM</td>
<td>“Black Tie” Reception</td>
<td>Salon 1 &amp; 2 Foyer</td>
</tr>
<tr>
<td>7:30 – 11:30 PM</td>
<td>“Black Tie” Dinner and Dancing</td>
<td>Salon 1 &amp; 2</td>
</tr>
</tbody>
</table>

**Wednesday, June 6**

Open to registrants 16 and up. Separate registration required for exhibitors. Registrants are asked to confirm their attendance. See Registration Desk for details. For younger children, you may choose the Kid’s Night Out Program or other activities available through the hotel. Reservations are normally required at least 24 hours in advance.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM</td>
<td>Registration Open</td>
<td>Salon 2 Foyer</td>
</tr>
<tr>
<td>7:15–8:00 AM</td>
<td>Continental Breakfast Exhibits Open</td>
<td>Salon 3</td>
</tr>
<tr>
<td>7:30–7:45 AM</td>
<td>Update on 2011 SESPRS Research Grant and Presentation of Results</td>
<td>Salon 2</td>
</tr>
<tr>
<td></td>
<td><em>Sherry Collawn, M.D.</em></td>
<td></td>
</tr>
<tr>
<td>7:45–9:00 AM</td>
<td>Member and Resident Papers</td>
<td>Salon 2</td>
</tr>
<tr>
<td>9:00–10:00 AM</td>
<td>Presentation: The Electronic Medical Record</td>
<td>Salon 2</td>
</tr>
<tr>
<td>10:00–10:30 AM</td>
<td>Break, Visit Exhibits</td>
<td>Salon 3</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Exhibits Closed</td>
<td>Salon 3</td>
</tr>
<tr>
<td>10:30–11:30 AM</td>
<td>Health Care Reform Presentation</td>
<td>Salon 2</td>
</tr>
<tr>
<td></td>
<td><em>Review of the Tear Trough</em></td>
<td></td>
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<tr>
<td></td>
<td><em>Deformity: Ross Stutman, M.D., SESPRS Fellow</em></td>
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<tr>
<td></td>
<td><em>The Retaining Ligaments of the Face and Periorbital Region</em></td>
<td></td>
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<tr>
<td></td>
<td><em>Mohammed Alghoul, M.D., SESPRS Fellow</em></td>
<td></td>
</tr>
<tr>
<td>11:30–12:30 PM</td>
<td>Closing Remarks, Adjournment and Farewell Lunch</td>
<td>Salon 2 Foyer</td>
</tr>
<tr>
<td></td>
<td>Open to all registrants</td>
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</tr>
<tr>
<td>12:00 Noon</td>
<td>Registration Closed</td>
<td>Salon 2 Foyer</td>
</tr>
</tbody>
</table>

**NEW FOR 2012:**
Meeting: “Operation Smile”

Remember last year’s Upchurch Lecture presented by Dr. William Magee, Co-Founder of Operation Smile? Many of you will remember his inspiring presentation. Open to all registrants and families, this session hosted by Colette Dean should prove to be a fun way to review the “Operation Smile” program and ways through which SESPRS members and friends can help the cause!
RECREATIONAL EVENTS AND SPOUSE PROGRAM

Guests and spouses/family are eligible to attend all of the listed events. Several events require separate registration and/or have age restrictions. See the SESPRS Registration Desk for details related to any event.

<table>
<thead>
<tr>
<th>Saturday, June 2</th>
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<tbody>
<tr>
<td><strong>4:00–6:30 PM</strong></td>
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<tr>
<td><strong>6:30–8:00 PM</strong></td>
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</table>

Open to all registrants. Dress is “Ritz” Casual. Drinks and hors d’oeuvres will be served. Dinner on your own — reservations highly recommended.

<table>
<thead>
<tr>
<th>Sunday, June 3</th>
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<tbody>
<tr>
<td><strong>6:00 AM</strong></td>
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<tr>
<td><strong>7:00–10:00 AM</strong></td>
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<tr>
<td><strong>8:00–10:15 AM</strong></td>
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<tr>
<td><strong>10:45–12:15 PM</strong></td>
</tr>
<tr>
<td><strong>12:15–12:45 PM</strong></td>
</tr>
<tr>
<td><strong>1:00–5:00 PM</strong></td>
</tr>
<tr>
<td><strong>4:30–5:15 PM</strong></td>
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</table>

All Residents with posters on display are asked to attend.

<table>
<thead>
<tr>
<th>Monday, June 4</th>
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<tr>
<td><strong>6:30–10:00 PM</strong></td>
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</table>

Open to all registrants. Dress is Resort Casual. Transportation from the Ritz-Carlton to Walker’s Landing will begin at approximately 6:15 PM. Schedule subject to change. Check the Registration Desk for details.

* Separate registration required.
**Annual Golf Tournament**

Designed by Mark McCumber and Gene Littler, this Amelia Island golf course’s breathtaking landscape is as beautiful as it is challenging. Meticulously maintained greens, strategically bunkered fairways and the ever-shifting ocean breeze ensure no two rounds are ever the same.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>6:00 AM</td>
<td>Registration Open</td>
<td>Salon 2 Foyer</td>
</tr>
<tr>
<td>6:00 AM</td>
<td>Annual “Fun Run”</td>
<td>Ritz-Carlton Grounds</td>
</tr>
<tr>
<td>7:00–10:00 AM</td>
<td>Spouse Hospitality Continental Breakfast</td>
<td>Salt Restaurant</td>
</tr>
<tr>
<td>10:00–1:00 PM</td>
<td>Salt Cooking Class</td>
<td>Salt Restaurant</td>
</tr>
<tr>
<td>1:30 – 6:30 PM</td>
<td>Annual Golf Tournament</td>
<td>Golf Club of Amelia Island</td>
</tr>
</tbody>
</table>

Registration preferred but not required (no charge). Participants should meet in the lobby of the Ritz-Carlton at 6:00 AM.

Couples encouraged to attend. Separate registration is required. Limited to first 18 participants. See Registration for details and availability.

**Tuesday, June 5**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>6:00 AM</td>
<td>Registration Open</td>
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</tbody>
</table>

**Childrens Activities: “Kids Night Out”**

Designed for kids 5–12. Reservations must be made at least 24 hours in advance to guarantee availability. Contact the resort directly at 904.277.1100 to arrange for this service.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00–10:00 AM</td>
<td>Spouse Hospitality Continental Breakfast</td>
<td>Salt Restaurant</td>
</tr>
<tr>
<td>1:30–5:30 PM</td>
<td>Deep Sea Fishing Excursion, Aboard the Amelia Angler II</td>
<td>Ritz-Carlton Lobby</td>
</tr>
<tr>
<td>12:45–1:40 PM</td>
<td>SESPRS Annual Business Meeting</td>
<td>Salon 2</td>
</tr>
<tr>
<td></td>
<td>Separate registration required. Six participants per boat. Transportation will leave the Ritz-Carlton lobby at approximately 1:00 PM. Covers transportation, bait/tackle and gratuities. See Registration Desk for details and availability. Open to members only. End time is approximate.</td>
<td></td>
</tr>
<tr>
<td>2:00–3:30 PM</td>
<td>Meeting: “Operation Smile”</td>
<td>Amelia Room</td>
</tr>
<tr>
<td></td>
<td>Open to all registrants and families. End time is approximate.</td>
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</tr>
<tr>
<td>6:30–7:30 PM</td>
<td>“Black Tie” Reception</td>
<td>Salon 1 &amp; 2 Foyer</td>
</tr>
<tr>
<td></td>
<td>Open to registrants 16 and up. Separate registration required for exhibitors. See Registration Desk for details.</td>
<td></td>
</tr>
<tr>
<td>7:30–11:30 PM</td>
<td>“Black Tie” Dinner and Dancing</td>
<td>Salon 1 &amp; 2</td>
</tr>
<tr>
<td></td>
<td>Open to registrants 16 and up. Separate registration required for exhibitors. Registrants are asked to confirm their attendance. See Registration Desk for details. For younger children, you may choose the Kid’s Night Out Program or other activities available through the hotel. Reservations are normally required at least 24 hours in advance.</td>
<td></td>
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</table>

**Wednesday, June 6**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM</td>
<td>Registration Open</td>
<td>Salon 2 Foyer</td>
</tr>
</tbody>
</table>
NEW FOR 2012

Meeting: "Operation Smile"

Remember last year’s Upchurch Lecture presented by Dr. William Magee, Co-Founder of Operation Smile? Many of you will remember his inspiring presentation. Open to all registrants and families, this session hosted by Colette Dean should prove to be a fun way to review the “Operation Smile” program and ways through which SESPRS members and friends can help the cause!

Join us for the Annual Theme Dinner!

On Sunday, June 3rd, join us for a memorable experience at Walker’s Landing, located on the serene marsh side of the Omni Amelia Island Plantation, with stunning views of a peaceful, salt marsh teeming with wildlife. Situated on the Intracoastal Waterway, and surrounded by Spanish moss-draped live oaks, guests will enjoy the perfect backdrop for a relaxing evening, as well as a fantastic, authentic, low country boil. Dress is Resort Casual. Transportation will depart from the Ritz-Carlton starting at 6:15 pm.

Keynote Presentation: Charles Bierbauer

Charles Bierbauer, was for many years CNN’s senior Washington correspondent and a veteran reporter covering national and international affairs. He served as CNN’s senior White House correspondent for almost a decade during the Reagan and Bush Administrations.

Mr. Bierbauer will be providing us with some interesting insight into the upcoming presidential election.
### Saturday, June 2

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>4:00–6:30 PM</td>
<td>Registration Open</td>
<td>Seaside Room</td>
</tr>
<tr>
<td>6:30–8:00 PM</td>
<td>Welcome Reception</td>
<td>Oceanfront Lawn</td>
</tr>
</tbody>
</table>

Open to all registrants. Dress is “Ritz” Casual. Drinks and hors d’oeuvres will be served. Dinner on your own — reservations highly recommended.

### Sunday, June 3

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>6:00 AM</td>
<td>Registration Open</td>
<td>Salon 2 Foyer</td>
</tr>
<tr>
<td>6:30–7:30 AM</td>
<td>Continental Breakfast Exhibits Open</td>
<td>Salon 3</td>
</tr>
<tr>
<td>7:30–7:40 AM</td>
<td>Welcome from the Chair: Harold I. Friedman, M.D. Welcome: Cecily McCoy</td>
<td>Plaza 2</td>
</tr>
<tr>
<td>7:45–9:15 AM</td>
<td>ICD-10: A Complete Revamp Coming to Your Office Soon John Bishop PA-C, CPC, CGSC, CPRC</td>
<td>Plaza 2</td>
</tr>
<tr>
<td>10:15–10:45 AM</td>
<td>Break, Visit Exhibits, and Posters</td>
<td>Salon 3, Plaza 1</td>
</tr>
<tr>
<td>11:15–12:00 PM</td>
<td>Management of Spider Veins Terri Harper RN, Clinical Director SPA Medical</td>
<td>Plaza 2</td>
</tr>
<tr>
<td>12:15–12:45 PM</td>
<td>Break, Visit Exhibits, and Posters</td>
<td>Salon 3, Plaza 1</td>
</tr>
<tr>
<td>1:00–5:00 PM</td>
<td>Annual Tennis Tournament*</td>
<td>Ritz-Carlton Tennis Courts</td>
</tr>
<tr>
<td>6:30–10:00 PM</td>
<td>Theme Dinner Low Country Boil</td>
<td>Walker’s Landing, Omni Amelia Island Plantation</td>
</tr>
</tbody>
</table>

Open to all registrants who have registered for the Office Staff Program. See the SESPRS Registration Desk to register.

Transportation from the Ritz-Carlton to Walker’s Landing will begin at approximately 6:15 PM. Schedule subject to change. Check the Registration Desk for details.
Monday, June 4

6:00 AM  Registration Open  
Salon 2 Foyer

6:00 AM  Annual “Fun Run”  
Ritz-Carlton Grounds

Registration preferred but not required (no charge). Participants should meet in the lobby of the Ritz-Carlton at 6:00 AM.

7:00–8:00 AM  Continental Breakfast  
Salon 3
Exhibits Open

8:00–8:45 AM  The Electronic Medical Record, Why and How  
Plaza 2
Lindsie Cone, M.D.

8:45–9:15 AM  HIPPA with Teeth  
Plaza 2
Lindsie Cone, M.D.

9:15–10:00 AM  Technologies that Can Improve Your Bottom Line  
Plaza 2
Karen Zupko

10:00–10:20 AM  Skin Care, Facials and Chemical Peels  
Plaza 2
Celiste Arthur LME

10:20–10:45 AM  Update on Neurotoxins  
Plaza 2
Terri Harper RN

10:45–11:30 AM  Update on Facial Injectibles  
Plaza 2
Haley Wood MSN, WHNP, CPSN

11:20–11:40 AM  Break, Visit Exhibits, and Posters  
Salon 3, Plaza 1

11:30 AM  Adjournment

1:30–6:30 PM  Annual Golf Tournament  
Golf Club of Amelia Island

Separate registration required. Participants to meet at Golf Club of Amelia Island, just outside the front door to the Ritz-Carlton, at 1:30 PM. See Registration Desk for details.

Dinner on your own — reservations highly recommended. SESPRS has negotiated with Salt, the award-winning restaurant at the Ritz-Carlton, to open for our attendees this evening. We encourage you to reserve your table early, to enjoy this unique culinary experience!
Description

The Southeastern Society of Plastic and Reconstructive Surgeons 55th Annual Scientific Meeting is designed to deliver quality scientific and educational presentations which have been the Society’s hallmark since its beginning in 1957. This program is intended primarily for the education of plastic surgeons and others who have significant involvement within the broad spectrum of aesthetic and reconstructive Plastic Surgery. It is comprised of fundamental, intermediate, and advanced didactic material of interest and application to all attendees. Personal practice issues will be discussed along with safety management and medico-legal risk management in the operative theatre. An overview of the art and science of Plastic Surgery as well as new directions, trends and techniques.

Needs Assessment

Topics will be presented for diversifying learning opportunities and subtopic refinement following through with the Southeastern’s recent and ongoing emphasis on aesthetic and reconstructive surgery, particularly of the face, breast, and body. Based upon feedback from prior meetings, there is evidence of an ongoing need to maintain awareness and concentration on particular needs of the practicing Plastic Surgeon in the Southeast. The meeting theme, “The Science Behind the Art” strives to address topics of interest to the Membership, with the goal of preserving what the best of our “art”, while always looking for new and creative solutions to common problems.

Highlights of the 2011 meeting included an excellent facial rejuvenation panel, the Upchurch lecture by Dr. William Magee, in which he highlighted the powerful force medicine can exert as a tool for humanitarian action and political change, a panel on cleft lip nasal deformity moderated by Dr. Kevin Hagan, the annual Problems and Pearls session moderated by John McCraw, M.D., a breast augmentation panel moderated by Jack Fisher, M.D., a body contouring panel moderated by Dr. Onelio Garcia, and special patient safety and business-related presentations from Leroy Young, M.D. and Karen Zupko. In addition, there were great panels on various aspects of cosmetic medicine clef lip nose distributed among the always excellent Resident and Member papers.

In the post meeting survey, Members and Residents requested further education on the myriad options in breast augmentation, facial rejuvenation, and body contouring. And requests for information on new advancements in facial rejuvenation and reconstruction will be addressed at this meeting. There is also an ongoing desire for the latest in patient safety. Plans are for the always popular and educational Problems and Pearls Session to feature both reconstructive and cosmetic cases this year. A high-level training course on modern nasal reconstruction will provide additional CME.

Our Members have indicated that they prefer panel discussions and guest speakers and so the 2012 meeting will reflect that preference. Our post meeting survey also identified needs in managing the business side of the practice of plastic surgery. To address this, there will be a parallel office staff meeting held on two mornings. This non-CME program is designed to improve the experience of the plastic surgery patient, encourage team building, and improve the bottom line in these turbulent economic times.

The Southeastern has always placed a high regard on the development of future Plastic Surgeons. The coveted Glancy Award will be presented to the author of the best abstract by a plastic surgery resident. Member papers are also a part of our tradition. Those selected were blind graded to assure that no bias was introduced into the process.
Objectives

Upon completion of this program, residents-in-training and practicing plastic surgeons should be able to:

- Appreciate the latest techniques for superior results in body contouring for both massive and non-massive weight loss patients.
- Learn to identify and categorize cosmetic nasal deformities and apply balanced surgical solutions to them.
- Have a better understanding of the management of complex facial deformities.
- Gain an understanding of how to evaluate published information in plastic surgery using current evidence-based interpretations. How to integrate this information into your practice.
- Learn the science behind adipose derived stem cell grafts and how and why they work.
- Improve the safety of your patient care by preventing skin infections and understanding the risks of nicotine use.
- Appreciate the latest techniques and choices to rejuvenate the face with either operative or non-operative approaches.
- Learn about the latest regulations requiring transition to the electronic medical record and some of the options available to plastic surgeons.
- Understand the requirements for implementation of Health Care Reform and the resources provided by the American Society of Plastic Surgeons that can be used to assist.

Accreditation

The Southeastern Society of Plastic and Reconstructive Surgeons is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide Continuing Medical Education for physicians. The Southeastern Society of Plastic and Reconstructive Surgeons designates this educational activity for a maximum of 18 PRA Category 1 Credits, 2 of which have been designated as relating to patient safety education. The teaching course and Resident Luncheon offer an additional 2 hours CME and 1 hour of CME to qualified attendees respectively. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Disclosure/Conflict of Interest Statements

All faculty are required to complete a statement detailing any and all conflicts of interest and/or industry support. It is the policy of the Southeastern Society, consistent with the policies of the ACCME, that every author must complete a Conflict of Interest/Disclosure form or that author is not permitted to make a presentation at the meeting. We have printed and will verbally announce details as to any speaker who has made such a disclosure. The absence of any such affirmative statement of disclosure means that the faculty has submitted a complete disclosure statement, and has indicated that he/she has no conflicts/industry support to report. All faculty/participants have been instructed that if any unapproved or off label use of a product is to be referenced in a CME program presentation, the faculty member/participant shall be required to disclose that the product is either investigational or is not labeled for the usage being discussed. Questions from the floor must be preceded by a verbal disclosure of any relevant commercial interest by the questioner.
Meeting Room Rules
The meeting room is the focal point for the Southeastern’s educational sessions. These sessions may include sensitive and explicit patient photographs and material presented which are generally intended to be accessible only to health care professionals. With that understanding, we feel that it is not appropriate for small children to be present in the meeting room during the scientific sessions. We ask that all attendees recognize and observe this restriction. The Southeastern reserves the right to require any children or adolescents present in the meeting room to leave. In compliance with local standards, the meeting room will remain smoke-free at all times. Additionally, as a courtesy to the speakers and other attendees, please turn off all cell phones and pagers to their SILENT or OFF position. Individuals with special needs are asked to notify the Southeastern office in advance as to these needs.

Certificates of Attendance
To obtain your CME credit for this meeting, a completed evaluation form must be completed online. The link to this online form will be communicated to attendees prior to or following the sessions. Upon receipt of a properly completed evaluation form, a certificate of CME will be issued approximately six weeks following the meeting. In addition, credit hours will be reported to the American Society of Plastic Surgeons automatically as a courtesy to ASPS members.

Disclosures by Persons Responsible for Program Planning
The following persons are members of the Southeastern Executive Committee, Program Committee and Resident Competition Committee, which reviewed and scored abstracts and otherwise assisted the Program Chair, Dr. Harold Friedman, in selecting content and presenters. Each has completed a Disclosure/Conflict of Interest Statement, and all information on financial contacts with commercial sponsors and/or conflicts/industry support which was reported is indicated in a separate document distributed to all attendees. If a name appears with no additional information delineated, it means that this individual completed a disclosure and indicated that he/she had no financial contacts with commercial sponsors and/or conflicts/industry support.
2012 Executive Committee
William Byron Barber, M.D. (President)
Ann Ford Reilley, M.D.
Harold I. Friedman, M.D.
Henry C. Vasconez, M.D.
Kevin F. Hagan, M.D.
Walter L. Erhardt, Jr., M.D.
Braun H. Graham, M.D.
James C. Grotting, M.D.
David B. Drake, M.D.
Karen E. Wells, M.D.
Jorge I. De La Torre, M.D.
Robert J. Allen, M.D.
William C. Lineaweaver, M.D.
C. Scott Hultman, M.D.
John T. Lindsey, M.D.

2012 Program Committee
Harold Friedman, M.D. (Chair)
Ann Ford Reilley, M.D.
Detlev Erdman, M.D.
Bert Losken, M.D.
Mark Codner, M.D.
David Drake, M.D.
Jorge de la Torre, M.D.
Glenn Lyle, M.D.
Onelio Garcia, M.D.

2012 Resident Competition Committee
Jorge de la Torre, M.D. (Chair)
Monique Abner, M.D.
Jim Grotting, M.D.
Brian Rinker, M.D.
James Thompson, M.D.
Tom Zaydon, M.D.
Simeon Wall, M.D.
Robert Garza, M.D.
Jeff Marcus, M.D.
Sunday, June 3

Chair: James Wade, M.D.
Secretary: John Lindsey, M.D.

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>6:00 AM</td>
<td>Registration Open</td>
<td>Salon 2</td>
</tr>
<tr>
<td>6:30–7:30 AM</td>
<td>Continental Breakfast</td>
<td>Salon 3</td>
</tr>
<tr>
<td>7:30–7:35 AM</td>
<td>Invocation: Ann Ford Reilley, M.D.</td>
<td>Salon 2</td>
</tr>
<tr>
<td>7:35–7:45 AM</td>
<td>Presidential Welcome: Byron Barber, M.D.</td>
<td>Salon 2</td>
</tr>
<tr>
<td>7:45–8:00 AM</td>
<td>ASAPS, ASPS/PSEF and ABPS Annual Reports</td>
<td>Salon 2</td>
</tr>
<tr>
<td></td>
<td>American Society of Plastic Surgeons and Plastic Surgery Educational Foundation: Malcolm Z. Roth, M.D.</td>
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<td>American Board of Plastic Surgery: Barrett Noone, M.D.</td>
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<tr>
<td></td>
<td>American Society for Aesthetic Plastic Surgery: Leo McCafferty, M.D.</td>
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<tr>
<td>8:00–8:40 AM</td>
<td>Resident Paper Competition 1–4</td>
<td>Salon 2</td>
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**Resident Competition Paper #1**

Subcutaneous Talc Reduces Drain Duration and Wound Complications Following Panniculectomy and Subcutaneous Advancement Flaps During Ventral Hernia Repair

David Klima, M.D.
Stanley B. Getz, M.D.
Rita Britzenhoff, M.D.
Christin Carpenter, M.D.
B. Todd Heniford, M.D.

**Introduction:**

Wound complications in patients undergoing large ventral hernia repairs requiring extensive tissue dissection and panniculectomy (OVHR/PAN) occur in 18-50% of procedures. While not labeled for usage being discussed, this study evaluates a novel technique involving the application of talc to subcutaneous tissue of OVHR/PAN patients to reduce wound complications.

**Methods:**

Demographics, peri-operative data, and outcomes of OVHR/PAN patients were evaluated with a prospectively collected database from 1999-2010. Patients were divided into two groups; those who did not receive talc (NOTALC) and those who had subcutaneous talc applied prior to closure (TALC).
Results:
N=180 patients met inclusion criteria, with 74 in TALC group and 106 in NOTALC group. Demographics were statistically similar between groups (p<0.05), including mean age (55.7+/−13.2 v 53.5+/−11.6 years), ASA scores (2.6+/−0.66 v 2.5+/−0.5) and tobacco use (21% v 21%). BMI was significantly less in TALC group (33.6+/−8.9 v 37.3+/−8.8 kg/m2, p=0.03), but defect size was significantly larger (258+/−195 v 213+/−281cm2, p=0.02). The TALC group had a significant decrease in the rate of seromas requiring intervention from 20.8% to 2.7% (p<0.001), cellulitis from 39.6% to 20.5% (p=0.007) and need for oral antibiotics from 36.8% to 23.3% (p=0.05). the TALC group also had significantly earlier drain removal from 25.6+/−19.1 to 14.6+/−7.0 days (p<0.001). Controlling for BMI, the rate of seromas requiring intervention, cellulitis, oral antibiotics and drain duration remained statistically significant (p<0.05).

Conclusion:
The application of subcutaneous talc for OVHR/PAN patients demonstrated decreased rate of post-operative cellulitis, need for oral antibiotics, drain duration and seroma formation requiring intervention.

Resident Competition Paper #2
Cadaveric Study of the Posterior Pedicle Nasoseptal Flap: A Novel Flap for Reconstruction of Pharyngeal Defects and Velopharyngeal Insufficiency
Carlos Rivera-Serrano, M.D.
Ashley Lentz, M.D.
Leonard Furlow, M.D.

Background: The use of the posterior pedicle nasoseptal flap (NSF) for endoscopic reconstruction of skull base defects after expanded endonasal approaches was recently described. The NSF has been the workhorse for endoscopic reconstruction of medium to large defects with excellent outcomes and minimal flap failures. We present the cadaveric foundations of the use of the NSF for reconstruction of soft palate and pharyngeal defects, and surgical treatment of velopharyngeal insufficiency

Study design: Feasibility. Cadaveric study

Methods: 7 cadavers were used. Posterior pedicle NSF were endoscopically harvested and transposed. One specimen was cut in the mid-sagittal plane to demonstrate the relationships of the NSF with nasopharyngeal and oropharyngeal structures. Photographs were taken using 0° and 30° rod-lens endoscopes coupled to a high definition camera.

Results: A total of 9 NSF (bilateral in two specimens) were transposed into the nasopharynx and oropharynx. The most anterior aspect of the NSF reached several millimeters inferior to the uvula in all specimens (Fig 1-3, 5). 6 flaps were sutured transorally to the posterior pharyngeal wall (Fig 2) and 3 were sutured to a defect of the soft palate (Fig 4). The width of a fully harvested flap (harvesting of most septal mucosa) was more than twice the width of the posterior naso/oropharyngeal wall in all specimens. NSF were easily tailored endoscopically and transorally with standard instrumentation to fit the defect.
**Conclusions:** The NSF completed proof-of-concept for transposition into nasopharynx and upper oropharynx, and it is a potential alternative for pharyngeal reconstruction and surgical treatment of velopharyngeal insufficiency in patients in whom traditional flaps are not available.

**Figures**

![Figure 1](image1.png)

Figure 1. Transposition of posterior pedicle nasoseptal flap. Sagittal cuts of human cadaveric head. A. Outline of posterior pedicle nasoseptal flap in nasal septum. White arrow = pedicle. Intermittent black line = outline of flap septal incisions. B. Transposition of flap into naso/oropharynx. The flap was outlined in black to enhance contrast with surrounding tissues. White arrow = flap. Black arrow = tip of uvula. Please note how the most distal aspect of the flap is inferior to the tip of the uvula if fully harvested.

![Figure 2](image2.png)

Figure 2. Transposition of posterior pedicle nasoseptal flap., intraoral pictures. A. The NSF is transposed and pulled into the oropharynx. Black asterisk = base of tongue. B. The NSF flap secured in place to the posterior pharyngeal wall with sutures. White arrow = uvula. C. Close up.
Figure 3. Transposition of posterior pedicle nasoseptal flap, intraoral pictures. Red rubber catheters were used to retract the soft palate anteriorly. The NSF was transposed and placed along the soft palate and uvula for demonstration purposes. In C, the flap completely covers the soft palate and uvula if pulled anteriorly (compare with B).

Figure 4. Transposition of posterior pedicle nasoseptal flap, intraoral pictures. In this specimen, the soft palate / uvula complex was resected along the dashed line (A) and the NSF was trimmed and sutured to “replace” the soft palate for demonstration purposes (B).
Figure 5. Transposition of posterior pedicle nasoseptal flap. Sagittal cuts of human cadaveric head. Sagittal cuts of human cadaveric head. In A (oblique view), the NSF was transposed. In B, the NSF was folded to resemble the shape of the soft palate for demonstration purposes (the NSF was folded in a way that the mucoperichondrium/mucoperiostium of the nasal and oral layers were opposed to each other). In both figures, the flap was outlined in black to enhance contrast with surrounding tissues. Red dashed line (only in A) = pedicle. Black arrow = Soft palate uvula. White arrow = NSF. Asterisk = Base of tongue.

Resident Competition Paper #3

Targeting Angiotensin II Receptors to Treat Scar Contracture: Angiotensin II stimulates Fibroblast Induced Dermal Scar Contracture, Independent of Alpha Smooth Actin Expression.
Tosan Ehanire, M.D.
Jennifer Bond, M.D.
Licheng Ren, M.D.
Lei Chen, M.D.
Howard Levinson, M.D.

Introduction:
Scar contractures affect approximately 40% of burn patients. The mechanisms of scar contracture need to be better understood to develop effective therapeutic interventions. Previous research has demonstrated that scar contractures are mediated by migration and contractility of alpha smooth muscle actin (ASMA) expressing myofibroblasts but the signals that initiate cell activity are unknown. Here we sought to determine if angiotensin II (AngII) promotes scar contracture and whether the mechanisms are dependent on myofibroblasts or protomyofibroblasts (which do not express ASMA).

Methods:
Human scar tissue (n=10) and surrounding normal tissue were stained for AngII receptors (ATr), ATr1 and ATr2. Excisional wounds were created on ASMA knockout (KO) and wild type (WT) mice and animals were treated with AngII (3mg/kg/d) +/-losartan (50mg/kg/d). Contractures were analyzed by gravitational planimetry, Masson’s Trichrome, Ki67, CD31, and qRT-PCR (n=8, p<0.05). AngII stimulation of fibroblast population collagen lattice (FPCL) assay was conducted with pharmacological antagonism of ATr1 and ATr2. ATr1 expression was increased in human scar dermal tissue and absent in normal tissue.
Results:
AngII stimulated contractures were similar in KO and WT mice. The ATr1 antagonist, Losartan inhibited in vivo contracture by >40% (p < 0.05). AngII stimulated FPCL contraction was inhibited by ATr1 antagonism and not ATr2 antagonism. AngII promoted contractures by the activation of protomyofibroblasts and not myofibroblasts via ATr1.

Conclusion:
The data here propose that AngII signaling has a role in the pathogenesis of dermal scar contracture and targeting AngII signaling may prevent scar contractures.

Resident Competition Paper #4

Interfrontal Angle for Characterization and Grading of Trigonocephaly in Metopic Synostosis
Alexander Allori, M.D.
Ryan Kellogg, M.D.
Gary Rogers, M.D.
Jeffrey Marcus, M.D.

Background:
Because the metopic suture normally closes during infancy, the diagnosis of metopic synostosis has been largely subjective and based predominantly on the presence and severity of trigonocephaly. Most clinicians intuitively agree on observation for the mildest cases and surgical intervention for severe cases. However, there exists a difficult “gray zone” of moderate-severity cases for which appropriate management is not so obvious. Previous attempts at objective characterization of phenotypic severity have proven either imprecise or impractical. Therefore, the purpose of this study was to develop and validate a practical, accurate, and reliable method to quantitatively assess the severity of trigonocephaly using readily available computed tomographic (CT) data.

Methods:
Clinical and administrative databases were queried to identify sequential patients referred for evaluation of possible metopic synostosis. Age-matched comparative controls were selected from a previously described pediatric craniofacial normative database. Craniofacial CT data were assessed as two-dimensional axial series, three-dimensional reconstructions, and multiplanar reconstructions. Six methods were then evaluated for quantifying the interfrontal angle (IFA). Each method was critically appraised with respect to accuracy, precision, and practicality, and the best method was chosen. A modified Delphi panel of blinded expert reviewers was then convened in order to fine-tune the IFA thresholds differentiating normal anterior head shape from mild, moderate, and severe trigonocephaly.
Results:
Thirty-six sequential metopic cases and 107 normative controls were selected for analysis. Of the six methods assessed, the most reliable method involved measurement of the IFA formed between the anterior-most point of the cranium and the supraorbital notches, using multiplanar reconstructions reoriented relative to the Frankfort horizontal. By this method, average normal and metopic IFA were found to be 144.8°±8.5° (range 125.3°-159.7°) and 117.74°±9.0° (range 92.3°-136.8°), respectively. Intra-observer and inter-observer variances were 0.90 and 0.94, respectively. Receiver-operator-curve analysis showed the area under the curve of 0.986, indicative of an excellent diagnostic test. There was excellent correlation with severity ranking scores. Each IFA diagnostic threshold yielded a corresponding sensitivity and specificity – e.g., setting the diagnostic threshold as 137° would have 100% sensitivity and 76% specificity, whereas 130° would have 94% sensitivity and 94% specificity. Specific values recommended by expert panel consensus for stratifying normal from mild trigonocephaly, mild from moderate, and moderate from severe, are presented. Conclusion: Measurement of the IFA as described is an accurate, precise, and practical quantitative measure for the diagnosis of trigonocephaly. Expert reviewers demonstrated good consistency in ranking mild and severe cases, but varied considerably in their ranking of moderate cases. The IFA allowed this “gray zone” to be narrowed considerably.

Member Paper Session, with Discussion
Chair: James Wade, M.D.
Secretary: John Lindsey, M.D.

Safety and Efficacy of Outpatient Lower Body Lifting
Bruce Mast, M.D.
Hossein Nasajpour, M.D.
Patrick Buchanan, M.D.

PURPOSE:
Lower body lifting is an operation conventionally done as an inpatient. This study’s purpose is to discern if outpatient lower body lifting can be done safely and effectively.

METHODS:
All lower body lift patients treated by the senior author from July 2000 through May 2011 were studied, in a standard chart review.

RESULTS:
A total of 35 patients were studied; 22 had an additional contouring procedure. There were 19 outpatients and 16 inpatients. Thromboembolic prophylaxis was provided using sequential compression boots and Heparin or Lovenox given preoperatively and continued for 2 days postoperatively. Pertinent data is to the right.
<table>
<thead>
<tr>
<th></th>
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<th>Inpatient</th>
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<tr>
<td>#</td>
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<td>16</td>
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<tr>
<td>Age</td>
<td>42.75 (25-60)</td>
<td>40.8 (21 – 61)</td>
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<td>BMI*</td>
<td>24.99 (20.2—30.5)</td>
<td>30.89 (22.99—39.6)</td>
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<td>136 (27 to 591)</td>
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The Transblepharoplasty Subperiosteal Midface Lift: a 13-year Review

Jeffrey Cone, M.D.
Ernesto J. Ruas, M.D.
Moises L. Salama, M.D.
Sergio Alvarez, M.D.
David J. Smith Jr., M.D.

**Purpose:**
To introduce a reliable technique for midface rejuvenation and to review the associated short- and long-term outcomes. The technique seeks to restore youthful volume to the midface by employing a subperiosteal release of the cheek, four-point bony suspension along the orbital rim, and post-septal fat redraping.

**Methods:**
This is a retrospective review of a single surgeon’s subperiosteal midface lifts between 1998 and 2011, and includes 137 patients (average age = 53 ± 24). Standardized medical records and pre- and post-operative photographs were reviewed for demographics, co-morbidities, concomitant procedures, complications and outcomes.

**Results:**
The most common short-term post-operative sequelae were chemosis (38%), transient scleral show (21%), and lagophthalmos (8%). The two indications for reoperation included a hematoma managed with evacuation, and a minor revision to the subciliary scar. No cases of ectropion occurred.

**Conclusion:**
The described technique optimizes control of the suspension vector for the midface subunit, provides stable fixation to the orbital rim, and does so without requiring alteration to the lateral canthus. It represents an effective means for rejuvenating the lower eyelids and cheek while maintaining a low complication rate.
The Successful Separation of Pyopagus Conjoined Twins
Robert D. Wallace, M.D.
George Burruss, M.D.
Uzomo Ben, M.D.

Introduction:
Conjoint twins constitute a fascination to surgeons and others alike. While the incidence remains rare, advances in surgery, anesthesia and critical care have made separation of these twins accomplishable though still a complex feat. Prior to August, 2011, five sets of conjoined twins were treated in our hospitals. None were of the Pygopagus type and survival of both twins was achieved in only one case.

Methods:
This paper gives a brief overview of the first five cases of conjoined twins in and chronicles the management of the sixth case (first pyopagus case) from the mother’s prenatal course, caesarian delivery and neonatal care, up to the surgical separation at 6 months age. Separation was initially postponed because of significant cardiac anomalies in one twin. The planning and execution involved four surgical specialties, anesthesiologists and operating room staff in two separate teams. In anticipation of a significant sacral soft tissue defect post-separation, tissue expanders were inserted in both twins’ backs 5 weeks prior to the separation.

Results:
Separation was successful with survival of both twins. Triangular-shaped opposing hip skin flaps were used for sacral defect closure, each harvested from one twin and transposed to the other. The expanded back skin also contributed to the wound closure.

Conclusion:
A multidisciplinary team approach with careful planning, rehearsal and execution was the key to success.

Turn on the Lights: Prospective, Before and After Cohort Study to Assess the Efficacy of Laser Therapy on Hypertrophic Burn Scars
C. Scott Hultman, M.D.

Introduction:
Hypertrophic burn scars produce significant morbidity, including itching, pain, stiffness, and contracture. Best practices for management continue to evolve. Lasers have recently been added to treatment algorithms, but indications and efficacy have not been fully defined. We studied the impact of laser therapies on hypertrophic burn scars.

Methods:
We conducted a prospective, before-after study in burn patients with hypertrophic scars. Procedures were performed > 6 months after burn injury and were repeated monthly. The pulsed-dye laser was used for pruritis and erythema, whereas the fractional CO2 laser was used for stiffness and abnormal texture. All procedures were performed in the OR with anesthesia.
Outcomes: 1) Vancouver Scar Score (VSS)(objective changes in pigmentation, erythema, pliability, height; range 0-15) and 2) UNC Scar Scale (UNCSS) (subjective changes in pain, itching, tingling, stiffness; range 0-12). Before-after scores were compared by Student’s T test, with significance assigned to p values < 0.05.

Results:
During 2011, we treated 147 patients (mean age, 26.9 years; mean TBSA, 16.1%) over 415 sessions (2.8 sessions/patient), including PDL (n=327) and CO2 (n=139), mean surface area 83 cm2. Etiology included flame (75), scald (37), other (35). Treatments occurred 16 months (median) and 48 months (mean) after burn injury. VSS decreased from 10.4 (SD 2.4) to 5.2 (SD 1.9) (p<0.0001). UNCSS decreased from 5.4 (SD 2.5) to 2.1 (SD 1.7) (p<0.0001). Mean length of follow-up was 4.7 months.

Conclusion:
Laser therapies significantly improve both the signs and symptoms of hypertrophic burn scars, as measured by objective and subjective instruments.

An Evaluation of Facial Fractures in the Elderly Population. Does Age Make a Difference?
Jeffrey Marcus, M.D.
Dunya Atisha, M.D.
Ed Ruane, M.D.
Alex Allori, M.D.
Detlev Erdmann, M.D.

Purpose:
As the US population ages and as life expectancy increases, physicians need a better understanding of the differences that may exist in the presentation and management of maxillofacial fractures in the older population.

Methods:
A retrospective cohort study was performed on patients who sustained a facial fracture at a level one trauma center from 2001 to 2011. The older patient population was defined as those ≥ 65 years of age. Descriptive statistics were used to evaluate clinical outcomes.

Results:
2,139 adults sustained at least one facial fracture; 233 were ≥ 65 years of age (mean= 77) and 1906 were younger (mean= 35) than 65. Older females and younger males had a higher incidence of facial fractures (p<0.002). Older patients were more likely to fall and younger patients were likely to undergo assaults, MVCs, or sports related injuries (p<0.0001).

Although nasal fractures were significantly more common in the older population (p<0.001), older patients had a higher incidence of maxilla and orbital floor fractures (p = 0.016 and p= 0.012) and a lower incidence of mandible and nasal fractures compared to the younger population (p = 0.04 and 0.02). The older population also had a significantly lower rate of operative repair (16% and 43%, p<0.001) and adverse events (p=<0.0001).
Conclusion:
The analysis reveals that older patients are more likely injured by low energy mechanisms and are more likely to suffer fractures of the upper mid face. These results are also consistent with the morphologic changes that occur in the aged face.

The Impecunious Treatment for Chronic Paronychia and Ingrown Fingernails
Wyndell Merritt, M.D.

Introduction:
Topical gentian violet has long been recognized as being lethal to Staph aureus and Candida albicans by dermatologists and pediatricians. Standard treatment for chronic paronychia has been surgical by resecting the proximal nail or the eponychium. The usefulness of topical gentian violet has not been reported.

Materials and Methods:
For the past 30 years, chronic paronychia patients referred for surgery have been treated with topical gentian violet by this surgeon, an estimated 150 patients, applied with a Q-Tip daily for 7—10 days. None required surgery.

Discussion:
Flatt¹ suggested chronic paronychia was caused by small portions of dead fingernail acting as a foreign body beneath the eponychium. He identified Staphylococcal aureus as the usual primary infection, with Candida albicans as the secondary colonization. Gentian violet is known to be effective against gram-positive bacteria (including MRSA²) and thrush.

Results:
All patients during this long interval had paronychia correction without surgery. If any had recurrence, they either treated it themselves (probably) or went elsewhere.

Conclusion:
The typical chronic paronychia patient will respond to topical gentian violet dye treatment and this inexpensive method should be attempted prior to the morbidity of surgery.

References:
Mr. Bierbauer was for many years CNN’s senior Washington correspondent and a veteran reporter covering national and international affairs. As a CNN correspondent, Bierbauer reported on five presidential campaigns and served as CNN’s senior White House correspondent for almost a decade during the Reagan and Bush Administrations. He has traveled with American presidents to all 50 states and more than 30 nations.

He started his commercial broadcast career as a radio reporter for WKAP radio in Allentown, Pennsylvania, in 1963. He also worked in print journalism, writing for The Morning Call in Allentown. He was a reporter with the Associated Press in Pittsburgh, Pennsylvania (1967-68) and a correspondent in Bonn for the Chicago Daily News. Bierbauer was an overseas correspondent for ABC News (1977-81), first as Moscow bureau chief and later as the Bonn bureau chief. Prior to that, he worked in Philadelphia, London, Bonn and Vienna as a correspondent for Westinghouse Broadcasting. He worked for CNN for 20 years. In 2001 he was reporter and producer for a Discovery Channel documentary on the September 11, 2001 attacks. In 1997, he won an Emmy for anchoring CNN coverage of the 1996 Olympic Park bombing in Atlanta. He also is a recipient of the ACE Award from the Association for Cable Excellence and the Overseas Press Club Award for his reporting of the Yom Kippur War.

Bierbauer became the first dean of the newly merged College of Mass Communications and Information Studies at the University of South Carolina in July 2002. He is currently the dean of The School of Journalism and Mass Communication at The University of South Carolina.
Analysis of Acellular Dermal Matrix Integration During Tissue Expander Breast Reconstruction in a Clinically Relevant Animal Model

Onelio Garcia, M.D.
Jeffrey Scott, M.D.

**Purpose:**
Acellular dermal matrix (ADM) has been used extensively in breast reconstruction (BR) since 2004. Numerous authors have reported on the safety, efficacy and improved aesthetic outcomes of BR using ADM. However, little has been reported on the dynamics of ADM integration when used specifically in BR. Rapid ADM tissue integration has been reported in the rat model. These studies provide limited clinically-relevant information for BR, as they do not accurately model the environment in which ADM is typically used. Therefore, our objective was to develop a clinically-relevant model using the Yorkshire Pig (Y-Pig), which more accurately simulates a BR.

**Methods:**
Bilateral BR was performed on 18 Y-Pigs by subpectoralis implantation of t-expanders and ADM. Tissue integration/vascularization was evaluated via photographic, microcirculatory, and histological analysis at 4, 8, and 12 weeks.

**Summary:**
Microcirculatory analysis revealed early ADM angiogenesis at 4 weeks on the skin flap surfaces only, well formed vasculature on both surfaces at 8 weeks and detectable flow at 12 weeks. Histological analysis also confirmed progressive ADM angiogenesis over time via positive staining for von Willebrand factor. A reduction in the host inflammatory response between 8 and 12 weeks coincided with an increase in fibrous tissue integration.
**Conclusion:**
We have developed a clinically-relevant, animal model of BR, which allows for the in vivo evaluation of the tissue expander/ADM environment over time. Based on our experience with this model, we conclude that ADM vascularization in BR is a significantly slower process than previously reported in models not relevant to BR.

**Breast Reconstruction with Human Acellular Dermal Matrix and Tissue Expanders: Outcomes in Patients Receiving Radiation**
W. Glenn Lyle, M.D.

**Introduction:**
Human Acellular Dermal Matrix (HADM) has been used extensively in conjunction with tissue expanders (TE) in breast reconstruction. Purported benefits include improved aesthetic outcome by greater preservation of breast shape and less capsular contracture. Capsular contracture after radiation (XRT) is very common. One benefit of HADM may be decreased CC. This retrospective study sought to evaluate results after TE and HADM reconstruction in the face of irradiation.

**Methods:**
Records from patients reconstructed between November 2011 to October 2012 were examined. There were 241 patients and 354 TEs. Additional risk factors included obesity (18.9%), smoking (14.9%), chemotherapy (44.9%). Complications included: seroma 10%, skin necrosis 10.8%, and expander loss 5.4%.
**Results:**
69 of the 241 patients received either preoperative (14) or postoperative XRT (55). Acute expander loss occurred in 16% of patients with XRT and versus 2.3% of patients without XRT. 18.8% of XRT patients required a flap procedure to salvage the reconstruction, the majority for TE or implant losses. Moderate to severe capsular contracture (Grade III/IV) occurred in an additional 14.5% of patients after permanent implant placement. These patients required additional procedures to improve results. Acceptable results -as judged by the surgeon and patient occurred in 67% of patients without additional procedures.

**Conclusion:**
Radiation therapy causes significant complications in TE reconstruction. The use of HADM does not obviate all of these problems but favorable outcomes can be expected in the majority of patients. Delaying reconstruction until after radiation remains an acceptable option, however these patients usually require a flap. Immediate reconstruction with TEs and HADM can decrease the need for a flap.

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**The Use of Dermal Autografts in Tissue Expander Breast Reconstruction**
*Brian Rinker, MD, FACS*

Acellular dermal matrices (ADMs) are a useful adjunct in breast reconstruction but add cost to the procedure and have been associated with wound healing and infectious complications. Dermal autografts can be used to provide lower pole coverage during tissue expander placement in select patients. The purpose of this study is to review a series of patients who underwent breast reconstruction using tissue expanders and dermal autograft to determine if the technique represents a viable alternative to ADM-assisted breast reconstruction.

**Methods:**
Between July, 2010 and October, 2011, 16 patients underwent breast reconstruction using tissue expanders and dermal autograft. Patients ranged in age from 41 to 66 years (median 51 years). Ten patients had bilateral reconstruction, six had unilateral (26 breasts total). 11 patients underwent immediate reconstruction, four were delayed, and one had a combination. Autografts measured 13 cm x 8 cm and were harvested by wide excision of a preexisting abdominal scar. In 15 patients, a low transverse scar was used, and in one patient a vertical midline scar was used. Autografts were harvested by deepithelialization followed by excision in the subcutaneous plane. Harvest and preparation time were recorded. Hospital and clinic charts were accessed to record demographic data, body mass index, medical and smoking history, cancer stage, initial and final fill volumes, and number of expansions. Minor and major complications were recorded. Major complications were defined as those requiring readmission or reoperation. Patients rated their satisfaction with the “appearance of the scar” on a seven-point scale.
Results:
Follow up ranged from 6 to 16 months (mean 10 months). Common co-morbid conditions included hypertension (n=10) and hyperlipidemia (n=5). Three patients were smokers. There were seven non-smokers and six former smokers. Mean BMI was 30.5 (range 19.1 to 48.8). Nine patients were obese (BMI >30). 13 patients had invasive ductal carcinoma, two had high grade DCIS, and one patient had lobular carcinoma. Three patients underwent chemotherapy between reconstructive stages, no patient required radiation. The mean time of autograft harvest was 38 minutes. The mean initial fill was 190 cc, and the average number of expansions was 3.5. There were no implant losses or other major complications. There were three minor complications (19%). Initial expander fill, number of expansions, and complication rate were comparable to historical values for ADM-assisted breast reconstruction. 14/16 patients (88%) rated satisfaction with their scars as 7 (very satisfied) on a 7-point scale. Two patients gave a rating of 6. At tissue expander removal, all autografts were found to be fully incorporated and indistinguishable from the remainder of the capsule.

Conclusions:
The use of dermal autograft in tissue expander breast reconstruction offers the advantages of ADM, without the associated expense. The technique adds minimally to the operative time and morbidity, is associated with a low rate of complications, and represents a viable alternative to ADM-assisted breast reconstruction in patients who wish to avoid tissue of cadaveric or animal origin.

Aesthetic Outcomes of Acellular Dermal Matrix Use in Tissue Expander and Implant Based Reconstruction
Clay Forsberg, M.D.
David Kelly, M.D.
Stephanie Mastrangelo, M.D.
Lisa David, M.D.
Malcolm Marks, M.D.

Purpose:
Modifications of traditional techniques utilizing total submuscular reconstruction (TSR) for implant based breast reconstruction to create an inferolateral sling with acellular dermal matrix (ADM) aim to create a more natural implant pocket and superior aesthetic results. Our objectives were to assess aesthetic outcomes when using ADM in breast reconstruction.

Methods & Materials:
We identified 122 patients who underwent implant breast reconstruction from 2005-2009 and had adequate follow-up and photographs. ADM was used in 37 patients. Demographic information, complications, reoperations, and aesthetic outcomes were compared for patients in whom ADM was utilized with those who had TSR. Five aesthetic outcomes were scored 1-5 (5 best) by our 6 attending surgeons.
Results:
Demographics and comorbidities were similar. Infection rates in patients with ADM was 16.2% and 5.9% in TSR patients (p=0.09). Capsular contracture rates were 8.1% in ADM and 23.5% in TSR (p=0.048). Other complications were similar. Aesthetic scores were: Natural Contour (ADM – 3.36, TSR 3.02, p = 0.0001), Symmetry of Shape (ADM 3.57, TSR 3.27, p = 0.005), Symmetry of Size (ADM 3.68, TSR 3.42, p = 0.002), Position on Chest Wall (ADM 3.75, TSR 3.45, p = 0.004), Overall Aesthetic Appearance (ADM 3.56, TSR 3.20, p=0.0001).

Conclusions:
For all 5 aesthetic parameters evaluated by the attending surgeon evaluators, the ADM group scored significantly better. Similar findings were seen in evaluations done by residents and medical students, suggesting ADM confers a significant advantage in aesthetic outcomes for breast reconstruction.

Rethinking NAC Tattoo. A New Technique with Superior Results
Michael Cormican, M.D.
Misti West, M.D.
Eric Halvorson, M.D.

Introduction:
We present a new technique for tattoo-only nipple-areola complex (NAC) reconstruction that offers aesthetically superior results and has led to an increase in the number of women choosing tattoo-only NAC reconstruction in our practice.

Methods:
Patients undergoing NAC reconstruction from January 2009 through July 2011 were reviewed. This timeframe provided equal time periods before and after the introduction of the new technique.

Technique:
The technique is essentially the inverse of commonly performed NAC tattoo (Fig. 1). The areola is created according to patient preference in diameter and color. Instead of a darker inner circle to create the appearance of a nipple, a lighter circle is created with a dark border (Fig. 2). For patients who undergo surgical nipple reconstruction, only the areola is tattooed (Fig. 3)

Results:
From January 2009 to April 2010, 81 women underwent NAC reconstruction at our hospital. Twenty-six (32%) chose tattoo-only and 55 (68%) chose surgical NAC reconstruction. From April 2010 to July 2011, 122 women underwent NAC reconstruction. Fifty-nine (48%) chose tattoo-only and 63 (52%) chose surgical NAC reconstruction. A 52% increase in patients choosing tattoo-only NAC reconstruction was noted.
Discussion:
Traditional coloring techniques for NAC tattoo ignore the artistic principles of light and shadow to create depth on a two-dimensional surface. The technique presented results in a more realistic and three-dimensional reconstruction that can look better than surgical NAC reconstruction and standard tattoo (Fig. 4)

Figures:

Figure 1. Result of NAC reconstruction using standard tattoo technique. The nipple is darker than the areola. The result is two-dimensional and lacks depth.

Figure 2. Result of NAC reconstruction using new tattoo technique. The nipple is lighter than the areola with a darker rim, creating a sense of depth and three dimensions.
Figure 3. Result of NAC reconstruction using a CV flap and new tattoo technique. The nipple is not tattooed and mimics the contralateral native NAC.

Figure 4. Result of NAC reconstruction using a CV flap and standard tattoo technique. Although a nipple has been created, the result is less three-dimensional than that obtained using the new tattoo technique (see Figs. 2 and 3).
The Influence of Silicone Gel Bleed on Capsular Contracture. A Generational Study

Hunter Moyer, M.D.
Bahair Ghazi, M.D.
Albert Losken, M.D.

Introduction:
Capsular contracture has multiple causes all of which lead to increased inflammation and scarring. There have been four generations of silicone breast implants, the latest are filled with a cohesive gel touted by the manufacturers to decrease capsule formation. No independent data exists to support this claim.

Methods:
Eight Gottingen swine were each implanted with eight 50cc custom gel implants (Mentor Corporation, Santa Barbara). In Phase One of the study, the implant shells were photo-chemically altered to produce a low bleed shell or a high bleed shell to simulate a generation II implant. In Phase Two, generation III and the newest generation IV (cohesive gel) devices were implanted. Half the implants were punctured with a 3mL punch biopsy to simulate a ruptured implant. Capsule and implant specimens were harvested at one and three months and analyzed with a Bose strain gauge. Intra-capsular fluid was tested for silicon levels with atomic emission spectrometry. Histology was prepared with H&E, Masson’s TriChrome and alpha-smooth actin immunohistochemistry stains.

Results:
Gel bleed correlated with capsule stiffness in a dose-dependant manner (p<0.05). Highbleed generation II implants had the stiffest capsules, and non-ruptured generation III implants the softest. Histologic examination revealed an inner layer of spindle-like cells and non-collagen protein in the most contracted capsules.

Discussion:
There is a dose-dependant relationship between silicone gel bleed and capsule compliance that is independent of the cohesivity of the silicone. A spindle-like, alpha-smooth actin positive layer within the capsules is seen in the most contracted capsules.

Figure 1. Quantitative assessment of silicone levels showing a dose-dependant relationship with capsule stiffness (A). Dynamic Compression Curves of implant/capsule specimens determined on a Bose EnduraTec Strain Gauge (B).

Figure 1. Quantitative assessment of silicone levels showing a dose-dependant relationship with capsule stiffness (A). Dynamic Compression Curves of implant/capsule specimens determined on a Bose EnduraTec Strain Gauge (B).
Red Breast Syndrome in Post Mastectomy Breast Reconstruction with Acellular Dermal Matrix: Etiology, Treatment, and the Emergence of AFB as an Often Unrecognized Pathogen of This Condition
Orlando Cicilioni, M.D.

Introduction:
Red Breast Syndrome is a term used to describe an erythematous skin reaction developing post mastectomy and reconstruction with tissue expanders and Acellular Dermal Matrix (ADM). The condition often produces a slow, smoldering course the cultures negative and fails to respond to antibiotic therapy.

Methods:
The etiology of this condition has been perplexing to many physicians, and debates arise as to whether this represents an allergic reaction or true infection of the skin or prosthesis. Nevertheless, being that many patients are on a time limited schedule after mastectomy surgery due to the need for beginning chemotherapy or radiotherapy, the plastic surgeon is often faced with making a decision. Often the ultimate solution is removal of the prosthesis. Further investigation into the etiology and solution is warranted. We will try to elucidate the differential diagnosis of Red Breast Syndrome, potential causes and treatment plans, and to further define the emergence of Acid Fast Bacilli as an often undetected cause of this condition. Subsequently, we will present a series of six cases of late AFB infections occurring over an 8 year period in patients who underwent reconstruction, along with some long-term patient outcomes after treatment. We will also make suggestions on antibiotic prophylaxis for implant cases involving ADM to help reduce the incidence of this condition, inviting commentary from an infectious disease specialist.

8:30–9:40 AM Panel Presentation: Facial Reconstruction
Moderator: Thomas Biggs, M.D.

How to Do a Revision of a Failed Nasal Reconstruction
Fred Menick, M.D.

Reconstruction of the Upper Eyelid
Mark Codner, M.D.

Orbital Mal-Positions
Tony Wolfe, M.D.

Microsurgical Peri-Orbital Reconstruction
Eduardo Rodriguez, M.D.

9:40–10:35 AM Resident Paper Competition 5-8, with Discussion
Chair: Scott Corlew, M.D.
Secretary: Hamid Massia, M.D.
Resident Competition Paper #5

Objective Parameters Predictive of Mastectomy Flap Necrosis Utilizing Laser-Assisted Indocyanine Green Angiography (LA-ICGA)

Megan Jack, M.D.
Michel Samson, M.D.
Martin Newman, M.D.

Purpose:
Laser-Assisted Indocyanine Green Angiography (LA-ICGA) is an established technology for evaluating in vivo tissue perfusion. Previously we have shown the utility of LA-ICGA in predicting mastectomy flap necrosis in immediate breast reconstruction and reducing mastectomy flap necrosis rates using intraoperative imaging to intervene on at-risk flaps. We now continue our work, using SPY-Quantification® technology to determine objective, numeric skin perfusion rates predictive of flap outcomes.

Methods:
Following IRB approval, we collected data on 10 consecutive mastectomy flaps without necrosis and compared them to a consecutive group of flaps with necrosis, matched for age, Body Mass Index (BMI), and comorbidities. The LA-ICGA images were evaluated with SPY-Q® technology to determine the numeric threshold predictive of flap necrosis or survival (Figure 1).

Results:
Ten breasts undergoing immediate breast reconstruction were included in each group. There were no statistical differences in age (57.6 vs 48.7 years; p=0.07) or BMI (26.6 vs 24.4 kg/m2; p=0.41). The flap necrosis group demonstrated an average relative perfusion of 25.2% (range 20-27%, SD 0.019). The adequate healing group demonstrated an average relative perfusion of 43.3% (range 32-53%, SD 0.069). Comparison of the groups demonstrated a significant difference in relative perfusion, 25.2% vs 43.3% (p=<0.0001; Table 1).

Conclusion:
Quantitative perfusion analysis using LA-ICGA and SPY-Q® technology may be helpful in more objectively predicting mastectomy flap necrosis. By providing a cut-off perfusion below which necrosis is likely, surgeons may feel more confident intervening on at-risk flap skin while critically preserving skin more likely to recover with time.
References:

Table 1: Relative Perfusion (percent of perfusion at medial IMF)

<table>
<thead>
<tr>
<th>Angiogram Number</th>
<th>Flap Necrosis Group</th>
<th>Adequate Healing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25%</td>
<td>38%</td>
</tr>
<tr>
<td>2</td>
<td>27%</td>
<td>49%</td>
</tr>
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<td>3</td>
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<tr>
<td>10</td>
<td>26%</td>
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<tr>
<td>AVERAGE</td>
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<tr>
<td>p-value</td>
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</tbody>
</table>

Figure 1: Mastectomy Flap Perfusion Images

Resident Competition Paper #6

Hypoxia Induces Adipokine Release from Preadipocytes which Enhance Mammary Epithelial Proliferation
Matthew Blanton, M.D.
Sarah Blanton, M.D.
Jennifer Bond, M.D.
Detlev Erdmann, M.D.
Scott Hollenbeck, M.D.

Purpose:
Obesity is associated with an increased risk of developing breast cancer and portends a worse outcome. Adipokines secreted by adipose tissue may be critical drivers of ER- breast cancer. Adipose tissue responds to hypoxia by secreting pro-angiogenic and pro-inflammatory adipokines. We tested the hypothesis that hypoxia acts as a stimulus for preadipocytes to produce adipokines that enhance deleterious behaviors of breast cancer.
Methods:
Human preadipocytes and human dermal fibroblasts (DF; control) were kept in either normal oxygen or hypoxic (0.5% O2) conditions for 48 hours to generate conditioned media. Soluble VEGF and IL-6 was quantified using ELISA. Human mammary epithelial and ER- ductal carcinoma cells were exposed to preadipocyte conditioned media. Cell proliferation was measured using MTS colorimetric method.

Results:
Preadipocytes (normal oxygen) produced significantly more soluble IL-6 than soluble VEGF (74.7 vs 4 pg/ml; p<0.05). Under hypoxic conditioning, preadipocytes induced a 31-fold increase in VEGF and a 3-fold increase in IL-6 as determined by ELISA (FIG 1). Both VEGF and IL-6 were significantly lower in DF-conditioned media and had minimal response to hypoxia. Functional effects of adipokines were tested. Conditioned media from preadipocytes and DF was added to breast cell basal media. Hypoxic preadipocytes induced a 1.3-fold increase in breast cell proliferation (p<0.05) over control. This effect was reversed with VEGF blocking antibodies (FIG 2).

Conclusion:
Hypoxic conditions increase VEGF and IL-6 release from preadipocytes. These adipokines may have a significant effect on breast cell function. These findings have important clinical implications for obesity, breast disease and cancer prevention.

Figure 1:

![Figure 1](image1.png)

Figure 2:

![Figure 2](image2.png)
Resident Competition Paper #7
Spontaneous Cord Rupture after Collagenase Clostridium Histolytica Injection for Treatment of Dupuytren’s Disease
Kiranjeeet Gill, M.D.
Christopher Litts, M.D.
Martin Newman, M.D.
David Friedman, M.D.

Background:
Since its approval in February 2010, we have utilized collagenase to treat our Dupuytren’s patients. The purpose of this study is to review our clinical outcomes of collagenase injection for Dupuytren’s.

Methods:
We retrospectively reviewed 36 consecutive patients treated by 2 hand surgeons in a single institution. All patients received the standard dose of collagenase for the cord being treated. Data including age, gender, digit involved, joint injected, number of injections, degree of contracture pre and post treatment, and complications were collected. All patients returned 1 day after injection for joint manipulation under local nerve blocks. Follow up was at 7 and 30 days. Spontaneous ruptures were noted prior to any joint manipulation.

Results:
From February 2010 to December 2011, 36 patients (32 males and 4 females) were reviewed. Average age was 67.1 years (roughly 40-90). A total of 42 digits involving 43 joints were injected. Average MP joint contracture was 43.1 degrees and PIP contracture was 53.5 degrees. 30 joints achieved full correction (69%), 20 MP joints (83%) and 9 PIP joints (52%). Spontaneous cord rupture was seen in 7 patients (19%), 4 patients had cord rupture resulting in full correction, and an additional 3 patients had cord rupture with partial correction. Skin tears were seen in 3 patients (8%).

Conclusion:
Collagenase clostridium histolyticum is an effective non-surgical treatment for joint contractures in patients with Dupuytren’s disease. Spontaneous cord ruptures were higher than expected, occurring in nearly 1 out of 5 patients.
Immediate Mandibular Distraction in Patients Presenting with Airway Obstruction
Mark Schoemann, M.D.
Fernando Burstein, M.D.
Joe Williams, M.D.

Introduction:
Mandibular distraction osteogenesis has become an alternative to tracheostomy in infants and children that present with upper airway obstruction due to mandibular hypoplasia. To avoid prolonged intubation during distraction we have implemented a protocol of immediate distraction at the time of distractor placement, which results in acute airway improvement.

Methods:
Over two years, 22 patients (82% Pierre-Robin sequence, 9% hemifacial microsomia, 9% Treacher-Collins) with severe airway obstruction have undergone mandibular distractor placement. Indications for surgery were apnea and desaturations with feeding. Resorbable distraction devices were placed bilaterally and activated to 5-8mm. Recombinant human bone morphogenetic protein (rhBMP-2) was placed in the gap. Distraction was implemented postoperative day two at 2mm per day.

Results:
44 distraction devices were placed in 22 patients with an average age of 24.1 months (range 3 days to 5.5 years). The average distance of distraction performed in the OR was 5mm. The average total distraction was 24mm performed over 12 days. Overall, 89% of patients were extubated after distractor placement. Two patients with difficult intubations were extubated 7 days later in the OR with ENT. Of the four tracheostomy patients, one was decannulated while three are pending postoperative sleep studies. One patient had a minor wound complication.

Conclusion:
Tracheostomy and prolonged intubation in patients with mandibular hypoplasia has significant morbidity and mortality. We have implemented a protocol of immediate distraction in the operating room with placement of rhBMP-2. Immediate distraction appears to be an effective method of avoiding postoperative intubation and tracheostomy.

10:35–11:20 AM  Upchurch Lecture: Salon 2
Thomas Biggs, M.D.

Currently in private practice at Biggs and Collins in Houston, Texas with an Emeritus appointment from St. Joseph Hospital, Dr. Biggs has been involved in the training of more than 145 residents, and has lectured in 56 countries (and operated in many of them!). We are pleased to have him join us for this annual lecture.

11:20–11:40 AM  Break, Visit Exhibits, and Posters Salon 3, Plaza 1
11:40–1:00 PM  
**Panel Presentation:**  
“*The Science Behind the Art*”  
Moderator: Henry Vasconez, M.D.

- Evidenced Based Medicine in Plastic Surgery  
  Monty Eaves, M.D.

- Why And How Adipose Derived Stem Cell Work  
  Spencer Brown, M.D.

- Fat Grafts: The Science of Fat Grafting  
  Leroy Young, M.D.

**Tuesday, June 5**

*Chairman: William Lineaweaver, M.D.*  
*Secretary: Peter Haines, M.D.*

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>6:00 AM</td>
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<td>Salon 2</td>
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<td>6:30 – 7:30 AM</td>
<td>Continental Breakfast</td>
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<tr>
<td>6:30 – 7:30 AM</td>
<td>Poster Session with Author Q&amp;A</td>
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<tr>
<td>7:30 – 8:30 AM</td>
<td>Safety CME Presentations</td>
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<tr>
<td>8:30–9:20 AM</td>
<td>Panel Presentation, Patterns in Rhinoplasty: Deformities and Solutions</td>
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<td>9:20–9:50 AM</td>
<td>Break, Visit Exhibits, and Posters</td>
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<tr>
<td>9:50–11:00 AM</td>
<td>Facial Rejuvenation Panel</td>
<td>Salon 2</td>
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<tr>
<td>11:00–12:30 PM</td>
<td>“Problems and Pearls” Session, with Member Participation</td>
<td>Salon 2</td>
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12:00–1:00 PM  **Residents Luncheon, with Dr. Mark Codner, ASAPS Traveling Professor**
Topic: Blepharoplasty and Managing Complications
Open to all Residents, no fee required, R.S.V.P. requested. See Registration Desk for details.

12:30–12:45 PM  **Break, Visit Exhibits, and Posters**  
**Salon 3, Plaza 1**

12:45–1:40 PM  **SESPRS Annual Business Meeting**  
Open to members only. End time is approximate.

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### Wednesday, June 6

*Chairman: C. Scott Hultman, M.D.*
*Secretary: Walter Erhardt, M.D.*

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<td>7:15–8:00 AM</td>
<td>Continental Breakfast and Exhibits Open</td>
<td>Salon 3</td>
</tr>
<tr>
<td>7:30–7:45 AM</td>
<td>Update on 2011 SESPRS Research Grant and Presentation of Results</td>
<td>Salon 2</td>
</tr>
</tbody>
</table>

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### Characterization of Passaged Adipose-Derived Stromal Cells

*Sherry Collawn, M.D.*
*Nilam Banerjee, M.D.*
*Louise Chow, M.D.*

**Purpose:**
The goal of this project is to develop a method for accelerating wound healing using adipose-derived stromal cells (ADSC).

**Methods:**
Adipose tissue is a reservoir of stromal stem cells which can be manipulated in culture to produce cells such as osteocytes, adipocytes, chondrocytes, and endothelial progenitor cells. Adipose-derived stromal cells (ADSC) can be harvested in large amounts and are easily grown in culture. ADSC have been shown to be beneficial in wound healing. We have shown in our preliminary results that ADSC benefit skin wound healing when used in an organotypic 3-D culture system. Our ADSC preparations from abdominal liposuction have been expanded in culture and then incorporated into a dermal equivalent consisting of type I collagen and human fibroblasts. Primary keratinocytes are cultured at the air-medium interface on dermal equivalents with or without ADSC as organotypic cultures. These cultures have been laser injured and wound healing accelerated with the use of ADSC. We propose to optimize this system and are currently characterizing the cells in passaged ADSC cultures.
Factors Affecting Complications in Radiated Breast Reconstruction
James Thompson, M.D.
Guarav Bharti, M.D.
Ivo Pestana, M.D.

Introduction:
Breast irradiation in combination with breast reconstruction is associated with increased complications. Due to the diminishing threshold for radiotherapy, breast reconstruction irradiation is rising. Our aim is to evaluate factors affecting outcomes in irradiated breast reconstructions.

Methods:
A review of consecutive patients who underwent mastectomy, radiation and breast reconstruction was conducted. Demographics, operative procedure, breast irradiation timing, and postoperative complications were collected.

Results:
159 patients were included with a mean follow-up of 6 years. Average age at reconstruction was 50 years. 114 cases were immediate and 45 cases were delayed. 84 cases were autologous reconstructions and 75 cases were implant-based. 37 cases employed ADMs. 60% of cases were radiated prior to reconstruction and 40% were radiated afterwards. Major complications occurred in 43% of patients and minor complications occurred in 15%. In general, radiation prior to reconstruction led to a 2-fold increase in complication rate (p=0.03). The presence of ADM led to an increase in complication rate with a 5-fold greater chance of requiring re-operation (p=0.03). No significant difference in complication rates was associated with presence of HTN, diabetes, smoking, elevated BMI, autologous versus implant-based reconstructions, delayed versus immediate reconstructions, and time between radiation and reconstruction.

Conclusions:
Radiation prior to prosthetic reconstruction may produce an increase in complication rates. Increasing age and the use of ADMs in the face of breast irradiation increases the likelihood of a complication requiring re-operation.

Galen Perdikis, M.D.
George Collis, M.D.
Sarvam Terkonda, M.D.
James Waldorf, M.D.

Title:
Latissimus Dorsi Remains an Excellent Option for Breast Reconstruction: A Review of 248 Reconstructed Breasts

Objective:
To review outcomes of latissimus dorsi myocutaneous flap (LDMF) breast reconstruction, comparing timing of reconstruction and effects of radiation.
Methods:
This is a retrospective cohort study of 228 consecutive patients who underwent LDMF breast reconstruction at a single institution over 17 years. 20 patients underwent bilateral LDMF reconstruction for a total of 248 reconstructed breasts.

Results:
64% of the 248 reconstructed breasts underwent immediate reconstruction, and 28% (69/248) were irradiated. The rate of seromas requiring aspiration was 23%. LDMF skin necrosis rate was 1%, and mastectomy skin flap necrosis rate 4%. Grade 3 or 4 contracture rate was 2%. Total reoperation rate was 11%. When comparing these complications, there were no significant differences in outcomes between immediate and delayed LDMF reconstructions. The only significant difference regarding radiation status was a lower rate of seromas in irradiated patients, 15% v. 30% (p<0.02).

Conclusion:
LDMF remains an excellent option for patients choosing to undergo breast reconstruction.

Outcomes of 248 LDMF Reconstructed Breasts

<p>| | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td>Number of Patients</td>
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<tr>
<td>Bilateral LDMF</td>
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<td>Total Reconstructed Breasts</td>
<td>248</td>
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<tr>
<td>Mean Age</td>
<td>54</td>
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<tr>
<td>Immediate</td>
<td>158</td>
</tr>
<tr>
<td>Delayed</td>
<td>90</td>
</tr>
<tr>
<td>Radiated</td>
<td>69</td>
</tr>
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<td>Not Radiated</td>
<td>179</td>
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<tr>
<td>Seromas Requiring Aspiration</td>
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<td>Grade 3/4 Contracture</td>
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<td>LDMF Skin Necrosis</td>
<td>3</td>
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<td>Mastectomy Skin Flap Necrosis</td>
<td>10</td>
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<tr>
<td>Reoperations</td>
<td>28</td>
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<tr>
<td>Total Complications</td>
<td>91</td>
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Outcomes of 248 LDMF Reconstructed Breasts

WEDNESDAY SESSION
Comparison of Irradiated to Non-irradiated Patients with LDMF Breast Reconstruction

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<th>Not Irradiated</th>
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<td># of Patients</td>
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<td>159</td>
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<tr>
<td>Bilateral LDMF</td>
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<td>8</td>
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<tr>
<td>Total Reconstructed Breasts</td>
<td>69</td>
<td>179</td>
<td></td>
</tr>
<tr>
<td>Mean Age</td>
<td>52</td>
<td>55</td>
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<tr>
<td>Seromas Requiring Aspiration</td>
<td>9 (13.0%)</td>
<td>49 (27.4%)</td>
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</tr>
<tr>
<td>Grade 3/4 Contracture</td>
<td>2 (2.9%)</td>
<td>4 (2.2%)</td>
<td>0.6715</td>
</tr>
<tr>
<td>LDMF Skin Necrosis</td>
<td>1 (1.4%)</td>
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<td>1</td>
</tr>
<tr>
<td>Mastectomy Skin Flap Necrosis</td>
<td>2 (2.9%)</td>
<td>8 (4.5%)</td>
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<tr>
<td>Reoperations</td>
<td>6 (8.7%)</td>
<td>22 (12.3%)</td>
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</tr>
<tr>
<td>Total Complications</td>
<td>17 (24.6%)</td>
<td>74 (41.3%)</td>
<td>0.0183</td>
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</table>

Breast Reconstruction with Split Latissimus Dorsi Musculocutaneous Flaps
Yoav Barnavon, M.D.
Pedro Vieira, M.D.

Introduction and Purpose:
Many design modifications for breast reconstruction using a latissimus dorsi flap have been described. This flap is often overlooked as a first choice for breast reconstruction due to donor site problems and a perceived inferior cosmetic outcome. We proposed that a split muscle design with horizontally oriented skin paddle would decrease donor site morbidity and improve cosmetic results by allowing greater flexibility in flap shaping.

Methods:
We conducted a retrospective review of thirty five flaps performed on twenty three patients by one surgeon over a three year period. Follow-up ranged from eight weeks to four years. All patients underwent post mastectomy reconstruction (twelve bilateral and eleven unilateral) with a pedicled split muscle latissimus dorsi myocutaneous flap. Donor site incisions were oriented horizontally and elliptical skin paddles rotated 180 degrees into the mastectomy defect. Flaps were uniquely tailored and cone shaped. Two patients required breast implant placement beneath the flap. Eight patients underwent subsequent fat grafting to the flap for volume improvement. Pre-operative and post-operative photographs were compared to assess fullness & projection of the reconstructed breast(s). Patients were also asked to rate their overall cosmetic outcome.
Results:
Photograph analysis revealed good volume and projection of all reconstructed breast(s). We encountered no flap loss or other major complications. Minor complications, which included seroma and donor site wound infection, all resolved without need for additional surgery. All patients were very satisfied with the final appearance of their reconstructed breast(s) and donor site scar(s).

Conclusion:
The flap design modification we employed allows for cone shaping to optimize projection while providing ample tissue in most patients to adequately fill the total mastectomy defect. Flap volume may be augmented in select patients by subsequent fat grafting. We found this method produced only minimal donor site morbidity. Our results demonstrate the split latissimus dorsi myocutaneous flap with extended skin paddle offers an option for autologous tissue breast reconstruction with very good cosmetic outcome.

Time from Injury is a Risk Factor for Successful Digital Replantation in Clean Cut Mechanisms
Christopher Killingsworth, M.D.
James Long, M.D.

Background:
The precise number of digital replantation procedures is difficult to discern, but the overall frequency has declined, in part due to more rigid selection criteria. As a regional hand trauma center, we often encounter prolonged digital ischemic times due to transfers from remote locations.

Methods:
We retrospectively reviewed a continuous series of patients undergoing digital replantation over a 10-year period to analyze the influence of time from injury to operation on successful revascularization. Data was analyzed for statistical significance using SPSS software.

Results:
A total of 64 digits (49 patients) underwent replantation during the study period. The mechanisms included clean cut, crush, and avulsion injuries. The average time of injury to operation was 6:23 (range 2:37-12:17). There were 15 failed digital replants (23.4%). When stratified by mechanism, crush and avulsion injury survival was not impacted by time from injury to operation (p = 0.809, p = 0.540). However, survival in clean-cut injuries was affected as time increased (p = 0.018). Within this mechanism, there was a survival advantage for times less than 12 hours (p=0.04).
**Conclusions:**
These findings support the negative impact of ischemic time on survival when confined to clean-cut mechanisms, especially when time exceeded 12 hours. This also reinforces the known poorer prognosis of crush and avulsion injuries inherent to the mechanism, and as such, their survival corresponds to their poor prospects at the time of injury. As a regional hand trauma center, selection criteria for replantation and method of transfer may be influenced by these findings.

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**Laser Assisted ICG Angiography, A Critical Appraisal**
*Sendia Kim, M.D.*
*Eric Halvorson, M.D.*

**Background:**
Laser-assisted indocyanine green angiography (ICG-A) has been promoted to assess vascular perfusion of skin flaps, pedicled flaps, and free flaps. Few studies address the potential limitations of ICG-A.

**Methods:**
Twenty-one patients underwent reconstructive procedures with ICG-A performed. The correlation between clinical findings and ICG-A assessment of perfusion was studied.
Results:
ICG-A was used to assess skin flap perfusion in 9 random skin flaps (8 mastectomy flaps, 1 neck flap). ICG-A underestimated perfusion in 6 of 8 mastectomy flaps and in 1 neck flap as demonstrated by the survival of areas with poor ICG uptake. ICG-A was used to evaluate 2 pedicled flaps (TRAM and pectoralis) in situ and in both flaps perfusion was underestimated by ICG-A. ICG-A was used in 10 hemi-abdomens to identify abdominal wall perforators. ICG-A correlated with CT angiogram and intraoperative findings in 8/10, and confirmed clinical evaluation of perfusion. Eight patients had osteo/fasciocutaneous free flaps. ICG-A accurately identified the dominant perforator used in 3 of 4 patients in whom we imaged prior to incision. ICGA confirmed adequate perfusion in 4 of 6 flaps on isolated perforators and underestimated perfusion in 2 patients.

Conclusions:
ICG-A often confirmed our clinical and radiologic findings in abdominal perforator, fasciocutaneous, and osteocutaneous flaps. It tended to underestimate perfusion in pedicle flaps and skin flaps, as demonstrated by the survival of areas with poor ICG uptake. Improvements in the technology and more experience are necessary to establish ICG-A as a tool that supercedes the surgeon's clinical judgement.

Hydrophilic Polymers Prolong Distal Motor and Sensory Axon Survival After Autografting
Kevin Sexton, M.D.
Gabriel Del Corral, M.D.
R. Bruce Shack, M.D.
Wesley Thayer, M.D.

Background:
Polyethylene glycol (PEG) has been shown to improve outcomes in animal models after traumatic peripheral neuropathy. We designed our study to test the hypothesis PEG mediated improvement was due to increased axon survival.

Methods:
Sprague Dawley rats underwent left sciatic nerve exploration where a 10 mm nerve segment was excised and immediately reattached. Plasma-lyte A® (Baxter: Deerfield, IL), 1% Methylene Blue in distilled water, and 50% by weight solutions of PEG in distilled water were applied to the coaptation sites for one minute each in all experimental animals (n=5). Control animals had no exposure to PEG (n=5). The wound was then closed and the animal recovered. At 72 hours postoperatively, the animal was sacrificed and the left sciatic nerve was fixed, sectioned, and underwent immunohistochemical staining followed by quantitative morphometry.
**Results:**
Axonal counts using ImageJ were obtained from cross sections of proximal sciatic nerve, nerve autograft, and distal sciatic nerve. Axons were considered sensory if staining for carbonic anhydrase II was positive and motor if staining for choactase was positive. A statistically significant difference was noted in the number of motor axons in the grafts of animals treated with PEG compared to control ($p = .041$) and in the distal sensory and motor axon count in animals treated with PEG compared to control ($p = .0189$ and $p = .0032$, respectively).

**Conclusions:**
PEG delivered at the conclusion of an autografting procedures is an effective therapeutic strategy for restoring and maintaining neuronal survival for at least 72 hours after trauma.

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**The Presence of Elevated BMI and/or Irradiation Mandates Latissimus Immediate Breast Reconstruction**

*Joseph Parks, M.D.*
*Lou Adams, M.D.*
*Greg Chandler, M.D.*
*Kyle Grabick, M.D.*

The presence of an elevated BMI and/or prior radiation results in a statistically significant higher rate of tissue expander loss. This study specifically evaluates the outcome of the patients/breasts reconstructed with an expander with acellular dermis (ACD).

The first author reviewed the experience from 2005–2010 in immediate latissimus breast reconstruction examining the variables of volume of expansion, frequency/duration of expander process, second stage implant, patient risk factors of BMI, diabetes, smoking, radiation, chemotherapy, and the outcomes of infection, skin necrosis, and tissue expander loss. These results were compared to the cohort of patients/breasts reconstructed with tissue expander alone.

A total of 44 patients and 46 breast were reconstructed with latissimus flap and tissue expander and 208 patients and 308 breast with tissue expander and ACD. Patient demographics are listed in Table 1. A comparison of the effect of the complications of necrosis, and peroperative XRT and BMI>28 on the ultimate loss or no loss between the groups, latissimus vs. expander/ACD is contained in Table 2.

**Table 1.**
Table 2.

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<th>Latissimus/Tissue Expander</th>
<th>Tissue Expander/ACD</th>
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<tbody>
<tr>
<td>Loss n=2</td>
<td>Loss n=44</td>
<td>Loss n=31</td>
</tr>
<tr>
<td>Necrosis</td>
<td>1 (16.7%)*</td>
<td>9 (25.7%)</td>
</tr>
<tr>
<td>Radiation</td>
<td>5 (83.3%)</td>
<td>26 (74.3%)</td>
</tr>
<tr>
<td>BMI &gt;28</td>
<td>1 (2.9%)*</td>
<td>8 (42.1%)</td>
</tr>
<tr>
<td></td>
<td>34 (97.1%)</td>
<td>11 (57.9%)</td>
</tr>
</tbody>
</table>

* p<0.05 Loss rates between LD & TE/ACD

**Conclusion:**
Breasts reconstructed with latissimus Flap and Tissue expander in patients with an elevated BMI and/or prior radiation had a much lower incidence, statistically significant, of expander loss than a similar group of patients reconstructed with tissue expander and ACD. This outcome may be the result of the protective effect of the latissimus muscle against infection.

9:00–10:00 AM  Presentation: The Electronic Medical Record  Salon 2
Moderator: Braun Graham, M.D.
Participants include: Bruce Mast, M.D., Carmen Kavali, M.D., Orlando Cicilioni, M.D., and Al Cohn, M.D.

10:00–10:30 AM  Break, Visit Exhibits  Salon 3

10:30 AM  Exhibits Closed  Salon 3

10:30–11:00 AM  Health Care Reform Presentation  Salon 2
The Dog Ate My Homework No Longer Works...
Implementation of Health Care Reform
Malcolm Roth, M.D.

11:00–11:15 AM  Review of the Tear Trough Deformity  Salon 2
Ross Stutman, M.D., SESPRS Fellow

11:15–11:30 AM  The Retaining Ligaments of the Face and Periorbital Region  Salon 2
Mohammed Alghoul, M.D., SESPRS Fellow

11:30–12:30 PM  Closing Remarks, Adjournment and Farewell Lunch  Salon 2 Foyer
Open to all registrants

12:00 Noon  Registration Closed  Salon 2 Foyer
Poster Session Presentations

You are encouraged to view the posters during our “hosted poster sessions”, from 7:00–8:00 AM on Monday and from 6:30–7:30 AM on Tuesday. Both sessions will take place in Plaza 1. All physician registrants are welcome.

**Poster #10**

Minimizing Donor Site Morbidity Following Bilateral Pedicled TRAM Breast Reconstruction with a Double Mesh Fold Over Technique

*Malcolm Marks, M.D.*

*Gaurav Bharti, M.D.*

*James Thompson, M.D.*

*Lisa David, M.D.*

*Claire Sanger, M.D.*

**Introduction:**
The TRAM flap is still the most common autologous modality for recreation of the breast mound. Bilateral pedicled TRAM flaps pose significant abdominal wall morbidity including weakness, bulge, and hernia. We present our experience using a double layered mesh fold over technique to limit abdominal wall morbidity in patients that undergo bilateral pedicled TRAM.

**Methods:**
IRB approved retrospective study of patients that underwent bilateral pedicled TRAM breast reconstruction with a double layered fold over mesh repair of the abdominal wall. Polypropylene mesh was secured medially to linea alba, and then secured circumferentially to the anterior rectus fascia remnant in a double layered fashion. Postoperative abdominal complications were critically evaluated including: bulge, hernia, hematoma, seroma, infection, and tightness.

**Results:**
35 consecutive bilateral TRAM reconstructions with repair of the anterior rectus fascia using the polypropylene mesh fold over technique. The mean age was 49yrs. The mean follow up was 7.4yrs. There were no instances of an abdominal hernia. Two instances of an abdominal bulge occurred in obese patients with a BMI of 34 & 37. None of the patients complained of abdominal tightness. Other complications included hematoma (N=1), seroma (N=4), partial wound dehiscence (N=3), and partial umbilical necrosis (N=5).

**Conclusions:**
Using this mesh fold over technique one may be able to reduce instances of an abdominal bulge and development of an abdominal hernia when performing bilateral pedicled TRAM breast reconstructions.
**Poster #11**

**Virtual Surgical Planning in Complex Composite Maxillofacial Reconstruction**

*Adam Saad, M.D.*

*Hugo St. Hilaire, M.D.*

**Purpose:**
The use of virtual surgical planning for simple mandibular reconstruction has been published. Complex osseocutaneous maxillofacial reconstruction requiring multiple osteotomies, multiple free flaps and with an extensive zone of injury can be fraught with complications and difficulty in flap design and inset.

**Materials & Methods:**
Inclusion criteria for virtual planning were patients requiring free osseocutaneous flap reconstruction of the maxillofacial region and one or more of the following: >1 osteotomy of the osseous flap, 2 or more simultaneous free tissue transfers, history of osteoradionecrosis (ORN) to the mandible, history of radiation to the neck. Patients underwent CT scan of the maxillofacial and lower extremities. Virtual planning was then undertaken. Jigs were created and plates were pre-bent using a stereolithic model. After preparation of the recipient site, the flap was harvested and osteotomized using the jigs. The plate was inset followed by the flap. Post-operative CT scan was done.

**Results:**
9 patients met the inclusion criteria. 6 patients had a history of ORN of the mandible, 3 patients had sustained gunshot wounds to the face. 7 patients underwent free osseocutaneous fibula and additional fasciocutaneous free flap for partial mandibular reconstruction, 1 underwent bilateral free osseocutaneous fibula flap for total mandibular reconstruction, 1 underwent bilateral free osseocutaneous fibula flap and fasciocutaneous free flap for hemimandible and maxillary reconstruction. There were no complications. Post operative CT scans showed excellent contour of the osseous flaps.

**Conclusion:**
Use of virtual surgical planning allows for complex maxillofacial reconstruction to be performed reliably and successfully.
Poster #13

Autologous Fat Transplantation in Aesthetic Facial Recontouring
G. Mabel Gamboa, M.D.
Sun Hsieh, M.D.

Goals/Purpose:
Autologous fat graft transplantation for soft tissue augmentation has become increasingly popular in recent years as a result of comprehension that the aging face is also result of volume loss secondary to atrophy of tissues. The tumescent liposuction brought accessibility for fat transplantation despite a perceived drawback of long term unpredictability of volume maintenance.

The author report their experience of immediate sedimented fat transfer for facial grooves and volume correction.

Methods/Technique:
The authors conducted a retrospective study of a consecutive series of 75 autologous fat graft transfer undertaken in 8 female patients between 46 and 73 years old from October 2008 to July 2011. The fat graft was done to improve the facial cosmetic contouring. 22 fat grafts transfer were done to improve the groove and creases: 12 Nasolabial fold, 4 glabella, 6 nasojugal, and 53 transfer were done for volume augmentation: 17 malar, 14 submalar, 11 lip, 8 temple, 2 chins, and 1 jowl. Tumescent technique and manual syringe aspiration was used to harvest the fat. The abdomen was the most common donor site. The lipo-aspirate was immediate transplanted after sedimentation removing the nonviable component and avoiding oil injections. We minimize the exposure to the air, keeping the fat in the same syringe and minimize the time between the harvest and the injection. A specific blunt tipped cannula and syringe for different muscle groups are described. The mean value of facial fat transfer was 24 cc and the range 4-54cc.

Results/Complications:
8 patients underwent 75 facial units of fat transfer. The mean follow up period was 25 months, ranging from 6 to 36 months. Nine percents of the facial units underwent to second session of fat transfer procedure secondary to under corrected facial contour. The indication for fat transfer was to ameliorate the grooves and creases in 22 facial units and to provide volume augmentation in 53 facial units. There were no report of post operative cellulites or fat necrosis, one patient has nasojugal asymmetry which was resolved after early digital manipulation one patient has prolonged swelling. Clinic evaluations and patient satisfaction reports 88% satisfactory result and 100% of the patient would like to have the procedure again. (Figures 1,2,3,4)

Conclusion:
Autologous fat transfer is the treatment of choice for facial soft tissue contouring is simple, safe, inexpensive, almost unlimited source of donor fat for grafting, potentially permanent and naturally integrated into the host tissue. All patients were satisfied with the soft natural appearance.
Figure 1: 51 Year old Patient. Top: Preoperative View. Lower: Post rhytidectomy and 20 months post fat graft at the nasojugal, nasolabial fold, lip, and marionette lines.

Figure 2: 73 Year Old Patient. Top: Preoperative view. Lower: 17 months post rhytidectomy and fat graft at the temple, nasojugal, cheek, lip and chin.
Figure 3: 47 Year Old Patient. Top: Preoperative view. Lower: Post facial tread lift and 36 months post 5cc malar fat graft.

Figure 4: 46 Year Old Patient. Top: Pre operative View right parotid area and mandible defect. Lower: 29 months post fat graft.
Poster #16

The Influence Breast Size Has On Unilateral Breast Reconstruction Techniques And Outcomes

Claire Duggal, M.D.
Jo Grudziak, M.D.
Drew Metcalfe, M.D.
Grant Carlson, M.D.
Albert Losken, M.D.

Introduction:
In order to determine whether there is a relationship between pre-operative breast size and choice of reconstruction, choice of contralateral breast symmetry procedure, and incidence of complications, we conducted a retrospective review of 355 patients who underwent unilateral breast reconstruction at Emory University.

Methods:
Patients were stratified into 3 groups based on mastectomy specimen weight with small breasts defined as <500grams (n=143), medium breasts as 500-1000grams (n=150), and large breasts as >1000grams (n=62).

Results:
Women with small breasts were equally likely to undergo tissue expander, (34%), latissimus dorsi flap (32%), or TRAM/DIEP flap (34%) reconstruction. Women with medium breasts were most likely to undergo TRAM/DIEP reconstruction (47%), whereas women with large breasts were most likely to undergo latissimus dorsi reconstruction (37%) (p=0.134). Small breasted women were more likely to undergo contralateral augmentation and less likely to undergo reduction (p<0.0001). Women with medium sized breasts were more likely to undergo mastopexy (p=0.033), and large breasted women were more likely to undergo reduction (p<0.0001). Women with complications had a greater mean mastectomy weight than women without complications (744grams compared to 620grams, p=0.0062), and there was an increasing incidence of post-operative wound infections with increasing breast size (18% of large breasts, 7% of medium breasts, and 3% of small breasts; p=0.0003).

Conclusion:
Preoperative breast size is a major factor when choosing the most appropriate reconstructive option. Being able to adjust the contralateral breast brings the extremes of breast size towards the middle making most options available regardless of initial size and shape. There are, however, noticeable and interesting trends in technique and outcome when stratified by breast size.
Poster #20

Soluble Tumor Necrosis Factor-Alpha Receptor II is Elevated in Chronic Venous Insufficiency Ulcers

Stephanie Beidler, M.D.
Christelle Douillet, M.D.
C. Scott Hultman, M.D.
Preston Rich, M.D.
William Marston, M.D.

Introduction:
Tumor Necrosis Factor-Alpha (TNF-α) activity is modulated by soluble TNF-α receptors (sTNFRI and sTNFRII). TNF-α is stabilized by low levels of sTNFRs and attenuated by high concentrations. sTNFRI has a role in cell apoptosis whereas sTNFRII participates in immune cell activation. The study goal was to determine the sTNFR levels in healthy tissue compared to chronic venous insufficiency (CVI) ulcers before and after compression therapy. We hypothesized that CVI ulcer sTNFR levels would be similar to healthy tissue following therapy.

Methods:
Previously untreated CVI ulcers were biopsied before and after 4 weeks of sustained high-compression bandaging. Healthy tissue was obtained from the ipsilateral thigh. Using tissue homogenate, unbound sTNFRI and sTNFRII protein levels (n=16 ulcer tissue, n=6 healthy tissue) were determined simultaneously using a Luminex xMAP multiplex assay system. One way analysis of variance for repeated measures was used and results are presented as means + standard deviations.

Results:
sTNFRI levels do not change with tissue type or therapy. sTNFRII levels are significantly elevated in CVI ulcers compared to healthy tissue (Figure 1).

Conclusion:
The elevated and prolonged appearance of sTNFRII levels within CVI ulcers suggests a protective mechanism by binding to TNF-α and reducing its pathologic consequences. The roles of sTNFRs in wound healing warrants further investigation for eventual application of topical therapy.

![Figure 1. Soluble TNF-α receptor levels in healthy tissue and CVI ulcers before and after high-compression bandage therapy. #Healthy Tissue vs. Ulcer Before Therapy, p < 0.0001 *Healthy Tissue vs. Ulcer After Therapy, p = 0.0006](attachment:image)
Poster #22

A Classification System for Fat Necrosis in Autologous Breast Reconstruction

Winnie Tong, M.D.
Andrea Bazakas, M.D.
Eric Halvorson, M.D.

**Purpose:**
Fat necrosis (FN) is a very common complication of autologous breast reconstruction, yet no classification system exists to describe it. We sought to develop a tool for meaningful reporting, comparison of techniques, and treatment planning.

**Methods:**
A classification system for FN was developed: Grade 0 = no evidence of FN, Grade 1 = radiologic evidence only, Grade 2 = FN palpable but not visible, Grade 3 = FN palpable and visible and Grade 4 = symptomatic FN. We applied this system to patients who had undergone pedicled transverse rectus abdominus myocutaneous flaps (pTRAM) from 2002–2006 and perforator flaps (PF) from 2006-2010.

**Results:**
We performed 93 pTRAM, in 69 patients and 102 PF in 69 patients. The distribution of grades for each group is illustrated in Figure 1. Of the 29 patients with Grade 2 FN, 48% were observed, 17% had biopsy and 35% underwent debridement. Of the 9 patients with Grade 3 FN 11% underwent biopsy and 89% had debridement. All patients with Grade 4 FN underwent debridement. FN requiring reoperation was more frequent in the pTRAM group (23.7% vs. 5.9%, p=0.0004).

**Conclusions:**
Fat necrosis grade was associated with need for surgery and was higher for pTRAM as expected. As it is similar to the Baker grading system for capsular contracture, this classification system is familiar to all plastic surgeons. It is simple, easy to remember, clinically oriented, and could be readily incorporated into outcome studies of autologous breast reconstruction.

![Fig 1. Distribution of fat necrosis after perforator flaps and pTRAM (N=69 for each group)](image-url)
Poster #24

Comparison of Bone Grafts and Tissue Engineered Structural Cages in a Cervical Spine Fusion Model
Yutong Gu, M.D.
Feng Zhang, M.D.
William Lineaweaver, M.D.
Lianshun Jia, M.D.
Jin Qi, M.D.

Introduction:
Tissue engineering can substitute implantable constructs for autologous tissue components. This study evaluated such a bone graft substitute in a model that generated histological and biochemical data.

Materials and Methods:
4 groups of goats underwent cervical spine fusion. The animals had C3/4 discectomy augmented by iliac crest bone grafts, cage reinforcement, cage + hydroxyapatite, and cage + hydroxyapatite +IGF-I and TGF-B-I respectively.

Results:
Animals were sacrificed at 12 weeks. All 3 engineered component groups showed better radiographic fusion results than bone grafts. The biomechanical parameters (stiffness in flexion, extension, and lateral bending) were significantly (p<.05) greater in the cage + hydroxyapatite + growth factor group than in the other groups. This group also had more advanced histological bone matrix formation.

Discussion:
The construct of cage + hydroxyapatite + growth factor showed superior results in this fusion model. The study illustrates the kind of biomechanical and histological data necessary to consider translation of tissue engineered components into clinical use.
Poster #26

Percutaneous Preoperative Breast Implant Deflation for Difficult Secondary Breast Augmentation
M’liss Hogan, M.D.
Kamran Khoobehi, M.D.
Adam Saad, M.D.

Purpose:
Secondary breast augmentation presents multiple challenges to the aesthetic surgeon. Placement of large breast implants causes multiple anatomical changes to the skin, muscle and breast parenchyma. We propose preoperative implant deflation and a minimum waiting period of 1 week to allow for these changes to the skin, muscle and breast to partially recover making the revisionary procedure results more predictable and safe.

Methods:
Inclusion criteria for patients presenting to our clinic with previous saline breast augmentation requesting revision were spontaneous unilateral implant deflation, obvious rippling of the skin, easily palpable implant and moderate to severe ptosis. After the patient had committed to surgery the implants were deflated percutaneously. After a waiting period the patients were taken for revisionary procedure.

Results:
17 of patients met inclusion criteria and were deflated in office. The average age was 41 (range 26-56). The average patient had 1.6 breast procedures (range 1-4) prior to deflation. The average amount of saline drained was 422ml (range of 275-600 ml). The average patient had 18 days between deflation and secondary augmentation (range 5-54). Three patients underwent implant exchange with capsulorrhaphy. Two had implant removal and fat grafting. Five had implant exchange and fat grafting. Five had implant removal, mastopexy and fat grafting. Two had implant exchange, mastopexy and fat grafting. Three patients required revisionary surgery. The were no complications of nipple loss, wound break down or asymmetry.

Conclusion:
Pre-operative implant deflation allowing the patient’s skin and parenchyma to recover makes the revisionary procedure more predictable and safe.
Poster #30
Fibrous Dysplasia: An Algorithm for Optic Canal Unroofing (OCU)
S. Anthony Wolfe, M.D.
Arthur Derosiers, M.D.

Purpose:
This poster provides advice on the management of craniofacial fibrous dysplasia.

Methods:
Over a 35 year period, 32 consecutive patients with craniofacial fibrous dysplasia were operated on by the senior author. Two were McCune Albright, and 30 had monostic or polyostotic fibrous dysplasia. Of these, in 7 patients there was maxillary/mandibular involvement alone; 13 had involvement of the anterior cranial base, but not the optic canal; 12 had circumferential optic canal involvement. Of the patients with optic canal involvement, 10 patients had optic canal unroofing (OCU); two of them twice.

Results:
There was no visual alteration in those asymptomatic patients who had OCU.

Three symptomatic patients who had OCU developed blindness. The first patient had McCune Albright and underwent bilateral OCU in the face of rapid bilateral deterioration in visual acuity.

The second patient had OCU twice because of regrowth of fibrous dysplasia, and post-operatively she had maintenance of good visual acuity. The patient was then “followed” at an outside Eye Institute; when she returned to our clinic for routine yearly followup, she was blind.

The third patient, another McCune Albright, underwent OCU on one side because of change in visual acuity, and then on the other side when visual acuity changes developed. Recurrent fibrous dysplasia on the second side with near total loss of visual acuity called for a second OCU, without improvement in vision.

Conclusion:
Lee et al (NEJM, 2002) stated that normal vision persisted despite narrowing of the optic canal. On the basis of that paper, a conservative approach has been advised for circumferential optic canal involvement, with OCU advised only when there are objective changes in visual fields, red color desaturation, visual acuity, and optical coherent tomography.

However, we conclude from our experience that OCU is safe in asymptomatic patients. Patients who undergo OCU when objective signs of compressive optic neuropathy are already present, are at a greater risk of visual loss post-operatively. Even with OCU, recurrent growth of fibrous dysplasia may threaten vision.

We therefore advocate, as did Chen et al (PRS, 2007), that if an operation is planned on the cranial base for morphological reasons, that the optic canal be unroofed at the same time. As far as involved tooth roots are concerned, fibrous dysplasia is removed as much as possible without jeopardizing the tooth.

The worst that can happen with optic canal involvement is blindness; the worst that can happen with an involved tooth is loss of the tooth.
**Poster #32**

**Options for Large Scalp Defect Reconstruction: A 12 Year Experience**  
Galen Perdikis, M.D.  
Dustin Eck, M.D.  
Stephanie Koonce, M.D.

**Background:**  
From 1999-2011, our clinic performed over 150 scalp reconstructions. We compare our experience with larger scalp defects and evaluate whether free tissue transfer is a potential first option for reconstruction.

**Methods:**  
A retrospective review was conducted of all patients that underwent scalp reconstruction from January 1, 1999 to September 15, 2011. The cohort of patients with defects greater than 50 square centimeters were studied. Eighty-seven operations were identified, 12 free flaps, 29 local tissue flaps, and 46 skin grafts. Re-operation rates and complications were compared.

**Results:**  
Re-operation rate in the free flap group was 33% (4/12). Two of these patients were within the immediate postoperative period for microvascular thrombotic occlusion, one for postoperative hematoma, and one for partial graft failure. Within the local tissue transfer group there was a 14% re-operation rate (4/29) all for debridement of partial flap loss. The skin graft cohort had an 11% re-operation rate (5/46). Complications included one complete and four partial skin graft failures. All required repeat grafting. Additional hospitalizations were frequently required for the skin graft and non-free flap reoperations.

**Conclusion:**  
Both free tissue transfer and non-free tissue techniques are viable options for reconstruction. Even though there is a higher occurrence of re-operation within the immediate postoperative period due to the complexity of the microvascular anastomosis, completion of reconstruction most often occurs within a single hospitalization. Further prospective data would help evaluate free tissue transfer as a primary choice for reconstruction of larger scalp defects.
Poster #37
Distal Nerve Transfers for Incomplete Brachial Plexus Injuries
Tanya Oswald, M.D.
William Lineaweaver, M.D.

Introduction:
Incomplete brachial plexus injuries present problems for direct repairs including difficult dissections in injury zones and need for preservation of intact neural and vascular structures. In specific cases, nerve transfers distal to the plexus injury can avoid these problems and produce functional results.

Materials and Methods:
3 patients with partial plexus injuries and related motor deficits underwent distal nerve transfers: 2 patients received triceps branches to axillary nerves, and 1 patient received a spinal accessory branch to the suprascapular nerve. Patients were followed for 2 years with examinations, videos, and neurophysiological studies.

Results:
All patients had improvement of muscular function to M3 levels. Specific reinnervation from the repairs was documented by neurophysiological studies.

Discussion:
Distal nerve transfers can provide specific functional reinnervation to muscle groups impaired by partial brachial plexus injuries. Such procedures avoid dissection in the area of the plexus injuries, generally avoid nerve grafting, and set up short reinnervation distances.
Poster #38

Management of Primary and Secondary Lymphedema: Analysis of 131 Referrals to a Center

Reid Maclellan, M.D.
Rafael Couto, M.D.
Fredrick Grant, M.D.
Summer Slavin, M.D.
Arin Greene, M.D., MMSc

Background:
Lymphedema is the chronic, progressive swelling of tissue due to inadequate lymphatic function. The purpose of this study was to characterize referrals to a center to determine if lymphedema should be managed by specialists.

Methods:
Patients treated in our Lymphedema Program between 2009 and 2011 were reviewed. Lymphedema type (primary, secondary), location of swelling, patient age, gender, previous management, accuracy of referral diagnosis, and the geographic origin of the patient were analyzed.

Results:
One hundred thirty-one patients were referred with a diagnosis of “lymphedema”; 75% were female and 25% were children. Lymphedema was confirmed in 73.6% of patients: primary (44.8%) or secondary (55.2%). Lymphedema affected the upper extremity (32.3%), lower extremity (55.2%), genitalia (8.3%), or multiple sites (4.2%). Twenty-six percent of patients labeled with “lymphedema” had another condition: lipedema (7.8%), obesity (7.8%), venous stasis (5.4%), musculoskeletal trauma (3.9%), or other (1.5%). One-fourth of the cohort received incorrect management prior to referral. Thirty percent of patients resided outside of our local referral area.

Conclusions:
Patients referred to a center with “lymphedema” often have another condition, and many previously have received incorrect management. Patients with suspected lymphedema should be referred to specialists focused on this disease.
**Poster #40**

**Factors Motivating Women to Pursue Breast Reconstruction: Does it Vary By Type of Reconstruction?**

*Drew Metcalfe, M.D.*  
*Claire Duggal, M.D.*  
*Robin Sackeyfio, M.D.*  
*Grant Carlson, M.D.*  
*Albert Losken, M.D.*

The number of women who undergo post mastectomy breast reconstruction is reported to be approximately 25% and seems lower than expected. In order to examine the motivating factors behind choosing reconstruction, a cohort of 158 women scheduled for reconstructive surgery were prospectively surveyed with a validated questionnaire. Responses were scored using a five-point Lickert and then dichotomized: scores of 4 and 5 were considered “agree” and all others were “disagree”. Results were further analyzed based on type of reconstruction.

The cohort included 58 tissue expanders (37%), 51 latissimus flaps (32%), 35 TRAM flaps (22%), and 14 oncoplastic reductions (9%). Less than a quarter of patients (18%) reported their family or friends had a large impact on their decision to pursue reconstruction. Even fewer (15%) stated their spouse or partner encouraged them to consider breast reconstruction. The majority of women (57%) discussed having reconstruction with other breast cancer patients. When stratified by type of reconstruction, oncoplastic reduction patients were more likely to report being urged to consider reconstruction by their referring doctor (77% of patients). TRAM flap patients were more likely to be influenced by the reputation of their plastic surgeon (62% of patients).

Women are more likely to seek opinions from other women also contemplating reconstruction than they are from family members. Women facing mastectomy should be offered information on support groups for guidance in decision making. Women undergoing oncoplastic reconstruction in particular are influenced by their physician, and referring surgical oncologists should be aware of this option for their patients.
Poster #41

Bilateral Accessory Breast Tissue of Vulva: A Case Report
Ida Janelle Wagner, M.D.
Lyn Damitz, M.D.
Elizabeth Johnson, M.D.
Denniz Zolnoun, M.D.

Plastic surgeons, by training, are familiar with nuances of surgery on supernumerary anatomy and embryological aberrations. While they are often consulted on management of vulvo-vaginal disorders, little is described in our literature with respect to surgical approaches based on established neuroanatomical provisions of the vulvo-vaginal region.

Though extremely uncommon, vulvar breast tissue has been identified and reported in adolescent patients and during pregnancy. Supernumerary breast tissue is attributed to the failure of regression of remnant milk line during embryogenesis, which subsequently is stimulated during puberty or pregnancy. Though benign, lack of regression in size of the stimulated breast tissue often necessitates a surgical intervention. Our case is of a woman who presented with bilateral labial mass during second trimester of her first pregnancy.

The masses progressively increased in size, particularly during lactation. At its maximum, it measured 8 cm in anterior posterior dimension within a pendulous sack of stretched skin down to perineal region (with patient in dorsal lithotomy position).

Conservative management during pregnancy and postpartum allowed for significant reduction in size (down to 5 cm) and engorgement prior to surgery. The procedure to remove the redundant labial skin and underlying breast tissue highlights the application of a modified labioplasty approach to the vulvar region utilizing an "inverted U" incision. In addition, using simple bedside sensory testing (a cotton swab), we were able to delineate the anatomical region innervated by dorsal clitoral nerve thus avoiding inadvertent surgical incision in areas associated with female sexual function.
Poster #42

Curative Treatment of Axillary Hidradentitis Employing Agressive Tissue Resection Including Lymphadenectomy

Richard Nesmith, M.D.
Bruce Mast, M.D.
Louise Chow, M.D.

Background:
The current standard therapy for Hidradenitis suppurativa (HS) is “complete” soft tissue resection. However, the reoperation rate is reported as high as 54% mostly due to recurrent disease. Our hypothesis is that this high recurrence rate is related to retained disease and infected tissue not included in customary soft tissue resection, namely the lymph nodes. Therefore, performing a superficial lymphadenectomy with nodal microbacterial analysis would remove all infected tissue, eradicate the disease and allow fully targeted antibiotic therapy.

Methods:
From 2004–2009, eleven patients underwent fifteen wide en bloc resections including superficial lymphadenectomy with flap reconstruction for axillary HS. A retrospective review was performed with the following outcomes assessed: culture results, hospital stay and recurrences of HS.

Results:
Patients were followed for an average of 4.3 years. During this time there were no wound complications or disease recurrences. Positive bacterial cultures occurred in twelve of fourteen nodes with results that differed from the soft tissue purulence. This led to a change in antibiotic regimen in 75% of patients. Superficial abscess cultures were uniformly covered while only three of twelve nodal cultures where sensitive to our initial antibiotic coverage. No patients developed lymphedema or any loss of function in the involved upper extremity.

Conclusion:
Axillary HS has traditionally been a challenge due to the morbidity of care and high recurrence. Our data shows that an en bloc resection with a superficial lymphadenectomy and subsequent antimicrobial therapy based on both the soft tissue and the lymph nodes can provide a definitive cure.
Poster #43

A Review of Evidence Based on Literature Evaluating Alloderm Reconstructions
Leigh Jansen, M.D.
Pascaline Caigny, M.D.
Nicolas Guay, M.D.
William Lineaweaver, M.D.
Kayvan Skokrollahi, M.D.

Introduction:
Acellular and immunologically inert dermal replacements can be created from cadaveric or xenographic skin to create dermal replacement products (1). The material acts like a biologic scaffold for reepithelialization, neovascularization and fibroblast infiltration (1)(2)(3)(4)(5). There are differences in specific decellularized dermal matrices, for instance in their decellularizing processes and resulting growth factors, or in their storage and rehydration protocols. These differences make the direct comparisons of acellular dermal products challenging.

AlloDerm (LifeCell, Branchburg, NJ) is a popular example of an acellular dermal matrix, and was one of the first such products reported in the literature. It was reported in the Journal of Burn Care and Rehabilitation in 1996 as a reconstructive option in acute full thickness burns (6) and in 1998 as an option for facial soft-tissue defect augmentation (7). More recently, Alloderm has been reported in a wide range of applications including rhinoplasty (8), abdominal wall reconstruction (9), alloplastic breast reconstruction (10), radial forearm free flap donor site coverage (11), and vaginal repair (12).

Surgical innovation, including the use of new products, is an important part of medical advancement, but costs and uncertain outcomes require caution and a rigorous assessment of outcomes prior to their adoption. There are many examples of new products and surgical techniques with initial promise, that later were rejected or reassessed due to unforeseen complications and poor long-term outcomes. These include extracranial- intracranial bypass procedures to decrease the risk of stroke (13), circular plates for four-corner arthrodesis (14), and more recently Bio-Alcamid for soft tissue defects (15). By the same token, there are examples of the opposite phenomenon where beneficial technology has slow adoption, for instance in endovascular techniques for aneurysms (13). In Wilson’s article on the adoption of surgical technology, he notes that, historically, enthusiasm for new surgical technology has often outstripped evidence, and subsequently he provides evidence-based steps in the decision to adopt a new surgical technology (13). Other authors have highlighted the importance of employing Evidence-Based Medicine (EBM) principles in the assessment of surgical innovations and interventions (16)(17).

There have been several recent publications addressing levels of evidence in plastic surgery research (13)(18)(19)(20)(21). EBM can be defined as “the conscientious, explicit and judicious use of current best evidence, combined with individual clinical expertise and patient preferences and values, in making decisions about the care of individual patients” (22). Many medical organizations and institutions have formally recognized the importance of
EBM, including the ASPS(22)(23)(24). One can consider the five main levels of evidence, as shown in Figure 1, which is a pyramid adapted from the Oxford Centre for Evidence Based Medicine (25). Higher levels of evidence are preferred, indicating more reliable results. Common plastic surgery publications, namely case reports and case series, correspond to evidence rungs at the base of the pyramid.

Systematic reviews are standardized retrospective observational reviews that are important tools in EBM (26)(27). They are designed to summarize the existing literature on the question of interest, helping to resolve conflicts and to minimize biases, using a rigorous and reproducible methodology (28). It is important to assess the evidence base for new products such as AlloDerm (29). Given the current uncertainty about the evidence and areas of application on the use of AlloDerm, a systematic review was selected for this study. The purpose of this systematic review is to provide an overview of the world experience with AlloDerm, focusing on study designs and the related evidence base for each clinical indication. We also seek to make recommendations for future studies.

**Materials/Patients and Methods:**

Inclusion and Exclusion Criteria: Inclusion criteria were English articles including the use of AlloDerm. Dental articles and articles relating to Cymetra (LifeCell, Branchburg, NJ) or other micronized particulate forms of AlloDerm were excluded.

Study Identification: A computerized search of the following electronic databases was performed independently by the two authors on August 8, 2010: OVID MEDLINE (1950 to Present with Daily Update), EMBASE (1996 to 2009 Week 18, and EBM Reviews Full Text - Cochrane Database of Systematic Reviews, ACP Journals Club, and Database of Abstracts of Reviews of Effects. The search was performed using the search terms and Boolean operators “AlloDerm” OR “acellular dermal matrix”.

Data Extraction: Two of the authors independently extracted data from the final list of articles, with all differences reconciled by discussion. The specific extracted data included the type of study, including design and level of evidence, area of application (basic science, breast, head and neck, extremities, trunk, pelvis, or skin) and overall outcome. Level of evidence was determined according to the categorizations in Figure 1.

**Results:**

Literature Search: The literature search resulted in the identification of 885 titles. All results were imported into the software RefWorks (ProQuest, Ann Arbor, MI) to facilitate reference management. 132 duplicates were removed, with 753 articles remaining. Two of the authors independently assessed the titles for relevance according to the a priori inclusion criteria, resulting in the rejection of 268 titles. The inter-assessor agreement Kappa score was 80%. The same two assessors independently reviewed the abstracts for the remaining 485 papers, resulting in the elimination of a further 93 papers. The remaining 392 full articles were assessed, with 78 determined to be irrelevant and 3 excluded due to their unavailability. A manual search of the literature was performed with no additional identified articles. The final search therefore yielded 311 articles (Figure 2).
Description of Included Studies: The 311 articles were categorized first according to domain. 86 were basic science, and the remaining 225 papers included: 82, head and neck, 66 trunk, 34 breast, 25 skin, 10 pelvis, and 8 extremities. The non-basic science articles were then classified by type of article, with corresponding level of evidence. The breakdown by group is shown in Figure 3. Table 1 summarizes the clinical questions posed, outcomes assessed and results from the 15 papers with Level I and Level II evidence. Of these 15 papers, 6 have positive overall outcomes, while 6 are neutral and 3 are negative. The overall outcomes were also classified as positive, neutral or negative for the 225 non-basic science papers as a whole, with results of 70% (157), 23% (52) and 7% (16) respectively (Figure 4).

Discussion:
This systematic review identified 311 papers relating to AlloDerm, across a wide range of domains, including basic science, head and neck, breast, trunk, pelvis, extremities and skin. The majority of uses are in head and neck, breast and trunk (Figure 2). Although the literature contains many papers, the majority of these lie in the realm of descriptive and non-randomized studies. Our results showed that 85% of papers were case series, case reports and expert opinion, which are classified as Level 4 or Level 5 evidence. Medical and surgical advances are important for ongoing improvements in patient care and clinical outcomes. While the adoption of new techniques and products is necessary, deciding upon which products to adopt, and when, remains challenging; this topic has been well addressed in publications such as by the Evidence-Based Surgery Working Group in their article on the evaluation of surgical interventions (16). In addition to assessing the level of evidence, a critique must include an assessment of whether the results are valid, the nature of the results and their applicability to the specific patient population of interest.

The surgical literature, including the plastic surgery literature, has recognized the importance and need for greater evidence-based medicine. Trends in level of evidence have been studied, and improvements have been noted but at a low pace and with a lag compared to non-surgical literature, and an ongoing paucity of Level I and II evidence articles (18)(19)(20)(21). As summarized in Table I, there are only 15 papers in this systematic review with Level I or Level II evidence. Considering all non-basic science papers, 70% of papers have positive conclusions while 23% are inconclusive and 7% are negative. These findings reinforce the need to focus on higher quality studies to direct resources to areas where AlloDerm may be of greatest benefit.

There are several limitations of this study, including publishing bias, the exclusion of non-English papers, and the overall low levels of evidence of the underlying studies. The paucity of high-level randomized trials precluded a formal quantitative meta-analysis. Although our literature search was comprehensive, by definition it only includes publications up to the time that the search was performed, current randomized controlled studies that are being conducted, such as the Canadian randomized controlled trial assessing the use of AlloDerm in breast reconstruction, (45), and there are also recent publications with large series or systematic
reviews (46)(47)(48)(49), including breast reconstruction and abdominal wall reconstruction.

There are many challenges in performing randomized controlled trials, in particular in surgery (50)(51). As described by Thoma (52), these challenges include the surgical learning curve, randomization, concealment and blinding, loss to follow-up, intention-to-treat analysis, surgical equipoise, differential care, and treatment effect and implications for sample size. Although such challenges exist, there is no question of the benefits of such studies to answer key clinical questions. New technologies and innovations in surgery are prime examples of areas where such benefits can be achieved. As recently noted by Rohrich and Eaves, becoming an evidence-based plastic surgeon is a “lifelong journey”, but ultimately the process can lead to further advancements in the specialty and patient care (23).

AlloDerm has demonstrated promising results and entered clinical practice in a wide array of surgical specialties, and it has been followed by a number of other similar products. A large quantity of clinical data exists on AlloDerm in the literature. Much of this evidence lies in the realms of descriptive or non-randomized studies and the paucity of high-level randomized trials precluded a formal quantitative meta-analysis, although some randomized controlled trials are emerging. A greater focus on randomized clinical controlled trials will help direct further research towards areas of greatest clinical benefit to justify the costs of AlloDerm for these indications, and help justify its use in a healthcare environment where costs are increasingly requiring justification with quality evidence.
Poster #44

Recent, Current, and Future Matched Hand Surgery Fellows: Demographics and Influences
Louis Brunworth, M.D.
Patrick Owens, M.D.
Martin Newman, M.D.

Hypothesis:
We desired information from the recent, current, and future matched hand surgery fellows regarding their residency training, number of interviews, position matched, cost of interviewing, influences, opinions on future hand fellowship training models, and post fellowship job information.

Methods:
IRB approval was obtained from our institution to submit an online survey. The email was sent to the hand surgery fellowship coordinators to be forwarded to their hand surgery fellows who have or will graduate in the years 2011, 2012, and 2013, as well as directly to the hand surgery fellows if their email addresses were provided by the coordinators. A total of 135 email addresses compiled our panel which was distributed. The survey was 26 questions and was designed to take 5-10 minutes to fill out.

Results:
The survey was taken by 104 hand surgery fellows to date. 71% of the survey responders were from an orthopedic surgery residency background, 19% from plastic surgery, and 8% from general surgery. 48% matched into their first choice. Prestige and location were the two most important features when the candidates were applying to the fellowships. The types of operative cases performed, recommendations from colleagues, and the ability to get along with/work with the attending staff were the most important features when formulating their rank list. When asked if shoulder and elbow surgery should be included in hand surgery fellowship training, 69% reported some exposure to shoulder and elbow surgery is beneficial but is not essential for completion of a hand surgery fellowship, 18% reported yes, and 13% reported no. Some notable differences between the orthopedic, plastic and general surgery residency training were that zero of the plastic surgery respondents would have preferred a 2 year hand and entire upper extremity fellowship and zero of the plastic surgery respondents feel that shoulder and elbow surgery should be a requirement for graduation from a hand surgery fellowship, however 40% of the plastic surgery respondents feel that some exposure to shoulder and elbow surgery is beneficial.

Summary:
The recent, current, and future matched hand surgery fellows come from a broad background of residency training models with the majority of them coming from orthopedics. The data regarding the interview process is helpful for future hand surgery interviewees, the program directors and coordinators. The influences on the desire to go into hand surgery will help mentors to facilitate future mentees to go into the field of hand surgery. There is much debate about the current training model for hand surgery and whether or not to include shoulder and elbow surgery within this fellowship. This survey we provided gives a spotlight on the current opinions of the hand surgery. The majority of the respondents like the current training model of a one year fellowship with the option to pursue a second additional fellowship.
Poster #45

Acute Post-traumatic Nerve Graft Repair of a Median Nerve in a 7-year old Boy: 5 year Follow Up
William Lineaweaver, M.D.

Introduction:
Acute nerve graft repair of nerve injuries is a controversial strategy, but one that can be successful in specific cases. This report presents a long term follow-up of an acute median nerve repair.

Materials and Methods:
A 7-year old year old boy suffered a wrist injury from a shotgun blast. Over an 8 day period, he underwent debridement, tendon repairs, ulnar artery repair, 5 cm sural nerve grafts to his median nerve, and soft tissue coverage. 5 years later he was evaluated.

Results:
He participates in sports and has no activity limitations. AROM is full, and opposition is intact. 2 point discrimination is 3-8 mm in the median nerve distribution.

Discussion:
This case is 1 of 6 acute nerve graftings in my personal series. All have had functional motor and/or sensory results. Acute nerve grafting should be considered for significant defects when injury margins are clear and soft tissue coverage is secure. Additional incentive is the availability of expendable nerves for graft sources, such as motor nerves in microvascular muscle flaps, and anticipated difficulties in exposure for delayed repair.
**Poster #46**

Hydrophilic Polymers Promote Immediate Physiologic Recovery after Nerve Repair with Collagen Tubes

*Gabriel Del Corral, M.D.*  
*Kevin Sexton, M.D.*  
*Wesley Thayer, M.D.*  
*Bruce Shack, M.D.*

**Background:**  
Less than 5% of traumatic neuropathies have been reported to obtain a full recovery. We sought to improve the rate of physiologic recovery following repair of transected nerves using hydrophilic polymer therapy combined with collagen tubes. Our hypothesis is that restoring nerve physiology can improve early behavioral outcomes.

**Methods:**  
Sprague Dawley rats were anesthetized with isoflurane. The left sciatic nerve was exposed. Baseline compound action potentials (CAPs) were stimulated and recorded using a Powerlab data acquisition system (ADInstruments). The nerve was then transected and underwent repair in an end-to-end fashion within a commercially available collagen nerve tube. CAPs were repeated. Calcium free Kreb’s solution, 1000 μm Methylene Blue in Calcium free Kreb’s solution, and 190 mM Polyethylene glycol (PEG) 3.35 kD in distilled water) were applied through the tube. After 3 minutes, solution CAPs were obtained in the same manner above. Control animals received all solutions minus PEG.

**Results:**  
Baseline CAPs were obtained in all animals. No CAPs could be obtained after standard nerve tube repair in control animals (n=5). In the experimental group, post repair CAPs were obtained in all animals (n=5). Behavioral testing, as measured by footfall asymmetry score, was performed on postoperative days (POD) 1, 14, 21, 28, and 35. Using 2 way ANOVA with Bonferroni’s multiple comparison test there was a statistically significant improvement in experimental animals on POD 1 (p<0.001) and POD 14 (p<0.05) (Figure 1)

**Conclusions:**  
PEG improves early behavioral outcomes when combined with a collagen tube compared to control.
Poster #47

Seprafilm in Hand Surgery
Som Kohanzadeh, M.D.
James Long, M.D.

Introduction:
Tendinous adhesions are a major cause of complications and indication for additional surgery in the hand. Adhesions can also prolong occupational therapy (OT) and may result in permanent losses. We adapted a safe method of limiting adhesions using Seprafilm, a product of hyaluronic acid and methylcellulose manufactured by Genzyme Corporation, initially used in the peritoneal cavity for adhesion prevention. According to data from animal studies, Seprafilm is a useful tool to decrease pathologic adhesions in the hand. But no studies have reported its use for hand surgery in humans.

Methods:
All tendon repairs in the hand from January 2009 till 2012 with Seprafilm placed by a single surgeon were evaluated. 14 patients were identified; demographic data and comorbidities were examined. All patients were placed in blocking splints postoperatively and discharged with 5 days of antibiotics.

Results:
1 patient was female, 13 male. Age ranged from 13-74 years. Comorbidities included diabetes, hypertension, previous surgery, arthritis, and tobacco use. There was 1 postoperative wound infection with minimal wound separation which resolved with oral antibiotics and Xeroform dressing. 1 patient suffered from spastic muscle disease leading to re-rupture of tendon repair. There were no additional wound complications and no patients required tenolysis.

Conclusion:
Seprafilm is safe to use in humans for hand surgery. Studies to evaluate efficacy will require larger numbers of patients, but have already begun. Now, having established its safety, we hope to show decreased overall costs, by reducing additional surgeries and OT, as well as improved outcomes.
**Poster #51**

**Adverse Events During the Use of Laser and Light-based Therapies to Treat Hypertrophic Burn Scars**

*John Clayton, M.D.*

*Renee Edkins, M.D.*

*C. Scott Hultman, M.D.*

**Introduction:**

Hypertrophic burn scars may generate significant morbidity, due to intense pruritis, persistent dysesthesias, and contracture. Although treatment with pulsed dye laser (PDL) and fractional CO2 laser may improve symptoms, incidence of secondary wound complications is not well known. We examined the adverse event profile of laser therapies for the treatment of hypertrophic burn scars.

**Methods:**

We performed a descriptive, retrospective, 6-month study of all patients who underwent laser therapies, at an accredited regional burn center, to improve the vascularity, texture, thickness, and stiffness of symptomatic burn scars. Data regarding skin type, mechanism, area treated, and laser parameters were collected. Main outcome measures included pigmentation changes, blistering, rash, infection. Chi-square analysis and Student’s t-test were used to evaluate associations between variables.

**Results:**

A total of 95 patients underwent 163 treatment sessions (mean 2.7 sessions/patient) with PDL (71%), CO2 (22%), and other lasers (7%). Forty-one adverse events were recorded: hyperpigmentation (2%), hypopigmentation (12%), mild blistering (27%), pain (37%), rash (7%), fever (10%), and infection (2%). Patients with scald burns were more likely to develop blistering, rash, and fever after treatment (all p<0.05). Higher Fitzpatrick skin type was associated with hypopigmentation and blistering, while CO2 laser was associated with increased postoperative pain (all p<0.05).

**Conclusions:**

Despite the frequent occurrence of pain and mild blistering after laser treatment of hypertrophic burn scars, major adverse effects were exceedingly rare, with improvement noted in all patients. Patients with higher Fitzpatrick skin types must be handled with care, to avoid complications of blistering and hypopigmentation.
Poster #56

Surgical Outcomes of Gigantomastia Reduction Mammoplasty with a Vertical Scar and Superiomedial Pedicle Technique

Liana Lugo, M.D.
John Mesa, M.D.
Franziska Huettner, M.D.
Richard Slama, M.D.
Jorge de la Torre, M.D.

Purpose:
Reduction mammoplasty in patients with gigantomastia is a challenge for plastic surgeons. Although several techniques have been described to reduce breast on these patients, often the nipple areola complex (NAC) is compromised (necrosis, decreased sensation, inability to breast feed, etc.). Vertical scar superiomedial pedicle reduction mammoplasty technique (VS-SMP) has been demonstrated to be a safe and effective technique to reduce breasts with mild to moderate hypertrophy. The aim of this study is to determine the surgical outcomes of VS-SMP on patients with gigantomastia (resection weight >1000gm/breast).

Materials and Methods:
A retrospective study of all the patients that underwent reduction mammoplasty with vertical scar and superiomedial pedicle technique by two senior surgeons at a single institution between 2009 and 2011 was performed. Patients’ demographics, pre-operative breast measurements, and perioperative data was analyzed. Exclusion criteria consisted in reduction mammoplasty specimen weight less than 1000gm per breast.

Results:
Our results show that 48 of 154 patients that underwent VRM-SMP during the study period qualified for the study. The average age at the time of the reduction was 39 years old. The average BMI was 36. The average suprasternal notch to NAC distance was 34 cm for both left and right breasts. The average resection weight per breast was 1298.83g for the right and 1352.38g for the left. The average NAC transposition was 10.9cm. Only 1 patient (2%) presented partial necrosis of NAC. 98% of the patients presented normal NAC sensation post-operatively. All patients exhibit an excellent breast shape and projection post-operatively.

Conclusion:
Our study shows that VS-SMP reduction mammoplasty in patients with gigantomastia is a safe and effective reduction mammoplasty technique associated with minimal NAC necrosis risk and excellent breast shape.
**Poster #57**

**Minimally Invasive Midface Suspension (MIMS)**

Franziska Huettnet, M.D.
John Mesa, M.D.
Som Kohanzadeh, M.D.
Jorge de la Torre, M.D.
Luis O. Vasconez, M.D.

**Purpose:**
Surgical rejuvenation of the midface through minimally invasive techniques continues to be in demand, especially by the young aging population. Current percutaneous approaches are associated with temporary/permanent puckering of the midface skin (Fig.1). The aim of this study is to present a percutaneous technique of midface rejuvenation not associated with puckering of the skin.

**Methods:**
MIMS requires a long thin blunt needle with an eye and a guide mark located 2cm and 3cm from the tip respectively (design that prevents puckering) (Fig.2). The MIMS needle is introduced next to the oral commissure and directed subcutaneously to a previously made temporal incision where a nylon suture with is threaded. Then, the MIMS needle is pulled back until mark just exits the skin; and then maneuvered so the tip ‘grasps’ the malar fat pad. Then, needle is redirected to the temporal incision. Sutures are anchored to the deep temporal fascia under tension.

**Results:**
MIMS was able to elevate the malar soft tissue, improve nasolabial fold and elevate the corner of the mouth similar to conventional malar fat pad elevation both in cadaver dissections and selected patients (n=30) (Fig.3-4). No patient presented puckering of the cheek skin. One year follow showed durability of the midface rejuvenation.

**Conclusions:**
MIMS is a safe, effective, economical and easy to perform percutaneous technique of midface rejuvenation that does not create puckering of the cheek skin, can be done in the outpatient setting under local anesthesia, and gives clinical results similar to the malar fat pad elevation midfacelift in selected patients.
**Poster #58**

**Longevity Outcomes of Malar Fat Pad Elevation Midface Lift**  
*John Mesa, M.D.*  
*Franziska Huettner, M.D.*  
*Richard Slama, M.D.*  
*Jorge de la Torre, M.D.*  
*Luis O. Vasconez, M.D.*

**Purpose:**  
Malar Fat Pad Elevation (MFPE) facelift is a powerful surgical technique of midface rejuvenation. Outcomes studies in regard of the longevity of the MFPE midface-lift are lacking. The aim of this study is to evaluate the longevity outcomes of MFPE midface-lift.

**Methods:**  
A retrospective review of patients that underwent MFPE midface-lift between 1987 and 2004 was performed. Patient’s re-operations (secondary face-lifts), reasons for re-operation, and length of follow up were recorded. Exclusion criteria consisted of primary face-lift done by a different surgeon, and length of follow up less than five years.

**Result:**  
A total of 122 patients underwent MFPE midface-lift. Of these, 44 were included in the study. A total of 18 patients (18.3%) underwent secondary face-lift. The length of time between the primary to secondary facelift was highly variable and ranged between 1 and 16 years. Eight patients (44%) underwent secondary facelift due to reasons different to significant relapse of the midface aging (Table 1). 10 patients (56%) underwent secondary face-lift due to noteworthy relapse of the midface aging changes. Of the primary face-lift patients with no reoperation, 10 patients (38.4 %) had a follow up to 16 years with no evidence of significant aging relapse (Fig.1).

**Conclusions:**  
Longevity of the MFPE midface lift is significantly influenced by patient’s subjective preferences. Our data showed that MFPE midface lift could last up to 16 years. Patients that underwent secondary MFPE midface lift before 5 years of their primary midface lift did not have significant relapse of midface aging changes.
<table>
<thead>
<tr>
<th>Reasons of Secondary MFPE Facelift per patient</th>
<th>Time between primary and secondary MFPE facelift in years</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Minor”  Prominence of submandibular bands (neck)</td>
<td>1</td>
</tr>
<tr>
<td>Additional tightening of the skin</td>
<td>1</td>
</tr>
<tr>
<td>Asymmetry (right side)</td>
<td>2</td>
</tr>
<tr>
<td>Platysma bands, fullness buccal fat pad</td>
<td>3</td>
</tr>
<tr>
<td>Down turn of corners of the mouth and improvement of jowls</td>
<td>3</td>
</tr>
<tr>
<td>Asymmetry (fullness R cheek)</td>
<td>3</td>
</tr>
<tr>
<td>Tightening of the skin</td>
<td>5</td>
</tr>
<tr>
<td>Excess of skin lower face</td>
<td>5</td>
</tr>
<tr>
<td>“Major”  Relapse of midface aging changes</td>
<td>5</td>
</tr>
<tr>
<td>Correction of elevated eyebrows, droopy nose tip</td>
<td>7</td>
</tr>
<tr>
<td>Down turn of corners of the mouth, lid aging</td>
<td>8</td>
</tr>
<tr>
<td>Relapse of midface aging changes</td>
<td>8</td>
</tr>
<tr>
<td>Relapse of midface aging changes</td>
<td>8</td>
</tr>
<tr>
<td>Improvement nasolabial folds and marionette lines</td>
<td>10</td>
</tr>
<tr>
<td>Relapse of midface aging changes</td>
<td>11</td>
</tr>
<tr>
<td>Relapse of midface aging changes</td>
<td>12</td>
</tr>
<tr>
<td>Aging brows, Jowls formation, Platysma bands</td>
<td>16</td>
</tr>
<tr>
<td>Relapse of midface aging changes</td>
<td>16</td>
</tr>
</tbody>
</table>
**Poster #59**

**Get Up, Stand Up: Lower Extremity Nerve Decompression in Burn Patients**  
Cindy Wu, M.D.  
Catherine Calvert, M.D.  
Bruce Cairns, M.D.  
C. Scott Hultman, M.D.

**Introduction:**  
Generalized neuropathy after burn injury is quite common, but the diagnosis and management of peripheral nerve compression, late after injury, can be difficult. Although the release of upper extremity nerves has been reported, the indications, timing, and outcomes of lower extremity nerve decompression (LEND), following burn injury, are not known.

**Methods:**  
We performed a descriptive, retrospective, 10-year review of elective peripheral nerve decompression in 107 burn patients, at a regional burn center. Data collected included age, injury type, TBSA, prior fasciotomy/escharotomy, pre-operative function, EMG/NCV studies, time from injury to decompression, and decompression site. Main outcome measures included post-operative function, complications, and length of follow-up.

**Results:**  
14 patients (mean age 41.6 years, TBSA 32.5%), with thermal (8), electrical (4), and chemical (2) burns, underwent 17 LEND procedures, a mean of 23 months after injury, at the following locations: common peroneal (14), superficial peroneal (2), and sural (1). Seven patients had previous fasciotomy or escharotomy. Pre-operatively, 7 patients had foot drop (<3/5), 5 had weak dorsiflexion (3--4/5), and 3 had impaired sensation. EMG/NCV data were abnormal in all 9 patients tested. Mean tourniquet time was 37 minutes. Complications included 2 patients with dehiscence, 2 patients with cellulitis, and 2 patients with failure to improve. Length of follow-up was 22 months.

**Conclusion:**  
LEND is effective in improving sensori-motor dysfunction, even late after burn injury, and should be considered in patients with persistent foot drop, paresthesias, and dysesthesias, given the low morbidity of this procedure and high potential for improved function.
**Poster #60**

**1650 Hand Injury Transfers to a Level 1 Trauma Center: A Descriptive Analysis**

*Mark Fisher, M.D.*  
*Catherine Stamey, M.D.*  
*David Ruch, M.D.*  
*Fraser Leveredge, M.D.*  
*Detlev Erdmann, M.D.*

The transfer of patients with hand injuries to trauma centers involves a substantial commitment of resources by the accepting center thus emphasizing the importance of factors that influence referral patterns. Anecdotal experience suggests that the likelihood of transfer increases during nights, weekends, and holidays and may be influenced by patient insurance coverage. Previous studies have suggested that the uninsured are disproportionately transferred when controlled for injury severity. The purpose of this study was to analyze the patterns of hand trauma transfers to a university medical center with respect to timing and patient insurance status.

A retrospective chart review of 1650 consecutive patient transfers from 2005 to 2010 was performed across a broad range of data. Statistical analysis was performed via chi-square. Contrary to our expectations, overall transfers were not disproportionately distributed on weekends (Chi-square = 334, df = 1, p-value = 0.0001). But multiple statistically significant associations were demonstrated when compared by insurance coverage.

The uninsured tended to be transferred at night (53.6% vs 46.4%, chi-square = 267.5, df = 6, p-value = 0.0001). Medicare patients tended to be transferred on weekends (38.1%, vs 68.8%, chi-square = 24.3, df = 6, p-value = 0.0005). And CHAMPUS patients were transferred slightly more frequently on weekends and at nights.

In conclusion, our analysis demonstrates significant associations between insurance status and hand injury transfer patterns particularly on nights and weekends. Further investigation is indicated to determine the economic impact of such factors on our regional trauma systems.
**Poster #61**

**Time to Completion of Nipple Reconstruction: What Factors are Involved?**

*Albert Losken, M.D.*  
*Claire Duggal, M.D.*  
*Karen Desai, M.D.*  
*Meghan McCullough, M.D.*  
*Grant Carlson, M.D.*

**Background:**  
Nipple reconstruction is often used as a marker for completion of the breast reconstructive process. The purpose of this study was to determine the average time to NAC reconstruction and the factors that influence this.

**Methods:**  
All patients who underwent post-mastectomy breast reconstruction between 2005 and 2011 were reviewed. Only those who had completed nipple reconstruction were included. Variables recorded were BMI, age, smoking history, surgeon, presence of pre-operative or post-operative chemo or radiation therapy, type of reconstruction, timing of reconstruction, unilateral or bilateral reconstruction, and complication history.

**Results:**  
A total of 451 patients completed nipple reconstruction (128 implant reconstructions, 121 latissimus plus implant reconstructions, 23 latissimus only reconstructions, and 178 TRAM or DIEP reconstructions). Average time to nipple reconstruction was 12.25 months. Patients who underwent TRAM or DIEP flaps completed reconstruction on average earlier than implant-based reconstruction and latissimus-only reconstruction (8.67 months vs. 11.2 and 11.3 months respectively, p=0.0016). Patients who underwent post-operative chemotherapy or radiation therapy were delayed compared to those that did not (11.3 months vs 9.33 months and 13.87 months vs 9.87 months, p=0.0315 and p=0.0052).

Timing of completion was also dependent on attending surgeon (9.8 months and 11.43 months for the two senior surgeons, p=0.0135) and presence of complications (10.3 months compared to 9.77 months for patients without complications, p=0.0334). BMI, smoking history, pre-operative chemo or radiation therapy, timing of reconstruction, and unilateral vs bilateral reconstruction did not affect time to NAC reconstruction.

**Conclusion:**  
Type of reconstruction, surgeon, presence of complications, and need for post-operative chemo or radiation therapy all affect timing to completion of breast reconstruction. Patients should be counseled as to these factors in order to set appropriate expectations.
Tissue expander/acellular dermal matrix (TE/ADM) based breast reconstruction is one of the most commonly used techniques in immediate post-mastectomy reconstruction. The technique, however, is not without complications. Seroma formation can significantly complicate the reconstruction. Despite recognition in the literature, little information addresses seroma(s) management. We propose a classification system and resultant algorithmic protocol for treatment of this complication.

We conducted a retrospective review of 100 consecutive TE/ADM immediate reconstructions over a two year period, performed by a single surgeon. Data collection included patient demographics, adjuvant therapy, initial TE fill volume, time to completion of expansion, seroma formation, management of seroma, and wound complications, up to the time of definitive implant exchange.

From December 2009 to December 2011, 67 patients (100 reconstructions) underwent TE/ADM immediate breast reconstruction. Thirty-one reconstructions were identified having clinically significant seroma(s). Eighteen of the reconstructions required multiple drainage procedures. With this data, a classification system was created based on the number of aspirations (Table 1). In review of the three groups, 71% of group III required either seromacath or operative drainage beyond simple aspiration(s). Of the 100 reconstructions, three (3%) ended in TE explantation. Only one (3%) TE explantation, interestingly from group I, was attributable to seroma formation. Using the data, we devised a management strategy emphasizing attentiveness to seroma formation, recognition and treatment.

Seroma formation is a known entity linked to complications in TE/ADM reconstructive course. A seroma classification system and treatment algorithm is offered to minimize abandonment of the reconstruction and optimize outcomes.

<table>
<thead>
<tr>
<th>Class</th>
<th>Group description</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Brief-limited</td>
<td>1 aspiration</td>
</tr>
<tr>
<td>II</td>
<td>Clinically relevant</td>
<td>2 aspirations</td>
</tr>
<tr>
<td>III</td>
<td>Sustained</td>
<td>3 or greater aspirations</td>
</tr>
</tbody>
</table>
Poster #66
Complications of Latissimus Dorsi Flap Breast Reconstruction in Overweight and Obese Patients
Max Yezhelyev, M.D.
Chris Derderian, M.D.
Grant Carlson, M.D.
Albert Losken, M.D.

Objective:
The purpose of current study was to evaluate the effect of increased body mass index (BMI) on flap and donor site complications in patients with latissimus dorsi flap (LDF) reconstruction after mastectomy.

Methods:
277 patients were stratified into 3 groups according to BMI: normal weight (NL, BMI<25, n=102), overweight (OW, BMI 25-29.9, n=72) and obese (OB, BMI≥ 30, n=103) group. Flap and donor site complications were compared among the groups.

Results:
Overall postoperative complications rates for flap and donor sites were 33.5% and 22.3%, respectively. Although, there was a trend towards higher flap-related complications with increased BMI (NL-28%, OW-33.3% and OB-38.8%), the difference was not statistically significant (p=0.45 and p=0.95 for NL vs OB and OW, respectively). Incidence of donor-site complications was similar among BMI groups (22.5% vs 19.4% vs 24.2% for NRL, OW and OB groups, respectively). When stratified by type of complication, OB patients were more likely to develop mastectomy skin flaps necrosis (21.3%) compared to NL group (9.8%, p=0.042) and less likely to have capsular contracture and hematomas (p=0.009 and p=0.023, respectively). No difference was observed in the incidence of seromas, hematomas, infection and tissue necrosis of the donor site among BMI groups.

Conclusion:
Reconstruction with LDF in OW and OB patients result in acceptable incidence of flap and donor sites complications and can be safely used in this category of patients.
**Poster #67**

**Post-Augmentation Galactocele: A Case Report and Review of the Literature**

J. Garrett Harper, M.D.
Jarrod R. Daniel, M.D.
J. Nicolas McLean, M.D.
Foad Nahai, M.D.

**Goals/Purpose:**
Post-augmentation mammoplasty galactorrhea and galactoceles are rare complications. Although incidence and precise etiology are unknown, certain factors are thought to contribute to their formation: history of galactorrhea, oral contraceptive use, lactation/recent childbirth, hyperprolactinemia from any etiology, stimulation of intercostals nerves, and disruption/obstruction of breast ducts. We present the tenth case of galactocele formation following augmentation mammoplasty.

**Methods/Technique:**
Our patient is a 24 year old gravida 1, para 0, aborto 1 female who underwent bilateral subpectoral augmentation mammoplasty with 380 cc ultra high profile silicone gel devices through an inferior periareolar incision. She had no medical problems or previous surgeries. Her only medication was an oral contraceptive. One week after her surgery, she presented to our office with unilateral painful enlargement of her left breast.

**Results/Complications:**
The breast was aspirated in clinic and approximately 800 cc of milky fluid was drained and sent for culture and triglyceride levels. Cultures were negative for bacterial growth and triglyceride level was 4307 mg/dl (normal < 150 mg/dl). She was wrapped in a pressure garment and the following week showed re-accumulation of fluid. Her breast was aspirated a total of four times prior to surgery with greater than 3000 cc drained total. Ultimately, the devices were removed through her previous incisions, breast pockets irrigated with betadine and hydrogen peroxide, new devices reinserted, and drains placed. She was placed on a combination of cabergoline and bromocriptine. Drains were removed in 5 days and the patient has had no subsequent complications.

**Conclusion:**
Galactorrhea and galactocele formation following augmentation mammoplasty is a rare complication, but one that the surgeon should have in their differential when presented with postoperative breast enlargement. Statistics are difficult to assess because of its low incidence but use of oral contraceptives and periareolar incisions appear to play a role.
Poster #69

A Comparison of Sterile versus Nonsterile Acellular Dermal Matrices in Breast Reconstruction

Jason Buseman, M.D.
Jared Nimtz, M.D.
Joseph Hill, M.D.
Pamela Kemper, M.D.
Lesley Wong, M.D.

Background:
Acellular dermal matrix (ADM) has been associated with an increased incidence of complications following implant based breast reconstruction. Recently, sterile ADM has been introduced in an attempt to minimize these complications. To analyze the impact of this product on patient outcomes, we created a database of patients undergoing implant based breast reconstruction.

Methods:
Patients undergoing implant based breast reconstruction from January 1 to December 31, 2011 were identified. A database of patient characteristics and outcomes was created. Outcomes investigated included mastectomy flap necrosis, dehiscence, infection, red breast, capsular contracture, hematoma, and seroma. Statistical analysis was performed.

Results:
65 patients underwent breast reconstruction with implants or tissue expanders. 31/65 had ADM placed at the time of reconstruction. 8 of the 31 had the sterile form of ADM placed, and 23 had the original aseptic, but not sterile ADM. The most frequent complication noted was seroma, occurring in 5/8 patients with sterile ADM as compared to 2/23 with the original ADM. This was statistically significant (p = 0.0056). No patients with sterile ADM developed any form of infection.

Conclusion:
The use of sterile ADM is associated with a statistically significant increase in seroma formation. The etiology of this increased incidence remains unknown, but it correlates with the introduction of the sterile form of ADM at our institution. A different preparation or sterilization process, or some other variable as yet unknown, may be responsible. Further studies comparing the different forms of ADM in an animal model may serve to clarify this issue.
**Poster #72**

The Use of a Porcine Bladder Basement Membrane Wound Matrix as an Adjunct or Alternative to Complex Reconstructive Procedures

*Dunya M. Atisha, M.D.*
*Daniel J. Krochmal, M.D.*
*C. Scott Hultman, M.D.*
*Scott Hollenbeck, M.D.*

**Purpose:**
Soft tissue defects are approached using the reconstructive ladder. Some patients are not candidates for or have failed flap reconstruction. We report our early experience with Porcine Bladder Basement Membrane (PBBM) wound matrix for a series of select complex defects.

**Methods:**
A multi-institutional retrospective review was performed on patients receiving PBBM wound matrix as a modality for reconstructive surgery. Descriptive statistics were used to evaluate clinical outcomes.

**Results:**
Thirty one patients with a mean age of 47 years were treated. Etiology of wounds included; burns (11), trauma (8), deep infections (4), pressure ulcer (1), and post-operative wounds (7). Wounds were characterized as having exposed; bone, tendon, or cartilage (21), or other soft tissues (10). Fifteen patients had successful wound closure, ten had partial or failed wound closure, and six treatments are still ongoing. The mean time from initial treatment to wound closure was 103 days. The incidence of infection was 3%. In successful cases, the need for scar contracture release, STSG, or additional flaps for final coverage was 0%. In unsuccessful cases, free flap, local flap, STSG, or finger amputation were used for definitive wound closure.

**Conclusion:**
In select patients, PBBM can be successfully used to achieve wound closure. Treatment related scar contracture, infection, and need for secondary grafting is low. Time to wound closure is prolonged; therefore this approach may not be appropriate for wounds requiring immediate vascularized tissue coverage. Future prospective studies are needed to determine long-term stability and comparison to other methods of wound closure.
Figure 1: Patient with MVC related soft tissue injuries with exposed tibia fracture without periosteum and exposed arm tendons. Patient had pneumonia with prolonged ventilation and was treated with porcine bladder basement membrane. These images are his pre-operative and post-operative photos.
Poster #74
Racial Disparities in Palatoplasty. Outcomes Analysis
Franziska Huetten, M.D.
Peter Ray, M.D.
Danuta Dynda, M.D.
John Grant, M.D.

Objective:
To investigate racial influence on outcomes in palatoplasty with attention to the influence of race on the addition of a Sommerlad type intravelar veloplasty to the operation.

Methods:
Retrospective review of a 14 year, single surgeon, single institution, consecutive series of palate repair operations regarding fistula rate and speech outcomes. Patients with syndrome diagnoses were not excluded. Statistical analysis was performed.

Results:
A total of 600 palatoplasty patients were identified, including 513 primary palatoplasty by the senior author (JHG). Race: 373 white, 64 African American, 29 Hispanic, 43 Asian, and 4 other. Median age of repair: 11.0 (7.7-172.0) months. Follow-up: one month to 12 years, median 28.5 months. Comparison of the rate of acute complications (1.1 vs. 3.1 %, p= 0.06), fistulas (1.1 vs. 4.7%, p= 0.214), and re-operation (31.6 vs. 19.2% p=0.262) between White and African American children were not statistically significant. The addition of a Sommerlad type radical intravelar veloplasty 07/2005 resulted in a reduction in the need for secondary speech surgery in our primary palatoplasty population from 45.3% to 13.7%, p=0.0001, and in the White population (45.1% to 14.4%, p= 0.0001). The African American population showed large decrease in rate (26.7% to 9.1%, p= 0.3562), but due to lack of power statistical significance cannot be determined.

Conclusion:
Evaluation of speech outcomes, as determined by the need for secondary surgery indicated that Cleft palate affected White and African American children demonstrated a reduction in the need for secondary speech surgery with the addition of radical intravelar veloplasty.
Poster #77

Elevation: Developing a Mentorship Model to Raise the Next Generation of Plastic Surgery Professionals

Janelle Wagner, M.D.
Charles Hultman, M.D.

Introduction:
Professionalism is one of the six core competencies of resident education designated by the ACGME. To elucidate the perceived components of professionalism, we released a survey to all members of the plastic surgery division. Our goal is to improve education in professionalism by obtaining data on perceptions of professionalism amongst practitioners.

Methods:
Surveymonkey was utilized to distribute a 19-question anonymous, internet-based survey to all members of the Division of Plastic Surgery. Question formats were multiple choice, rank-order, five-level Likert item, and free-form response.

Results:
20/25 participants responded (80%). Participants consisted of 4 residents (20%), 5 attendings (25%), 5 non-physician providers (25%), and 6 administrators (30%). 87.5% of participants selected “the development of and conformance to a body of ethics” as essential characteristics of professionalism. Professionalism was ranked equally important to clinical skills and medical knowledge by 11.8%; 35.3% ranked professionalism second to these. 82.4% of respondents believed that professionalism can be taught. 64.7% felt that the biggest obstacle to teaching professionalism is the lack of mentors. Mentoring and modeling were the most important educational methods to teach professionalism. Integrity and honesty (88.2%), morality and ethics (76.5%), ranked highest in terms of important attributes of professionalism.

Conclusion:
These findings highlight both the enthusiasm for teaching professionalism in a medical school curriculum as well as the need for mentorship in professionalism curriculum. They also suggest the importance of teaching professionalism in a less formal mentoring/clinical model. These data provide valuable information that will guide the design of professionalism training courses.
Poster #79
These Things Take Time: Logistics of Building a Laser Practice for the Treatment of Hypertrophic Burn Scars
C. Scott Hultman, M.D.

Introduction: Although lasers can improve burn scars, such treatment has not been adopted universally, due to operational challenges starting a practice and the perception that such a program is not financially viable. We report the logistics of building a laser practice for the treatment of hypertrophic burn scars.

Methods: We analyzed the clinical, operational, and financial components of our laser practice, focusing on treatment of hypertrophic burn scars, using pulsed dye laser, fractional CO2 laser, and intense pulsed light. Cases were performed in an OR with anesthesia, following pre-authorization. We examined professional charges and collections, case time, variable and indirect expenses, and break-even volumes.

Results: Our practice grew as follows: 2008, 1 case; 2009, 44 cases; 2010, 169 cases; 2011, 415 cases. Overall collection rate was 32.1%. Expenses incurred by the provider, per 8-hour session, included laser rental/lease ($2375), personnel salaries ($1900), and physician overhead ($808), for a total cost of $5,083. Mean charge was $1642/case; mean collection was $527/case. Median case time (procedure plus turnover) was 40 minutes. In this model, break-even volume is 9.7 cases/day; breakeven time is 49.7 minutes. Provider profit margin for 10 cases/day, or 83% capacity utilization, is $187/day (income – expenses = $5270 - $5083).

Conclusion: Despite high costs associated with starting and operating a laser practice for the treatment of hypertrophic burn scars, a sustainable enterprise can be achieved when the provider has accrued enough volume to batch cases over an entire day. Critical to achieving breakeven is pre-authorization, controlling overhead, and efficient throughput.
**Poster #82**

**Pharyngeal Flap and its Effects on Airflow Dynamics**

*Devan Griner, M.D.*  
*Larry Sargent, M.D.*

**Objectives/Hypothesis:**
Velopahryngeal insufficiency (VPI) is a common problem in the cleft palate population. After palatoplasty, 5-20% will develop VPI. Of these, 25% will fail conservative treatment and require a pharyngeal flap. Sleep disordered breathing is a common complication of this surgery and a sleep study is often performed before undergoing the procedure. However, little is known about the effects that pharyngeal flaps have on airflow dynamics.

Study Design: Retrospective chart review

**Methods:**
Pre and Post operative nasometry and polysomnographic data were reviewed of nonsyndromic children requiring pharyngeal flap since 2009.

**Results:**
18 children having undergone pharyngeal flap were identified. Pre and post operative sleep studies and nasometry were available for all of them. Of those 18, Nadir oxygen saturations were worsened in 10, improved in 7, and remained the same in 1. Snoring was caused or made worse in 8. Sleep efficiency was worse in 11, improved in 6 and remained the same in 1. Apnea/Hypopnia events increased in 9 and decreased in the other 9. Hypernasality was improved in all 18 patients but all required additional speech therapy. Documented sleep apnea was worsened in 1 patient. No patients post pharyngeal flap had any significant sleep disturbance that would warrant CPAP. No flaps required division or takedown.

**Conclusion:**
This preliminary study suggests that although Pharyngeal flaps may cause snoring, they do not cause any significant effects on airflow dynamics as measured by sleep study and nasometry.
**Poster #84**

**Osteogenesis Distraction in Cloverleaf Skull Deformity**  
*Devan Griner, M.D.*  
*Larry Sargent, M.D.*

**Introduction:**  
 Cloverleaf skull deformity (Kleeblattschädel-Syndromen, trilobular skulls) results from synostosis of multiple cranial sutures. The number of sutures involved, the pathogenesis of the synostosis, and the associated anomalies and syndromes are variable. All forms of cloverleaf skull are associated with a high morbidity and mortality. Management of surviving infants requires multiple decompressive and reconstructive operative procedures. Maximal advancement of the forehead/brow at the initial surgery is usually not enough to correct the associated proptosis and a second brow advancement must be done. We present a patient with Aperts Syndrome and cloverleaf skull deformity that required early (1 month old) cranial vault decompression due to severe proptosis and papilledema. Our management included the placement of osteogenesis distracters on the forehead/brow to gain additional advancement and expand the soft tissue.

**Methods:**  
 During the initial operative procedure, the forehead/brow was reconstructed with native bone. This was advanced approximately 2 cm from the original brow position. Bilateral Osteogenesis distracters were secured to the forehead/brow and the temporal bone bilaterally. Five days after surgery, distraction was initiated at 1 mm/day for 25 days and an additional 2.5 cm was achieved.

**Results:**  
 Post operatively, the papilledema and proptosis completely resolved. By the end of distraction, the forehead/brow was advanced significantly and remained in good position.

**Conclusion:**  
 In infants born with Aperts and clover leaf skull deformities requiring early decompression, forehead/brow advancement with the addition of distraction osteogenesis should be considered.
**Poster #86**

**Massive Hemorrhage in Maxillofacial Trauma**  
*Sonia Alvarez, M.D.*  
*Ed Luce, M.D.*

**Background:**  
Although rare, maxillofacial trauma can be associated with significant bleeding that may require intervention. Transarterial embolization has become a useful tool for managing these situations successfully. The purpose of this study was to identify and evaluate patients admitted to a busy level one trauma center with maxillofacial trauma and hemorrhage that underwent embolization of bleeding facial vessels associated with maxillofacial trauma.

**Methods:**  
We performed a retrospective chart review of patients identified with procedure code for embolization of craniofacial vessels from January 2006 to December 2011.

**Results:**  
Twelve patients (age 18–79) were identified that met criteria for inclusion.

**Conclusions:**  
The plastic surgery literature contains little published experience with control of post-traumatic facial hemorrhage via transarterial embolization. Our data demonstrates that the internal maxillary artery is often the culprit. Based on our experience, we advocate prompt consideration of this modality in such instances.

<table>
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**Poster #87**

Connective Tissue Growth Factor (CTGF) Treatment of Umbilical Cord (UC) Mesenchymal Stem Cells Leads to Improved Elastic Cartilage Phenotype

*Daniel Krochmal, M.D.*

Matthew D. Shancke, M.D.

Montserrat Caballero, M.D.

C. Scott Hultman, M.D.

John A. van Aalst, M.D.

**Introduction:**

Rib cartilage autografts for microtia repair are typically more rigid than normal ear cartilage. Tissue engineered cartilage may bridge this gap; however, all attempts to engineer cartilage with in vivo placement have resulted in dense, hypertrophic cartilage. Creating a flexible tissue engineered cartilage requires control of elastin, fibrillin, and collagen I, II, and X. CTGF has been shown to improve elastic phenotype in mature chondrocytes, but its effect on UC-derived mesenchymal stem cells (MSCs) has yet to be determined.

**Methods:**

MSCs were harvested from human UC using an explant technique, grown to sub-confluence, and seeded onto nanoscaffolds electrospun from poly-L-glycolytic acid. Chondrogenic differentiation was induced with TGF-β1. CTGF (25 or 100 ng/mL) was added at days 0 or 7. mRNA for elastin, fibrillin, collagen I, II, and X was assessed by quantitative real time PCR at Days 3, 7, 14 and 21.

**Results:**

CTGF treatment of UC MSCs on Day 7 of chondrogenic differentiation resulted in higher elastin production, increased collagen II:I ratio, and decreased collagen X production when compared to day 0 addition. Fibrillin production was not affected. No calcium deposition was noted.

**Conclusion:**

CTGF improved the elastic cartilage phenotype of UC MSCs undergoing chondrogenesis, including increased elastin and collagen II, and lower collagen X mRNA with no evidence of matrix calcification. CTGF is a useful adjunct in maintaining an elastic cartilage phenotype in UC MSCs, and may have a role in preventing hypertrophic cartilage after in vivo placement.
**Poster #92**

**Gigantomastia: Safe Reduction and Patient Satisfaction**

*Jarrod Daniel, M.D.*
*Garrett Harper, M.D.*
*Sameer Kapadia, M.D.*
*Karan DeSai, M.D.*
*John Culbertson, M.D.*

**Background:**
Gigantomastia (defined as reduction in breast weight >1000g) studies are sparse and often include a small patient population. Reduction techniques vary with nipple preservation, breast characteristics/measurements and patient desires often guiding the decision. We present a large series of gigantomastia patients (n=55) in effort to help guide safe reductions with optimal patient satisfaction.

**Methods:**
We performed a retrospective review of reduction mammoplasties performed from January 2009 to December 2011. Fifty-four patients (106 breasts) fit the criteria for gigantomastia reductions. Extensive chart reviews to define technique, patient characteristics, and outcomes along with patient surveys (>70% response rate) were completed.

**Results:**
Mean age was 35.5 years with a BMI of 39.2. The mean nipple-to-notch distance was 39.6 cm, and nipple-to-IMF was 19.45 cm. Pedicles varied but included: inferior or inferior-central (51.9 percent), central (14.8 percent), superior-medial (2.9 percent), and amputation with or without immediate nipple reconstruction (20.4 percent). The mean resection weight was 1507g on the left and 1356g on the right. Total complication rate was 18.8 percent. There were two complete and two partial nipple-areolar losses (3.8 percent). Re-operation for complications was performed on five breasts (4.7 percent) and included one hematoma evacuation. Over seventy percent of patients completed our satisfaction survey with over 90 percent stating they had significant improvement in their symptoms and appearance, while over 95 percent would have breast reduction surgery again and recommend it.

**Conclusion:**
Choosing the proper technique for gigantomastia reductions can result in symptomreducing, aesthetically-pleasing breasts with good patient satisfaction.
**Poster #94**

**A Large Series Evaluating the Clinical Outcomes Associated with Nasal Bone Fractures at a Level One Trauma Center**

*Edward Ruane, M.D.*  
*Dunya Atisha, M.D.*  
*Ryan Kellogg, M.D.*  
*Jeffrey Marcus, M.D.*  
*Detlev Erdmann, M.D.*

**Purpose:**  
Nasal fractures are among the most common injuries resulting from craniomaxillofacial trauma; however, few large-scale series have explored the clinical outcomes associated with operative versus non-operative management of these fractures.

**Methods:**  
A ten-year retrospective review of patients who sustained at least one facial fracture was performed at a Level 1 Trauma Center. Descriptive statistics were used to evaluate outcomes.

**Results:**  
979 patients (mean age: 40.4) sustained nasal bone fractures from 2001 to 2011. Patients incurred injury secondary to assault (36.4%), MVC (25.6%), falls (24.6%) and sports (7.6%). Of these nasal bone fractures, 60.9% were unilateral, and 95.9% were closed. While most were isolated, 24.3% were associated with other fractures, often involving the orbits and maxilla. Open or closed reduction was undertaken for 250 patients, and reduced patients were found to be significantly younger (p=0.02). Bilateral fractures were also more likely to undergo reduction than unilateral fractures (p< 0.001). In the 29 patients who experienced an adverse event in the form of nasal obstruction or deformity, there was no differences in the time to reduction (mean: 5.2 days), gender, age, or the presence of another facial fracture. There was a significantly higher rate of adverse events in patients treated with a reduction compared to conservative management (p<0.0001), as well as in those who had bilateral nasal bone fractures (p=0.002).

**Conclusion:**  
Patients with nasal bone fractures should be evaluated early in order to identify those who are likely to require operative reduction, namely younger patients with bilateral nasal bone fractures.
Poster #101
Effusion Related to Bone Morphogenetic Protein-2 (SMP-2) Utilized during Cranioplasty
Arthur Derosiers, M.D.
S. Anthony Wolfe, M.D.
Steven Rueda, M.D.

Background:
Bone morphogenetic protein-2 (BMP-2) is a signaling molecule that assists osteoinduction [1] approved by the FDA as an alternative for autogenous bone graft [2]. Plastic surgeons have successfully utilized cranioplasty with autogenous bone grafts and BMP-2. Well-known complications have been described previously with BMP-2, including pleural effusion after spinal fusion procedures [4; 5]. In this case report, we describe a previously unreported complication due to BMP-2 utilized during cranioplasty.

Case Presentation:
The patient is a 32 year-old male patient who 7 years prior sustained closed-head trauma after a motorcycle crash, requiring a left temporal decompressive craniotomy; post-operatively the patient had persistent seizures and residual Broca’s aphasia. The cranial bone was frozen for 6 months and then subsequently placed back as a non-vascularized bone graft. Over 7 years, the temporal bone graft resorbed extensively resulting in a left temporal defect. The patient required split cranial bone graft cranioplasty for the left temporal defect, and reconstruction of the right parietal donor area with split cranial bone and BMP-2. On post-operative day 1, computed-tomographic imaging demonstrated a large right epidural fluid collection (3.3 cm) with mass effect and midline shift of 12 mm. Surgical evacuation of the subdural was performed. Neurologically, the patient returned to baseline without any further sequelae with nearly 2 year follow-up.

Conclusion:
We report unusual complication of BMP-2 used in cranioplasty, resulting in a postoperative fluid collection and midline shift requiring re-operation with subsequent return to baseline neurologic status without any further sequelae. We recommend that plastic surgeons performing cranioplasties with BMP-2 be aware of this possible complication and consider the use of dural tacking sutures.

References:
**Poster #102**  
**Pediatric Immunocompetent Patient with Cutaneous Mucormycosis: Literature Review and Case Report**  
*Andrew Kochevar, M.D.*

**Purpose:**  
To bring to the attention of those surgeons treating soft tissue infections that the possibility of a fungal infection should be considered and appropriate diagnostic studies obtained. The Class Zygomycetes (Order Mucormycosis) may be fatal if adequate treatment is delayed. This study examined diagnosis and treatment of this disease and a case report of cutaneous Mucormycosis in a healthy pediatric patient is presented.

**Methods:**  
An Ovid search was conducted for the years 1948-2011 with the keywords “Mucor,” “Mucormycosis,” “Cutaneous mucormycosis,” “Mucorales,” “Zygomycosis,” “Zygomycetes,” “Rhizopus,” “Rhizomucor,” “Absidia,” and “Cunninghamella,” “Saksenaea vasiformis.” Human subject abstracts only were analyzed, and only those articles dealing with cutaneous mucormycosis were further reviewed. Other articles were extracted from cross-referencing. A 10 year-old-immunocompetent-male presented to an outlying hospital Orthopedic Surgeon with clinical signs of lower leg soft tissue “abscess” and cellulitis of 2 months duration. The patient denied any history of trauma to his leg. He was initially treated with antibacterial medication and underwent 3 surgical debridements; however, what was later believed to be a fungal “mass” recurred after each debridement.

**Results:**  
Several hundred review articles pertaining to fungal infections were initially examined. This review summarizes the findings of relevant articles along with our own practice regarding the management of cutaneous mucormycosis infection. The case example was transferred to our tertiary care facility and diagnosed with Saksenaea vasiformis (Order Mucorales). The patient was treated with surgical debridement, the appropriate antifungal medication, and skin grafting; his infection resolved.

**Conclusion:**  
Primary cutaneous mucormycosis is rare and may be fatal if adequate treatment is delayed. It is usually seen in immunocompromised patients, but not in systemically healthy individuals. The diagnosis is made by clinical picture, and biopsy/culture confirmation. Treatment is primarily surgical debridement in conjunction with potent antifungal medication.