Natural Orifice Transluminal Endoscopic Surgery (NOTES) for Appendectomy: Colonoscopic Transcecal Approach In a Cadaveric Model

Principal Investigator: Sam Atallah, MD

Co-Investigators: Beatriz Martin-Perez, MD
Sergio Larach, MD
Lawna Hunter, BA

Study site address: Center for Colon and Rectal Surgery
Florida Hospital
2501 North Orange Avenue, Suite 235
Orlando, Fl 32804
STATEMENTS OF FUNDS
There are no pending external funds for this project. Needed funding in excess will be from internal Center for Colon & Rectal Surgery (Florida Hospital Graduate Medical Education, Orlando, Florida) funds and industry donation. Preliminary data were collected through division allocated research funds.
SUMMARY

Natural Orifice Transluminal Endoscopic Surgery or NOTES was born in 2004 [1-4]. Many of the procedures classified as NOTES require laparoscopic assistance as a safety measure, which makes them a hybrid-NOTES. Few pure NOTES procedures are performed, such as peroral endoscopic myotomy (POEM) [5,6] or transanal total mesorectal excision [7-9].

While the transgastric and the transvaginal approaches have been proven to be feasible for appendectomy, the direct organ target approach of appendectomy via a colonoscopic transcolic approach, with or without laparoscopic assistance has not been previously described. In order to assess the feasibility and the safety of the procedure, the NOTES appendectomy will be performed on a cadaver model.

Two cadaver models will be part of the experimental study. Access to the appendiceal orifice will be gained via colonoscopy. Endoscopic instrumental for excision and suturing developed for advanced endoscopic procedures will be used for the intraluminal excision of the appendix, as well as the specimen bag to collect the appendix. One of the NOTES appendectomies will be performed with transabdominal, laparoscopic assistance for teaching and learning purposes. The study objective, then, is to perform the second cadaveric appendectomy using a pure NOTES, endoscopic approach.

If proven feasible, a pure NOTES appendectomy could represent an alternative for patients who pose high surgical risk and require appendectomy in a semi-elective setting such as a small carcinoid of the appendix. It is recognized that several patient-safety parameters, such as bacterial contamination and procedure sterility are essential before proceeding with human application of this technique, and it is recognized that this approach is still in the early experimental phase.
BACKGROUND

The problem
Direct target NOTES operations do not violate a healthy visceral organ to gain access to another, while a distant target NOTES operations do, and are therefore less favored. Examples of direct target NOTES operation include POEM, transanal total mesorectal excision (taTME), and vaginal access minimally invasive surgery for NOTES hysterectomy [10]. Examples of distant target NOTES operations include transgastric appendectomy, and transvaginal cholecystectomy [11-21]. Distant and direct Target NOTES are fundamentally different, and clinical application of direct target NOTES, particularly with laparoscopic assistance, has increased exponentially in some fields, such as rectal cancer surgery, where transTME (fundamentally a NOTES operation with laparoscopic assistance) is being increasingly performed by expert colorectal surgeons worldwide.

Transgastric and transvaginal appendectomies have been performed with promising results. In 2008, Rao [10] reported a series on 10 transgastric appendectomies with only 1 complications and 2 conversions. Zorron [11] made an extensive review of a large series of transgastric and transvaginal appendectomies. Transgastric surgeries were considerably longer than transvaginally (135.5 vs 60.5 minutes), had a longer stay in the hospital (3 vs 1.5 days) and a higher rate of complications (21 vs 8%). Corroborating the good results on the transvaginal approach, Lehmann [12] reported on 2010 another series of 42 patients with shorter operative time (42 minutes), longer hospital stay (3.3 days) but with no complications described. However, distant target NOTES operations – including appendectomy – have not been adapted into clinical practice. The approach to NOTES appendectomy via a transcecal colonoscopic approach, as proposed by this grant, only requires viscerotomy at the site of surgery (eg, direct target NOTES) and thus may be more applicable to clinical practice.

Significance
NOTES appendectomy via a transcecal approach is a pure NOTES approach that does not require a viscerotomy in an ‘access organ’ (eg, gastric access for transgastric appendectomy) [14-21], but rather utilized a direct target approach to the appendix by identifying the appendix location via colonoscopy. This could represent an important application for direct organ NOTES and this approach has not been previously described, such as vaginal minimally invasive hysterectomy.

Prior or Concurrent studies conducted
There are no publications or studies being conducted regarding NOTES appendectomy using this transcecal approach, to the best of our knowledge.

Preliminary data
There currently no preliminary data on NOTES appendectomy via a transcecal approach. This cadaveric study represents research in a new area. As previously described, both transgastric and transvaginal approach for NOTES appendectomy have been demonstrated to be feasible in clinical practice.
HYPOTHESIS

We hypothesize that NOTES appendectomy via a transcecal approach is a safe procedure, and feasible with the appropriate advanced endoscopic instrumental.

To test this hypothesis, we propose the following specific items:

**Aim 1:** Perform a transcecal appendectomy through a pure NOTES approach without laparoscopic transabdominal assistance.

**Aim 2:** Evaluate the reproducibility and possible clinical benefits of NOTES transcecal appendectomy – using a pure NOTES approach (ie, without laparoscopic assistance).
METHODS AND DESIGN

Apparatus and procedures

This is an experimental study with human cadavers carried out by the research team of the Center for Colon & Rectal Surgery of Florida Hospital, Orlando. The aim is to remove the appendix transcecally with endoscopic instrumentation.

The study will be conducted at the Florida Hospital Nicholson Center laboratory (Orlando, FL) in two sessions of 4 hours each. The cadavers will be obtained by the Florida Hospital Nicholson Center, following the current regulations for cadaver’s manipulations. Safety measures will be taking on the laboratory: scrubs, gowns, gloves, masks, shoes covers, caps/bouffant. Two cadaver torso with intact abdominal cavity will be used for experimental interventions, one for each session. In the first session, the transcecal appendectomy will be performed with the aid of laparoscopic monitoring for safety and educational purposes. During the second session, the goal is to perform a pure NOTES appendectomy via a transcecal approach without laparoscopic assistance. The procedure will be recorded with video and photographic documentation, including the setup and positioning of the cadaver, the experimental procedure itself, and the specimen.

The cadaver torso will be setup on the station by the laboratory staff with the appropriate hygienic and safety measures. Once the cadaver is setup, the procedure will continue as follows:

1. **Colonic preparation.** It will achieved by manual cleaning of the colon with retrograde enemas. The estimated time to complete this task is 45-60 minutes.
2. **Laparoscopic monitoring and assistance (to be performed during first cadaveric session).** A 5 mm incision will be done transumbilical, placing a 5 mm balloon trocar (Applied Medical ®). Pneumoperitoneum will be established at 15 mm Hg. A 5 mm 30° camera (Stryker®) will be used to monitor the progress of the appendectomy transabdominally; an additional trocar may also be used for laparoscopic assistance.
3. **Colonoscopy.** A conventional adult colonoscope (CF-Q180A, Olympus America®) will be used to arrive from the anus to the cecum. Insufflation will be maintained by a CO2 Regulation Unit (CRU) (Olympus America ®)
4. **Appendiceal orifice transcecal-otomy.** The viserotomy will be done with the Electrosurgical Knife (Spatula, Olympus America®) that would be connected to the ESG-100 Electrosurgical Generator (Olympus America®). A circumferential full thickness section will be equidistant from the internal appendiceal orifice, connecting the cecum to the intraabdominal cavity. At this time, the intraluminal pressure will have to be kept as the insufflation passes to the abdominal cavity. During the procedure with the laparoscopic assistance, this step will be facilitated by the pneumoperitoneum.
5. **Ligation of appendiceal vessels and mesoappendix.** Advanced endoscopic equipment such as the clip fixing device (SIF-Q180 Accessories, Olympus America®) or the spatula used previously for the section can be utilized for the intraabdominal section of the mesoappendix and the appendiceal irrigation. At this point, the appendix will be free from attachment and must be grasped promptly to avoid the loss of visualization of the appendix from the appendiceal orifice.
6. **Specimen extraction.** Either a grasping forceps (3-Nail FG-54D or Polygrab Tripod FG-600U), rat tooth (FG-50L) or a three or four-wire basket (FG-22Q-1) will be use to retrieve the appendix from the abdominal cavity. The specimen will be deposited on the cecum for later extraction if the rest of the procedure is performed with instruments fed through the colonoscope channels.

7. **Closure of the appendiceal orifice.** Different instruments would be suitable for the closure, such as the OverStich™ Endoscopic Suturing System (Apollo Endosurgery®), or the clip fixing device. The OverStich™ is a device with its own camera incorporated for which the colonoscope would have to be taken out and the OverStich™ will be passed till the cecum. Interrupted sutures or clips will obtain an acceptable closure.

**Assessment**

The following data will be recorded in both sessions

**Primary outcome endpoint**
- Completion of the procedure: Yes or No

**Secondary outcome endpoints**
- Setting up time, measured in minutes
- Total operative time, measured in minutes
- Intraoperative complications or limitations
  - Colonic filling with CO2
  - Loss of stable air cavity: Yes or No.
    - During excision of appendix
    - During suturing of appendiceal orifice
    - Resolution by increasing the pneumoperitoneum pressure (during the hybrid-NOTES procedure)
    - Resolution by increasing the insufflation pressure of the colonoscope (during the pure NOTES procedure)
  - Surgical field exposure: 0 (bad exposure) to 5 (excellent exposure)
  - Excision of appendix (for each instrument): 0 (no difficulty) to 5 (extremely challenging)
  - Ligation of vessels and mesoappendix (for each instrument): 0 (no difficulty) to 5 (extremely challenging)
  - Specimen retrieval: Yes or No
  - Specimen retrieval (for each instrument): 0 (no difficulty) to 5 (extremely challenging)
  - Maneuverability and working angles: 0 (unsatisfactory working angles) to 5 (excellent manoeuvrability)
  - Closure of cecal cuff: 0 (no difficulty) to 5 (extremely challenging)
  - Contamination of intraabdominal cavity: 0 (no contamination) to 5 (gross fecal contamination)
- Grade of overall difficulty: 0 (no challenging) to 5 (extremely challenging)
- Graphic records: video, pictures

**Data management**
All data will be collected in a “Limited Data Set” format and will include the information listed in “Study Outcomes Endpoints”. Data and graphic records will be kept on a password-protected file in a password-protected computer to assure patient identity safety. Only study-related personnel will have access to the data.
2015-2016 SAGES RESEARCH GRANT APPLICATION
BUDGET SHEET – NOTES, Transcecal Appendectomy

Detailed budget for 3 month period from 1/01/2016 to 03/31/2016

Dollar amount requested (Omit cents) $18400

Total for the grant request may not exceed $30,000
*Salary funds should be used for staff required to execute the study, but should not be used for salary support for the primary investigator. If salary support exceeds 50% of the project budget, then specific justification is required.

** Funds requests for travel for the presentation of a SAGES funded study should be limited to $1,000

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<td>Principal Investigator</td>
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<tr>
<td>2. Beatriz Martin-Perez</td>
<td>Co-I</td>
<td>10%</td>
<td>25</td>
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<td>3. Sergio W. Larach</td>
<td>Co-I</td>
<td>2%</td>
<td>2</td>
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<td>4. Lawna Hunter</td>
<td>Co-I</td>
<td>5%</td>
<td>5</td>
<td>$37,500</td>
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CONSULTANT COSTS

1. Cadaver (torso) x 2: includes tissue, transportation, tissue process, cremation $5828
2. Cadaver per station fee (2 sessions): all staffing & labor, NC on-site equipment, all basic surgical supplies, skills lab preparation & setup, skills labs cleaning & disinfecting, utilization & disposals of biohazards $1825

EQUIPMENT
(List all Items & Total Equipment Cost)

1. Personal protective equipment: scrubs, gowns, gloves, masks, shoes covers, Caps/bouffant $297
3. Skills Lab fee (2 sessions) $3000
4. Endoscopic instrumental:
   OverStitch® Endoscopic Suturing System (3 units) $2160
   OverStitch® 2-0 Polypropylene Suture (12 units) $528
   OverStitch® Suture Cinch (6 units) $330
5. Recording (2 sessions) $2000

SUPPLIES

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<td>PATIENT CARE COSTS</td>
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<td>TOTAL DIRECT COSTS</td>
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References
The Florida Hospital Institutional Review Board (IRB) and the Office of Research Administration (ORA) have acknowledged the research project and it has been approved without restriction.
AVAILABLE RESOURCES

**Laboratory: Nicholson Center at Florida Hospital**

This facility has a broad experience on the laboratory with human cadavers and live animals, mainly pigs, used for educational purposes. The laboratory sited at the Florida Hospital Orlando Campus offers a space where up to 6 cadaver stations can be set up for a single session. The laboratory has the capacity for searching the tissue (torso with no prior appendectomy), transportation, tissue process, and cremation. They offer the safety equipment as part of their fee.

**Endoscopic equipment**

Endoscopic equipment is available at our institution and will be used in both laboratory sessions. The following endoscopic equipment will be used:
- Colonoscope (Olympus® CF-Q180A)
- CO2 Regulation Unit (CRU) (Olympus America®)
- ESG-100 Electrosurgical Generator
- Electrosurgical Knife (Spatula, Olympus America®)
- ESG-100 Electrosurgical Generator (Olympus America®).
- Clip fixing device (SIF-Q180 Accessories, Olympus America®)
- Grasping forceps (3-Nail FG-54D or Polygrab Tripod FG-600U), rat tooth (FG-50L) or a three or four-wire basket (FG-22Q-1)

**Laparoscopic equipment**

Laparoscopic equipment required for the project is also provided by the laboratory. It will be used for the first session. The following laparoscopic equipment is current available in our operating rooms:
- Laparoscope: Storz Telecam (Karl-Storz Endoscopy, Tuttlingen, Germany)
- Video Monitor: Trinitron HR Monitor (Sony Corp, Tokyo, Japan)
- Insufflator: AirSeal (SurgiQuest)
- Light Source: Xenon 300 (Karl-Storz)
- Fiber-Optic Cable: Karl-Storz
- Laparoscopic Lenses: 10 mm; 0°, 30°, 45° lenses (Karl-Storz)
- Laparoscopic Instruments: a variety of necessary laparoscopic instruments (graspers, dissectors, scissors, needle drivers) are available to perform the laparoscopic procedures (Applied, Karl Storz)
BIOGRAPHICAL SKETCH

NAME
Sam Atallah, MD, FASCRS, FACS

POSITION
Center for Colon & Rectal Surgery/ Florida Hospital Medical Group, Orlando, FL

EDUCATION AND TRAINING (Begin with baccalaureate or other initial professional education)

<table>
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<tr>
<th>INSTITUTION AND LOCATION</th>
<th>DEGREE (if applicable)</th>
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<td>Texas State University – San Marcos</td>
<td>BBA</td>
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<td>Texas State University – At Austin</td>
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<td>UT-Southwestern Genome Center</td>
<td>93/96</td>
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<td>Texas State University – Southwestern Medical School</td>
<td>MD</td>
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<td>Medicine</td>
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<tr>
<td>University of Texas- Houston, Houston, TX</td>
<td>Residency</td>
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<td>General Surgery</td>
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<tr>
<td>University of Texas- Houston, Houston, TX</td>
<td>Clinical Fellowship</td>
<td>07/07</td>
<td>Colon &amp; Rectal Surgery</td>
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A. Personal statement
I have been actively engaged in research regarding advanced procedures, most notably as the pioneer of TAMIS, Robotic Transanal Surgery, hybrid NOTES transanal TME, and other innovative approaches to minimally invasive surgery, such as VAMIS. I have continued interest in developing minimally invasive approaches, and believe that NOTES transcecal appendectomy is a viable project with potentially important clinical application.

Current Positions
2015-present Chairman, Department of Colon and Rectal Surgery, Florida Hospital, Orlando, FL
2010-present Clinical Assistant Professor of Surgery, Florida State University
2010-present Co-Founder, Florida Hospital Colon & Rectal Surgery Fellowship Program
2009-present Associate Professor of Surgery, University of Central Florida, College of Medicine,

A. Selected Peer-reviewed Publications
3. Atallah, Sam, Snyder, M., Bailey, H. The Cutaneous Advancement Flap is an Excellent Option for Complicated Anal Fistulas Closure. Diseases of the Colon & Rectum. 2009 April;52:4, 841


Membership in Professional Societies

- SAGES member
- American Society of Colon and Rectal Surgery (ASCRS) Resident member
- American Medical Association
B. Research support

**Ongoing Research Support**

Rectal Cancer DNA analysis with clinical outcomes and prediction of lymph node metastasis  
Funding: $10,000 Bankhead Cooley Grant  
Role: Principal Investigator

Assessment of Transanal Hemorrhoidal Dearterialization (THD) for patient on anti-coagulation, a case-control study  
Funding: $10,000 THD America, Inc Grant  
Role: Principal Investigator

**Completed Research Support**

No number  
Atallah (PI)  
March 2014  
Applied Medical Inc  
Role: Principal Investigator
# BIOGRAPHICAL SKETCH

<table>
<thead>
<tr>
<th>NAME</th>
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<tbody>
<tr>
<td>Beatriz Martin-Perez, MD</td>
<td>International Clinical Research Fellow Center for Specialized Surgery Florida Hospital, Orlando, Florida</td>
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## EDUCATION AND TRAINING *(Begin with baccalaureate or other initial professional education)*

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<tr>
<th>INSTITUTION AND LOCATION</th>
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<td>Universidad de Extremadura, Spain</td>
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<tr>
<td>Hospital Universitario Virgen Macarena, Seville, Spain</td>
<td>Residency</td>
<td>08/13</td>
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<td>Florida Hospital, Orlando, Florida</td>
<td>Research Fellowship</td>
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## B. Positions and Honors

### Positions and employment

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<th>Date</th>
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<tr>
<td>August 1999-June 2000</td>
<td>11th grade High School, Ross High School. Ross, Ohio</td>
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<tr>
<td>September 2004-June 2005</td>
<td>Erasmus Fellowship: 4th year of Medical School. University of Bourgogne, Dijon, France</td>
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<tr>
<td>June-July 2011</td>
<td>Honorary Clinical Assistant, St Mark’s Hospital &amp; Academic Institute, London (UK)</td>
</tr>
<tr>
<td>October-November 2011</td>
<td>Clinical Assistant, Angiology and Vascular Surgery Unit, Hospital Universitario Virgen de Valme, Seville (Spain)</td>
</tr>
<tr>
<td>March-April 2012</td>
<td>Observership, Colon and Rectal Surgery Center, Florida Hospital, Orlando, Florida</td>
</tr>
<tr>
<td>May 2012</td>
<td>Clinical Assistant, Hepatobiliarypancreatic and Liver Transplantation Surgery Unit, Hospital Universitario Virgen del Rocío, Seville (Spain)</td>
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### Other experience and professional memberships

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<tr>
<td>1989-2003</td>
<td>Elemental and Middle Degree in Violin. Superior Conservatory of Music, Badajoz, Spain</td>
</tr>
<tr>
<td>1990-2013</td>
<td>Member of national and international choirs and orchestras</td>
</tr>
<tr>
<td>1994-2002</td>
<td>Music and violin specialization courses</td>
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<tr>
<td>1990-1997</td>
<td>First to seventh grade of the Royal Academy of Dancing of London</td>
</tr>
<tr>
<td>July 1991</td>
<td>Royal Academy of Dancing of London Course. London, UK</td>
</tr>
<tr>
<td>June 1997</td>
<td>Second award in the children’s literature contest organised by the City of Badajoz, Badajoz, Spain</td>
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Awards and honors

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<td>September 2004-June 2005</td>
<td>Erasmus Fellowship: 4th year of Medical School. University of Bourgogne, Dijon, France</td>
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<tr>
<td>2006-2007</td>
<td>Scholarship from the Microbiology Department. School of Medicine. University of Extremadura, Badajoz, Spain</td>
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<tr>
<td>2007</td>
<td>Award of Outstanding Graduate of the Year. School of Medicine. University of Extremadura, Badajoz, Spain</td>
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<tr>
<td>2008-2009</td>
<td>Diploma of Advanced Studies. Doctoral program “Surgery updates”. Award of outstanding project. School of Medicine. Surgery Department University of Seville, Seville, Spain</td>
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<tr>
<td>2011</td>
<td>Scholarship from the Andalusian Surgeon Association (ASAC) for observership at St. Mark’s Hospital, London, UK</td>
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C. Selected Peer-reviewed Publications


Other publications to current application


Membership in Professional Societies
- SAGES candidate member
- American College of Surgeons (ACS) Resident member
- American Society of Colon and Rectal Surgery (ASCRS) Resident member
- European Society of Coloproctology (ESCP) member
- Spanish Surgeons Association (AEC) member
- Andalusian Surgeons Association (ASAC) member
- Extremadura Surgeons Society (AEX) member

D. Research support
Ongoing Research Support
None
Completed Research Support

No number Atallah (PI) March 2014

Applied Medical Inc


Role: Co-Investigator and Research Coordinator
# BIOGRAPHICAL SKETCH

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<tr>
<td>Sergio W. Larach, MD, FASCRS, FACS</td>
<td>Digestive &amp; Liver Center of Florida, Orlando, FL</td>
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## EDUCATION AND TRAINING (Begin with baccalaureate or other initial professional education)

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## A. Positions and Honors

### Positions and employment

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<td>Assistant Instr. &amp; Preceptor-Anatomy, University of Chile, Santiago, Chile</td>
</tr>
<tr>
<td>1969 – 1971</td>
<td>Assistant Instructor of Surgery Dept. Hospital del Salvador, Santiago, Chile</td>
</tr>
<tr>
<td>1977-2002</td>
<td>Colon &amp; Rectal Clinic of Orlando. Physician &amp; CEO, Orlando, FL</td>
</tr>
<tr>
<td>1977-2002</td>
<td>Assistant Instructor of Surgery, Orlando Regional Medical Center, Orlando, Fl.</td>
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<tr>
<td>1986</td>
<td>President of the Colon &amp; Rectal Division Southern Medical Association</td>
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<tr>
<td>1986 – 1987</td>
<td>Self- Assessment Committee of American Society of Colon &amp; Rectal Surgeons</td>
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<tr>
<td>1986 – 1995</td>
<td>Clinical Assistant Professor, University of Florida – College of Medicine Gainesville, Fl.</td>
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<tr>
<td>1986 – 2003</td>
<td>Surgical Consultant, University of Florida – College of Medicine, Gainesville, Fl.</td>
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<td>1987</td>
<td>President of the American Cancer Society</td>
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<tr>
<td>1987</td>
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<tr>
<td>1990 – 1994</td>
<td>Health Advisory Council Board Member of the College of Health &amp; Public Affairs, University of Central Florida, Orlando, FL</td>
</tr>
<tr>
<td>1990-2002</td>
<td>Program Director, Colon &amp; Rectal Fellowship Program, Orlando Regional Healthcare System, Orlando, FL</td>
</tr>
</tbody>
</table>
1992 – 1995
Social Impact Committee of American Society of Colon & Rectal Surgeons

1992 – 1995
Southern Medical Journal Abstract Reviewer

1993 – 1995
Membership Committee for the Orange Co. Medical Society

1993 – 1995
Editorial Committee for the Orange Co. Medical Society

1994 – 2008
Research Foundation Awards Panel of American Society of Colon & Rectal Surgeons

1995 - 2002
Audio-Visual Committee of the Int’l Society of the University of Colon & Rectal Surgeons

1995 – 2003
Associate Professor of Surgery, University of Florida – College of Medicine, Gainesville, Fl.

1996-200
Abstract Reviewer for Diseases of the Colon & Rectum

1997-1999
Awards Committee of the American Society Colon & Rectal Surgeons

1997-2000
Associate Board Examiner of the American Society Colon & Rectal Surgeons

1997-2002
Membership Committee of the American Society Colon & Rectal Surgeons

1997-2002
Cost Study Group Committee of the American Society Colon & Rectal Surgeons

1997-2007
International Scholarship Committee of the American Society Colon & Rectal Surgeons

1999- 2002
Core Curriculum Committee for the Program Directors Association Colon & Rectal Surgery

1999 – 2004
Public Relations Committee of the American Society of Colon Rectal & Surgeons

2000-present
Techniques of Coloproctology Abstract Reviewer

2000-2008
Associate Treasurer of the International Society of University of Colon and Rectal Surgeons

2002 – 2003
Vice President of the American Society of Colon & Rectal Surgeons

2002-2008
Colon & Rectal Disease Center, Orlando, FL

2005 – 2009
Program Director, Minimally Invasive Surgery Program Florida Hospital Medical Center, Orlando, Fl.

2008-2014
Center for Colon & Rectal Surgery, Florida Physicians Medical Group/Florida Hospital, Orlando, FL

2008-present
Surgical Endoscopy Reviewer

2008-present
Surgical Endoscopy Reviewer

2009-present
Program Director of the Colon & Rectal Fellowship Program. Florida Hospital, Orlando, FL

2010-2014
Research Foundation Board Member of the American Society of Colon & Rectal Surgeons

2011-present
Clinical Associate Professor, University of Central Florida, Orlando, FL

2011-present
Clinical Associate Professor, Florida State University, Orlando, Fl

2012-present
Associate Dir. International Advisory Affairs of the International Society of University of Colon and Rectal Surgeons

2014- present
Digestive & Liver Center of Florida, Orlando, FL

B. Positions and honors
“Top Doctors in Orlando”, Orlando Magazine Dec 2012
“Top Doctors in Orlando”, Orlando Magazine Dec. 2011
“Top Doctors in Orlando”, Orlando Magazine Dec. 2008
The Sergio W. Larach Award – created in honor
of Dr. Larach by the Colon & Rectal Clinic of
Ft. Lauderdale and WSRMC. March 2005
“Top Doctors in Orlando”, Orlando Magazine Dec. 2004
“Top Doctors in Orlando”, Orlando Magazine Dec. 2003
Asociacion Mexicana de Cirugia Endoscopica 2001
“Top Doctors in Orlando”, Orlando Magazine Dec. 2001
“The 318 Top Cancer Specialists for Women”
Good Housekeeping Magazine Mar. 1999
American Medical Association Award 1977 – 1981
The Walter A. Fansler Travel & Education Award Dec. 1979
The Purdue Frederick Fellowship Dec. 1976

C. Selected Peer-reviewed Publications


Membership in Professional Societies
• Association Latinoamericana de Coloproctologia 1999
• Society of Laproendoscopic Surgeons 1997
• Sociedad Chilena de Proctologia 1994
• Sociedad Venezelana de Coloproctologia 1987
• Pan American Society 1981
• Gold Eagle Society 1981
• Harry Beacon Society 1981
• National Foundation of Ileitis & Colitis 1981
• American Cancer Society of Orange County 1981
• Florida Gastroenterologic Society 1981
• Society of American Gastrointestinal
• Endoscopic Surgeons 1981
• American College of Surgeons 1981
• Int’l Society of University of Colon &
• Rectal Surgeons 1979
• Int’l Academy of Proctology 1979
• Florida Society of Colon & Rectal Surgeons 1979
• American Society of Colon & Rectal Surgeons 1979
• International College of Surgeons 1979
• Orange County Medical Society 1975
• Florida Medical Association 1973
• American Medical Association 1973
• Colegio Medico Regional Antofagasta 1971
• Colegio Medico de Chile 1968

D. Research support

Ongoing Research Support
None

Completed Research Support
No number Atallah (PI) March 2014
Applied Medical Inc
Role: Co-Investigator
BIOGRAPHICAL SKETCH

NAME
Lawna Hunter, BA

POSITION
Research Assistant at the Center for Colon & Rectal Surgery/ Florida Hospital Medical Group, Orlando, FL

EDUCATION AND TRAINING *(Begin with baccalaureate or other initial professional education)*

<table>
<thead>
<tr>
<th>INSTITUTION AND LOCATION</th>
<th>DEGREE <em>(if applicable)</em></th>
<th>MM/YY</th>
<th>FIELD OF STUDY</th>
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<tbody>
<tr>
<td>Santa Fe College, Gainesville, FL</td>
<td>Associate of Arts</td>
<td>08/10</td>
<td>Psychology</td>
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<tr>
<td>Rollins College, Winter Park, FL</td>
<td>Bachelors of Arts Associate</td>
<td>10/12</td>
<td>Psychology</td>
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<tr>
<td>University of Central Florida, Orlando, FL</td>
<td>N/A</td>
<td>12/14</td>
<td>Biomedical Sciences</td>
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A. Positions and Honors

**Positions and employment**

<table>
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<tr>
<th>Date</th>
<th>Position</th>
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<tbody>
<tr>
<td>2013 to present</td>
<td>Research assistant with The Center For Colon And Rectal Surgery at Florida Hospital</td>
</tr>
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</table>

**Awards and honors**

<table>
<thead>
<tr>
<th>Date</th>
<th>Award</th>
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<tbody>
<tr>
<td>2012</td>
<td>Outstanding Academic in Psychology</td>
</tr>
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</table>

B. Selected Peer-reviewed Publications


C. Research support

Ongoing Research Support
None

Completed Research Support

No number  Atallah (PI)  March 2014

Applied Medical Inc
Role: Co-Investigator
PARTICIPATION IN SAGES

Sam Atallah, MD, Beatriz Martin-Perez, MD, Sergio W. Larach, MD, and Lawna Hunter, BA: have participated in several meeting at SAGES from 2009 up to 2014 with several podium presentations and posters other that those mentioned above (Albert, Matthew, Atallah, Sam, Larach, Sergio, MD, Parra-Davila, MD. Vessel sealing in laparoscopic colonic surgery; Sam Atallah, Matthew Albert, , Teresa Deboche-adams, , Seema Izfar, Sergio Larach. Transanal Minimally Invasive Surgery (TAMIS): First Cancer Resection with Two Year Follow-Up Endoscopy; Albert, Matthew, Atallah, Sam, Larach, Sergio. Parra-Davila, E. Hand Assisted Laparoscopic Surgery In The Morbidly Obese Patient: Does It Have An Advantage Over ‘Pure’ Laparoscopy?) among which it was found the Best of Video podium presentation at 2011 Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) Scientific Session and Postgraduate Course (Sam Atallah, MD: Sam Atallah, MD, Teresa deBeche-Adams, MD, Matthew Albert, MD, Sergio Larach, MD. Drainoscopy. San Antonio, TX. March 30-April 2, 2011).

Dr. Martin-Perez has attended the annual meeting 2014 where she presented the video “Transanal minimally invasive surgery (TAMIS) for full-thickness excision of an upper rectal neoplasm, requiring laparoscopic assistance for suture closure of a peritoneal violation” (Beatriz Martin-Perez MD, Francisco Quinteros MD, Henry Schoonyoung MD, Lawna Hunter BA, George Nassif DO, Matthew Albert MD, Sam Atallah MD). She participated on the podium presentation at the “ Concurrent Session SS1 MIS/Solid organ” with the video “Real-time intraoperative endoscopic fluorescence imaging for evaluation of perfusion in the setting of ischemic colitis” (Sam Atallah MD, Francisco Quinteros MD, Henry Schoonyoung MD, Beatriz Martin-Perez MD, Lawna Hunter BA, Sergio Larach MD) as well as in the posters “Defining the learning curve for transanal minimally invasive surgery (TAMIS)” (Henry Schoonyoung MD, Francisco Quinteros MD, Beatriz Martin-Perez MD, Lawna Hunter BA, George Nassif DO, Teresa deBeche-Adams MD, Sergio Larach MD, Matthew Albert MD, Sam Atallah MD) and the video at the Emerging Technology Poster Listing “Transanal total mesorectal excision with real-time, image-guided stereotaxy” (Sam Atallah MD, George Nassif DO, Beatriz Martin-Perez MD, Sergio Larach MD).

Dr. Larach is part of committees of SAGES and has participated as speaker as well.