

# **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 a 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 tranecal 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 to 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 transecal 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 transecal 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 transecal approach, to the best of our knowledge.

### **Preliminary data**

There currently no preliminary data on NOTES appendectomy via a transecal 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 transceally 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 taken on the laboratory: scrubs, gowns, gloves, masks, shoe 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 be 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 used 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 CO<sub>2</sub>
  - 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

NAME	POSITION TITLE	TIME/EFFORT		SALARY	FRINGE BENEFITS	SUB-TOTALS
		%	Hrs/week			
1. Sam Atallah	Principal Investigator	10%	25			
2. Beatriz Martin-Perez	Co-I	10%	25			
3. Sergio W. Larach	Co-I	2%	2			
4. Lawna Hunter	Co-I	5%	5	\$37,500	12.5%	\$432
<b>CONSULTANT COSTS</b>						
<b>EQUIPMENT</b>						
<b>(List all Items&amp; Total Equipment Cost)</b>						
	Items					Subtotal
	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
	2. 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
<b>SUPPLIES</b>						
	Items					

<b>(List all Items&amp; Total Equipment Cost)</b>		
<b>TRAVEL**</b>	PI travel to SAGES	\$2000
<b>PATIENT CARE COSTS</b>		
<b>CONSORTIUM/CONTRACTUAL COSTS</b>		
<b>OTHER EXPENSES</b>		
<b>(List all Items&amp;Total Cost)</b>		
<b>TOTAL DIRECT COSTS</b>		\$18400

## References

1. Rao P, Reddy N. (2004) Per oral transgastric endoscopic appendectomy in human” Proceedings of the 45<sup>th</sup> Annual Conference of the Society of Gastrointestinal Endoscopy of India, pp. 28-29. Jaipur, India.
2. Easter DW, Savu MK, Ramamoorthy SL, Whitcomb E, Agarwal S, Lukacz E, Dominguez G, Ferraina P. Natural orifice surgery: initial clinical experience. *Surg Endosc.* 2009 Jul;23(7):1512-8. doi: 10.1007/s00464-009-0428-0. Epub 2009 Apr 3.
3. Marescaux, Jacques, et al. "Surgery without scars: report of transluminal cholecystectomy in a human being." *Archives of Surgery* 142.9 (2007): 823-826.
4. Arezzo A, Zornig C, Mofid H, Fuchs KH, Breithaupt W, Noguera J, Kaehler G, Magdeburg R, Perretta S, Dallemagne B, Marescaux J, Copaescu C, Graur F, Szasz A, Forgione A, Pugliese R, Buess G, Bhattacharjee HK, Navarra G, Godina M, Shishin K, Morino M. The EURO-NOTES clinical registry for natural orifice transluminal endoscopic surgery: a 2-year activity report. *Surg Endosc.* 2013 Sep;27(9):3073-84.
5. Inoue H, Kudo SE. [Per-oral endoscopic myotomy (POEM) for 43 consecutive cases of esophageal achalasia]. *Nihon Rinsho.* 2010;68:1749-1752.
6. Inoue H, Minami H, Kobayashi Y et al. Peroral endoscopic myotomy (POEM) for esophageal achalasia. *Endoscopy.* 2010;42:265-271.
7. Wolthuis AM, Penninckx F, D’Hoore A. Laparoscopic sigmoid resection with transrectal specimen extraction has a good short-term outcome. *Surg Endosc* 2011; 25: 2034–8.
8. Nishimura A, Kawahara M, Suda K et al. Totally laparoscopic sigmoid colectomy with transanal specimen extraction. *Surg Endosc* 2011; May 7. [Epub ahead of print] doi: 10.1007/s00464-011-1716-z.
9. Saad S, Hosogi H. Laparoscopic left colectomy combined with natural orifice access: operative technique and initial results. *Surg Endosc* 2011; 25: 2742–7.
10. Atallah S, Martin-Perez B, Albert M, Schoonyoung H, Quinteros F, Hunter L, Larach S. Vaginal Access Minimally Invasive Surgery (VAMIS): A New Approach to Hysterectomy. *Surg Innov.* 2015 Aug;22(4):344-7. doi: 10.1177/1553350614560273. Epub 2014 Nov 27.
11. Rao GV, Reddy DN, Banerjee R. NOTES: human experience. *Gastrointest Endosc Clin N Am.* 2008 Apr;18(2):361-70; x. doi: 10.1016/j.giec.2008.01.007.
12. Zorron R, Palanivelu C, Galvão Neto MP, Ramos A, Salinas G, Burghardt J, DeCarli L, Henrique Sousa L, Forgione A, Pugliese R, Branco AJ, Balashanmugan TS, Boza C, Corcione F, D’Avila Avila F, Arturo Gómez N, Galvão Ribeiro PA, Martins S, Filgueiras M, Gellert K, Wood Branco A, Kondo W, Inacio Sanseverino J, de Sousa JA, Saavedra L, Ramírez E, Campos J, Sivakumar K, Rajan PS, Jategaonkar PA, Ranagrajan M, Parthasarathi R, Senthilnathan P, Prasad M, Cuccurullo D, Müller V. International multicenter trial on clinical natural orifice surgery--NOTES IMTN study: preliminary results of 362 patients. *Surg Innov.* 2010 Jun;17(2):142-58. doi: 10.1177/1553350610370968.
13. Lehmann KS, Ritz JP, Wibmer A, Gellert K, Zornig C, Burghardt J, Büsing M, Runkel N, Kohlhaw K, Albrecht R, Kirchner TG, Arlt G, Mall JW, Butters M, Bulian DR, Bretschneider J, Holmer C, Buhr HJ. The German registry for natural orifice transluminal endoscopic surgery: report of the first 551 patients. *Ann Surg.* 2010 Aug;252(2):263-70. doi: 10.1097/SLA.0b013e3181e6240f.

14. Teitelbaum EN, Soper NJ, Santos BF et al. Symptomatic and physiologic outcomes one year after peroral esophageal myotomy (POEM) for treatment of achalasia. *Surg Endosc.* 2014
15. Pescarus R, Shlomovitz E, Swanstrom LL. Per-oral endoscopic myotomy (POEM) for esophageal achalasia. *Curr Gastroenterol Rep.* 2014;16:369.
16. Swanstrom LL, Rieder E, Dunst CM. A stepwise approach and early clinical experience in peroral endoscopic myotomy for the treatment of achalasia and esophageal motility disorders. *J Am Coll Surg.* 2011;213:751-756.
17. Marks J, Mizrahi B, Dalane S, Nweze I, Marks G. Laparoscopic transanal abdominal transanal resection with sphincter preservation for rectal cancer in the distal 3 cm of the rectum after neoadjuvant therapy. (2010) *Surg Endosc.* Nov;24(11):2700-7. Epub 2010 Apr 23.
18. Marks J., Frenkel, J., D'Andrea, A., Greenleaf, C. Maximizing rectal cancer results: TEM and TATA techniques to expand sphincter preservation. (2011) *Journal of Surgical Oncology* Jul;20(3):501-20.
19. R J Heald The 'Holy Plane' of rectal surgery. *J R Soc Med.* 1988 September; 81(9): 503–508.
20. Franklin ME Jr, Ramos R, Rosenthal D, Schuessler W. Laparoscopic colonic procedures. *World J Surg.* 1993 Jan-Feb;17(1):51-6.
21. Franklin ME Jr, Liang S, Russek K. Natural orifice specimen extraction in laparoscopic colorectal surgery: transanal and transvaginal approaches. *Tech Coloproctol.* 2013 Feb;17 Suppl 1:S63-7. doi: 10.1007/s10151-012-0938-y. Epub 2012 Dec 19.
22. Atallah S, Martin-Perez B, Keller D, Burke J, Hunter L. Natural-orifice transluminal endoscopic surgery. *Br J Surg.* 2015 Jan;102(2):e73-92. doi: 10.1002/bjs.9710. Review.

## **LOCAL/INSTITUTION REVIEW BOARD**

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		POSITION	
Sam Atallah, MD, FASCRS, FACS		Center for Colon & Rectal Surgery/ Florida Hospital Medical Group, Orlando, FL	
<i>EDUCATION AND TRAINING (Begin with baccalaureate or other initial professional education)</i>			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Texas State University – San Marcos	BBA	90/91	
Texas State University – At Austin		91/92	Biology
Harvard University		92/93	Molecular Genetics
UT-Southwestern Genome Center		93/96	Human Genome Project
Texas State University – Southwestern Medical School	MD	07/00	Medicine
University of Texas- Houston, Houston, TX	Residency	07/06	General Surgery
University of Texas- Houston, Houston, TX	Clinical Fellowship	07/07	Colon & Rectal Surgery

### 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

1. Felix O, Albert M, Izfar S, Atallah S, DeBeche-Adams TH, Larach S, Cawich SO. Laparoscopic colectomy for acute complicated diverticulitis: Feasibility and safety of a totally laparoscopic single stage approach. *West Ind Med J.* 2012; 61(S4): 52-53.
2. Atallah, Sam, Albert, Matthew, Larach, Sergio. Transanal Minimally Invasive Surgery- A Giant Leap Forward. *Surgical Endoscopy.* September, 2010.
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

4. Atallah S, Albert M, Larach S. Technique for constructing an incisionless laparoscopic stoma. 2011 Sep;15(3):345-7. Epub 2011 Jun 16 *Tech Coloproctol*.
5. Atallah S, Albert M, T. deBeche-Adams, Larach S. Sept. 28, 2011 [epub ahead of print] *Tech Coloproctol*. Robotic transanal minimally invasive surgery in a cadaveric model.
6. Atallah S, Albert M., T. deBeche-Adams, Larach S. The Altemeier Procedure Using Biologic Mesh. October 2011 [epub, ahead of print] *Tech Coloproctol*.
7. Ehrlich PF, Seidman PS, Atallah O, Haque A, Helmkamp J. Endotracheal intubations in rural pediatric trauma patients *J Pediatr Surg*. 2004 Sep;39(9):1376-80
8. Atallah S, Parra-Davila E, deBeche-Adams T, Albert M, Larach S. Excision of a rectal neoplasm using robotic transanal surgery (RTS): a description of the technique. *Tech Coloproctol*. 2012 May 15. [Epub ahead of print] Atallah S, Albert M, Felix O, Izfar S, Debeche-Adams T, Larach S. The technical approach to laparoscopic colectomy in patients who have undergone prior abdominoplasty *Tech Coloproctol*. 2012 Aug 31. [Epub ahead of print]
9. Atallah S. Different surgeons find same solution for minimally invasive stoma construction *Dis Colon Rectum*. 2012 Jul;55(7):e302. PMID: 22706139
10. Atallah S., Albert M, deBeche-Adams T, Larach S. Transanal minimally invasive surgery (TAMIS): applications beyond local excision. *Tech Coloproctol*. 2012 Dec 4 [Epub ahead of print]. Atallah S, et al. Transanal minimally invasive surgery for total mesorectal excision (TAMIS-TME): a stepwise description of the surgical technique with video demonstration. Jan 2013, *Tech Coloproctol*. [epub ahead of print].
11. Albert M, Atallah S, deBeche-Adams T, Izfar S, Larach S. Transanal Minimally Invasive Surgery (TAMIS) for local excision of benign neoplasms and early-stage rectal cancer: Efficacy and outcomes in the first 50 patients. *Dis Colon Rectum*. 2013. Mar;56(3):301-7.
12. Atallah S, Martin-Perez B, Albert M, Debeche-Adams T, Nassif G, Hunter L, Larach S. Transanal minimally invasive surgery for total mesorectal excision (TAMIS-TME): results and experience with the first 20 patients undergoing curative-intent rectal cancer surgery at a single institution. *Tech Coloproctol*. 2014 May;18(5):473-80. doi: 10.1007/s10151-013-1095-7. Epub 2013 Nov 23.
13. Martin-Perez B, Andrade-Ribeiro GD, Hunter L, Atallah S. A systematic review of transanal minimally invasive surgery (tamis) from 2010 to 2013. *Tech Coloproctol*. May 7 2014. DOI 10.1007/s10151-014-1148-6
14. Atallah S, Quinteros F, Martin-Perez B, Larach S. Robotic transanal surgery for local excision of rectal neoplasms. *J Rob Surg* 2014. Epub April 22. DOI 10.1007/s11701-014-0463-2
15. Atallah S, Martin-Perez B, Pinan J, Quinteros F, Schoonyoung H, Albert M, Larach S. Robotic transanal total mesorectal excision: a pilot study. *Tech Coloproctol*. 2014 Jun 24. [Epub ahead of print]
16. Burke JP, Atallah S, Albert MR. Transanal endoscopic resection with peritoneal entry: a word of reason. *Tech Coloproctol*. 2015 Oct;19(10):663-4. doi: 10.1007/s10151-015-1363-9. Epub 2015 Sep 10. No abstract available.
17. Atallah S, Martin-Perez B, Larach S. Image-guided real-time navigation for transanal total mesorectal excision: a pilot study. *Tech Coloproctol*. 2015 Jul 9. [Epub ahead of print]
18. Atallah S, deBeche-Adams T, Imam Z, Amir K. Drainoscopy: a doorway to the abdomen in the post-surgical patient. *Tech Coloproctol*. 2015 Aug;19(8):483-6. doi: 10.1007/s10151-015-1335-0. Epub 2015 Jul 7.
19. Atallah S. The dawn of the digital operating theatre and the rise of the digital surgeon. *Tech Coloproctol*. 2015 Sep;19(9):499-501. doi: 10.1007/s10151-015-1325-2. Epub 2015 Jun 17. No abstract available.
20. Atallah S, Drake J, Martin-Perez B, Kang C, Larach S. Robotic transanal total mesorectal excision with intersphincteric dissection for extreme distal rectal cancer: a video demonstration.



- Tech Coloproctol. 2015 Jul;19(7):435. doi: 10.1007/s10151-015-1304-7. Epub 2015 May 12. No abstract available.
21. Quddus A, Martin-Perez B, Schoonyoung H, Albert M, Atallah S. Toxic megacolon during pregnancy in ulcerative colitis: A case report. *Int J Surg Case Rep.* 2015;11:83-6. doi: 10.1016/j.ijscr.2015.04.033. Epub 2015 Apr 29.
  22. Atallah S, Martin-Perez B, Drake J, Stotland P, Ashamalla S, Albert M. The use of a lighted stent as a method for identifying the urethra in male patients undergoing transanal total mesorectal excision: a video demonstration. *Tech Coloproctol.* 2015 Jun;19(6):375. doi: 10.1007/s10151-015-1297-2. Epub 2015 Mar 28. No abstract available.
  23. Atallah S, Martin-Perez B, Parra-Davila E, deBeche-Adams T, Nassif G, Albert M, Larach S. Robotic transanal surgery for local excision of rectal neoplasia, transanal total mesorectal excision, and repair of complex fistulae: clinical experience with the first 18 cases at a single institution. *Tech Coloproctol.* 2015 Jul;19(7):401-10. doi: 10.1007/s10151-015-1283-8. Epub 2015 Feb 24.
  24. Atallah S, Martin-Perez B, Keller D, Burke J, Hunter L. Natural-orifice transluminal endoscopic surgery. *Br J Surg.* 2015 Jan;102(2):e73-92. doi: 10.1002/bjs.9710. Review.
  25. Atallah S. Transanal total mesorectal excision: full steam ahead. *Tech Coloproctol.* 2015 Feb;19(2):57-61. doi: 10.1007/s10151-014-1254-5. Epub 2015 Jan 6. No abstract available.
  26. Atallah S, Martin-Perez B, Albert M, Schoonyoung H, Quinteros F, Hunter L, Larach S. Vaginal Access Minimally Invasive Surgery (VAMIS): A New Approach to Hysterectomy. *Surg Innov.* 2015 Aug;22(4):344-7. doi: 10.1177/1553350614560273. Epub 2014 Nov 27.
  27. Atallah S, Nassif G, Larach S. Stereotactic navigation for TAMIS-TME: opening the gateway to frameless, image-guided abdominal and pelvic surgery. *Surg Endosc.* 2015 Jan;29(1):207-11. doi: 10.1007/s00464-014-3655-y. Epub 2014 Jun 28.
  28. Atallah S, Martin-Perez B, Pinan J, Quinteros F, Schoonyoung H, Albert M, Larach S. Robotic transanal total mesorectal excision: a pilot study. *Tech Coloproctol.* 2014 Nov;18(11):1047-53. doi: 10.1007/s10151-014-1181-5. Epub 2014 Jun 24.
  29. Atallah SB, deBeche-Adams TC, Larach S. Transanal minimally invasive surgery for repair of rectourethral fistula. *Dis Colon Rectum.* 2014 Jul;57(7):899. doi: 10.1097/DCR.0000000000000136. No abstract available
  30. Atallah S. Robotic transanal minimally invasive surgery for local excision of rectal neoplasms (*Br J Surg* 2014; 101: 578-581). *Br J Surg.* 2014 Apr;101(5):581. doi: 10.1002/bjs.9467. No abstract available.

### **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

Title: Experimental cadaver laboratory for Vaginal Access Minimally Invasive Surgery (VAMIS). Project goal: Investigate a new approach to hysterectomy using Vaginal Access Minimally Invasive Surgery (VAMIS) on a cadaveric model and its future application on human subjects.

Role: Principal Investigator

## BIOGRAPHICAL SKETCH

NAME		POSITION	
Beatriz Martin-Perez, MD		International Clinical Research Fellow Center for Specialized Surgery Florida Hospital, Orlando, Florida	
EDUCATION AND TRAINING <i>(Begin with baccalaureate or other initial professional education)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Universidad de Extremadura, Spain	MD	01/07	Medicine
Hospital Universitario Virgen Macarena, Seville, Spain	Residency	08/13	General Surgery
Florida Hospital, Orlando, Florida	Research Fellowship	13/14	Colon & Rectal Surgery
Florida Hospital, Orlando, Florida	Clinical Fellowship	14/15	Colon & Rectal Surgery

### B. Positions and Honors

#### Positions and employment

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

#### Other experience and professional memberships

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

## Awards and honors

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

## **C. Selected Peer-reviewed Publications**

1. Gomez-Rosado JC, Capitán-Morales LC, **Martín-Pérez B**, Guerrero-García JM, Valdés-Hernández J, Galán-Álvarez J, Sánchez-Sánchez A, Reyes-Díaz ML. Rectocele management based on khubchandani procedure; our experience. *Colorectal Dis*. 2011(13):47
2. **Martín Pérez B**, Capitán Morales LC, Gómez Rosado JC, Infantes Ormad M, Valdés Hernández J, Reyes Díaz ML, Díaz Milanés JA, Galán Álvarez J, Guerrero García JM, Oliva Mompeán F. Experience in rectovaginal fistulas treatment . *Br J Surg* 2013; 100 (Suppl. 1): 1–20.
3. Atallah S, **Martin-Perez B**, Albert M, Debeche-Adams T, Nassif G, Hunter L, Larach S. Transanal minimally invasive surgery for total mesorectal excision (TAMIS-TME): results and experience with the first 20 patients undergoing curative-intent rectal cancer surgery at a single institution. *Tech Coloproctol*. 2014 May;18(5):473-80. doi: 10.1007/s10151-013-1095-7. Epub 2013 Nov 23.
4. **Martin-Perez B**, Andrade-Ribeiro GD, Hunter L, Atallah S. A systematic review of transanal minimally invasive surgery (tamis) from 2010 to 2013. *Tech Coloproct*. May 7 2014. DOI 10.1007/s10151-014-1148-6
5. Atallah S, Quinteros F, **Martin-Perez B**, Larach S. Robotic transanal surgery for local excision of rectal neoplasms. *J Rob Surg* 2014. Epub April 22. DOI 10.1007/s11701-014-0463-2
6. Atallah S, **Martin-Perez B**, Pinan J, Quinteros F, Schoonyoung H, Albert M, Larach S. Robotic transanal total mesorectal excision: a pilot study. *Tech Coloproctol*. 2014 Jun 24. [Epub ahead of print]
7. Atallah S, **Martin-Perez B**, Albert M, Schoonyoung H, Quinteros F, Hunter L, Larach S. Vaginal Access Minimally Invasive Surgery (VAMIS): A new approach to hysterectomy. *Surg Innov*. In-press
8. Atallah S, **Martin-Perez B**, Keller D, Burke J, Hunter L. Natural Orifice Transluminal Endoscopic Surgery: Reflections on a decade of development. *Br J Surg*. In-press
9. Atallah S, **Martin-Perez B**, Larach S. Image-guided real-time navigation for transanal total mesorectal excision: a pilot study. *Tech Coloproctol*. 2015 Jul 9. [Epub ahead of print]
10. Atallah S, Drake J, **Martin-Perez B**, Kang C, Larach S. Robotic transanal total mesorectal excision with intersphincteric dissection for extreme distal rectal cancer: a video demonstration. *Tech Coloproctol*. 2015 Jul;19(7):435. doi: 10.1007/s10151-015-1304-7. Epub 2015 May 12. No abstract available.

11. Quddus A, **Martin-Perez B**, Schoonyoung H, Albert M, Atallah S. Toxic megacolon during pregnancy in ulcerative colitis: A case report. *Int J Surg Case Rep.* 2015;11:83-6. doi: 10.1016/j.ijscr.2015.04.033. Epub 2015 Apr 29.
12. Atallah S, **Martin-Perez B**, Drake J, Stotland P, Ashamalla S, Albert M. The use of a lighted stent as a method for identifying the urethra in male patients undergoing transanal total mesorectal excision: a video demonstration. *Tech Coloproctol.* 2015 Jun;19(6):375. doi: 10.1007/s10151-015-1297-2. Epub 2015 Mar 28. No abstract available.
13. Atallah S, **Martin-Perez B**, Parra-Davila E, deBeche-Adams T, Nassif G, Albert M, Larach S. Robotic transanal surgery for local excision of rectal neoplasia, transanal total mesorectal excision, and repair of complex fistulae: clinical experience with the first 18 cases at a single institution. *Tech Coloproctol.* 2015 Jul;19(7):401-10. doi: 10.1007/s10151-015-1283-8. Epub 2015 Feb 24.
14. Atallah S, **Martin-Perez B**, Keller D, Burke J, Hunter L. Natural-orifice transluminal endoscopic surgery. *Br J Surg.* 2015 Jan;102(2):e73-92. doi: 10.1002/bjs.9710. Review.
15. Atallah S, **Martin-Perez B**, Albert M, Schoonyoung H, Quinteros F, Hunter L, Larach S. Vaginal Access Minimally Invasive Surgery (VAMIS): A New Approach to Hysterectomy. *Surg Innov.* 2015 Aug;22(4):344-7. doi: 10.1177/1553350614560273. Epub 2014 Nov 27.

#### Other publications to current application

1. Capitán Morales LC, **Martín B**, Sánchez A. Escisión mesorrectal. *Cir. Andal.* 2008; 19: 347-350
2. **Martín Pérez B**, Capitán Morales L, Sánchez Sánchez A, Sánchez Ramírez M, Beltrán Miranda P, Cintas Catena J, Retamar Gentil M, Sánchez Matamoros I, Domínguez Adame E, Ortega Beviá J, Cantillana Martínez J. A propósito del rectocele posterior. *Cir. Andal.* Sept 2008; 19, 3: 259
3. **Martín Pérez B**, Capitán Morales L, Sánchez Sánchez A, Sánchez Ramírez M, Beltrán Miranda P, Cintas Catena J, Retamar Gentil M, Valdés Hernández J, Nogales Muñoz A, Ortega Beviá J, Cantillana Martínez J. Técnica de Khubchandani en el tratamiento del rectocele. *Cir. Andal.* Sept 2008; 19, 3: 259
4. Sánchez A, **Martín B**, Capitán LC, Cintas J, Beltrán P, Sánchez M, Retamar M, Gómez Rosado JC, Cano A, Guerrero JM, Domínguez-Adame E, Jiménez AJ, Ortega JM, Cantillana J. Tratamiento de hemorroides con el sistema de Hemorpex. *Cir. Andal.* Sept 2008; 19, 3: 245
5. Sánchez A, **Martín B**, Capitán LC, Cintas J, Beltrán P, Sánchez M, Retamar M, Gómez Rosado JC, Cano A, Guerrero JM, Domínguez-Adame E, Jiménez AJ, Ortega JM, Cantillana J. Hemorroidectomía con Ligasure. *Cir. Andal* Sept 2008; 19, 3: 245
6. Retamar Gentil M, Marengo de la Cuadra B, Valdés J, Del Río F, **Martín B**, Vecino C, Ortega J, Oliva F, Cantillana J. Malrotación intestinal en el adulto. A propósito de un caso. *Cir. Andal* Junio 2009; 20, 2: 130
7. Sánchez A, Capitán LC, Sánchez M, Sandoval F, Cintas J, Beltrán P, Vecino C, Retamar M, **Martín B**, Marengo B, Dulanto M, Ruiz A, Curado A, Belisova M, Díaz JA, Gómez JC, Galán J, Guerrero J, Ortega JM, Cantillana J. Hemorroidectomía con HPS. Nuestra experiencia. *Cir. Andal* Junio 2009; 20, 2: 169
8. **Martín Pérez B**, Capitán Morales L, Sánchez Sánchez A, Martín Pérez A, Sánchez Ramírez M, Beltrán Miranda P, Cintas Catena J, Retamar Gentil M, Valdés Hernández J, Nogales Muñoz A, Ortega Beviá J, Cantillana Martínez J. Experiencia en el tratamiento del rectocele con la técnica de khubchandani. *Cir. Andal* Junio 2009; 20, 2: 172
9. **Martín Pérez B**, Capitán Morales L, Sánchez Sánchez A, Martín Pérez A, Sánchez Ramírez M, Beltrán Miranda P, Cintas Catena J, Retamar Gentil M, Sánchez Matamoros I, Domínguez Adame E, Ortega Beviá J, Cantillana Martínez J. Rectocele posterior en el varón. *Cir. Andal* Junio 2009; 20, 2: 172.

10. Ortega JM, Nogales A, **Martín B**, Reyes ML, Cintas J, Curado A, Retamar M, Díaz JA, Dulanto M, Beltrán P, Vecino C, Marengo B, Ruiz A, Belisova M, Mauricio C, Sánchez A, Sánchez M, Oliva F, Cantillana J. Papel de la ASAC en la mejora de la calidad científica y la praxis quirúrgica en Andalucía. *Cir. Andal*, Junio 2010; vol. 21, núm 2: 110
11. **Martín B**, Capitán L, Gómez JC, Guerrero J, Galán J, Cintas J, Curado A, Ortega JM, Cantillana J, Oliva F. Tratamiento del rectocele con la técnica de Khubchandani. Nuestra experiencia. *Cir. Andal* Junio 2010; vol. 21, núm 2: 119
12. Jiménez García A, Marín Velarde C, Díaz Rodríguez M, Pueyo JA, **Martín B**, Bruguera J, Jiménez Calderón MC, Vázquez Zarza V, Vázquez Zarza E, Cantillana Martínez J. Monitorización con registro electrofisiológico de los nervios laríngeo recurrente y laríngeo superior en cirugía de tiroides y paratiroides. *Cir. Andal* Junio 2010; vol. 21, núm 2: 146
13. **Martín B**, Valdés J, Curado A, Cintas J, Dulanto M, Reyes ML, Díaz JA, Martín A, Cantillana J, Ortega J, Oliva F. Hernia diafragmática atraumática en el adulto. *Cir. Andal*, Junio 2010; vol. 21, núm 2: 169
14. **Martín B**, Sánchez-Matamoros I, Retamar M, Cintas J, Curado A, Dulanto M, Reyes ML, Díaz JA, Martín A, Torres A, Nogales A, Ortega JM, Oliva F, Cantillana J. Ruptura traumática de quiste hidatídico hepático. *Cir. Andal*, Junio 2010; vol. 21, núm 2: 236
15. García A, Capitán LC, Capitán LR, Gómez J, Prieto M, Buesa M, Castellanos C, **Martín B**, Galán J, Guerrero J, Ortega J. Estrés pre-quirúrgico en pacientes con cáncer colorectal. *Cir. Andal*. 2010; 21: 369-37
16. **Martín Pérez B**, Moreno Machuca FJ, Diéguez Rascón F, López Lafuente JE. Trombosis venosa profunda en paciente con adenocarcinoma mucinoso de apéndice. Casos clínicos de enfermedad tromboembólica de Andalucía 2011. Edited by the Asociación Andaluza de Hematología y Hemoterapia, Sociedad Andaluza de Angiología y Cirugía Vascul ar y Sociedad Andaluza de Medicina Interna. ISBN: 978-84-8010-236-0. DL: SE3279-2012. Código SAP: PROES003542
17. **Martín Pérez B**, Curado Soriano A, Bellido Luque J, Asensio García J, Rubio Cordero JL, Oliva Mompeán F. Uso de Tachosil® en la prevención de fístula pancreática en tumor pseudopapilar infantil". Anuario 2011. Casos Clínicos en Cirugía. AEC. ISBN; 978-84-694-3167-2.
18. **Martín Pérez B**. Vocabulario científico o tecnicismo en las carreras de ciencias. *Cátedra Nova*. Nº 32. Diciembre 2011 / 107. ISSN: 1135-2981
19. Curado Soriano A, López Ruiz J, **Martín Pérez B**, Reyes Díaz ML, Oliva Mompeán F. Anillo constrictor apendicular: una rara causa de oclusión intestinal" (appendix constrictor ring: a rare cause of intestinal obstruction). *Cir Esp*. 2013;91:60-1.
20. Infantes Ormad M, Capitán Morales LC, Gómez Rosado JC, Valdés Hernández J, **Martín Pérez B**, Castellanos C, Galán Á lvarez J, Guerrero García J, Oliva Mompeán F. Variables influencing the morbidity of rectal cancer surgery. *Br J Surg* 2013; 100 (Suppl. 1): 1–20

#### **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

Title: Experimental cadaver laboratory for Vaginal Access Minimally Invasive Surgery (VAMIS). Project goal: Investigate a new approach to hysterectomy using Vaginal Access Minimally Invasive Surgery (VAMIS) on a cadaveric model and its future application on human subjects.

Role: Co-Investigator and Research Coordinator

## BIOGRAPHICAL SKETCH

NAME		POSITION	
Sergio W. Larach, MD, FASCRS, FACS		Digestive & Liver Center of Florida, Orlando, FL	
EDUCATION AND TRAINING <i>(Begin with baccalaureate or other initial professional education)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
University of Chile, Santiago, Chile	MD	61/67	Medicine
University of Chile -Hospital San Juan de Dios, Santiago, Chile	Internship	67/68	Emergency Medicine
Hospital de Salvador, Santiago, Chile	Residency	68/71	General Surgery
Hospital Antofagasta, Antofagasta, Chile	Residency	71/73	General Surgery
Orlando Regional Medical Center, Orlando, Florida	Residency	73/76	General Surgery
University of Texas Medical School, Houston, Texas	Clinical Fellowship	76/77	Colon & Rectal Surgery

### A. Positions and Honors

#### Positions and employment

Date	Position
1961 – 1966	Assistant Instr. & Preceptor-Anatomy, University of Chile, Santiago, Chile
1969 – 1971	Assistant Instructor of Surgery Dept. Hospital del Salvador, Santiago, Chile
1977-2002	Colon & Rectal Clinic of Orlando. Physician & CEO. Orlando, FL
1977-2002	Assistant Instructor of Surgery, Orlando Regional Medical Center, Orlando, Fl.
1986	President of the Colon & Rectal Division Southern Medical Association
1986 – 1987	Self- Assessment Committee of American Society of Colon & Rectal Surgeons
1986 – 1995	Clinical Assistant Professor, University of Florida – College of Medicine Gainesville, Fl.
1986 – 2003	Surgical Consultant, University of Florida – College of Medicine, Gainesville, Fl.
1987	President of the American Cancer Society
1987	President of the Florida Society of Colon & Rectal Surgeons
1990 – 1994	Health Advisory Council Board Member of the College of Health & Public Affairs, University of Central Florida, Orlando, FL
1990-2002	Ambulatory Surgery Center 1990 – 2002. CEO, Surgical Licensed Ward Orlando, FL
1990-2002	Program Director, Colon & Rectal Fellowship Program, Orlando Regional Healthcare System, Orlando, FL
1991 – 1992	Continuing Education Committee of American Society of Colon & Rectal



1992 – 1995	Surgeons 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. 2009
- “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

1. Furrman GM, **Larach SW**, Williamson PR. “Experienced with Perirectal Fistulas in Perirectal Fistulas in Patients with Crohn’s Disease.” *Diseases of the Colon & Rectum*, 1989; 32: 847-48.
2. Vayer, AJ, **Larach SW**, Williamson PR, Ferrara A, Salomon M. “Cost Effectiveness of Laparoscopic Assisted Colectomy.” *Diseases of the Colon & Rectum*, 36, P 34, 1993.
3. **Larach SW**, Salomon MC, Williamson PR, Goldstein ET. “Laparoscopic-assisted Abdominoperineal Resection” *Surgical Laparoscopy & Endoscopy*, 1993; 3:115-18.
4. **Larach SW**, Salomon MC, Williamson PR, Goldstein ET. “Laparoscopic-assisted Colectomy: Experience During the Learning Curve.” *Coloproctology*, 1993; 1:38-41.
5. **Larach SW**, Hellinger MD. “The Evolving Role of Laparoscopic Technique in the Performance of the Hartmann’s Procedure.” *Surgical Oncology Clinics of North America*, 1994; 3: 717-30.
6. Ferrara A, O’Donovan S, **Larach SW**, Williamson PR. “Computerized Evaluation of Anal Canal Responsiveness and of Rectal Sensation in Chronic Constipation.” *Diseases of the Colon & Rectum*, 37, P 28, 1994.
7. Lord SA, **Larach SW**, Ferrara A, Lago CP, Williamson PR. “Laparoscopic Resections for Colorectal Carcinoma. A three year experience.” *Diseases of the Colon & Rectum*, 38, P 25, 1995-8
8. Lord SA, **Larach SW**, Ferrara A, Lago CP, Williamson PR. “Complications in Laparoscopic Colon and Rectal Surgery.” *Diseases of the Colon & Rectum*, 38, P 45, 1995
9. **Larach, SW**, Ferrara A, Williamson PR. “Laparoscopic-Assisted Anterior Resection with Intracorporeal Stapled Anastomosis.” *Techniques in Coloproctology. UCP News*, 1995; 3: 3-7.
10. Williamson PR, Hellinger MD, **Larach SW**, Ferrara A. “Endorectal Ultrasound of T3 and T4 Rectal Cancers After Preoperative Chemoradiation.” *Diseases of the Colon and Rectum*, 1996; 39: 45-49.
11. **Larach SW**, Perozo SE, Patankar SK, Ferrara A, Williamson PR. “Laparoscopic Colorectal Cancer Surgery: Analysis of 5 year’s experience.” *Southern Medical Journal*, 1996; 89: PS22
12. **Larach SW**, Ferrara A, Panatankar SK, Perozo S, Williamson PR. “Complications in laparoscopic colon and rectal surgery - Analysis and Comparison of Early vs Latter Experience.” *Diseases of the Colon & Rectum* 1997; 40, pp 592-6.
13. Ferrara A, **Larach SW**, Gallagher JT, Patankar SK, Perozo SA, Williamson PR. “Laparoscopic Surgery for Benign Colorectal Disease” *Techniques in Coloproctology*, 1997; 5: 1-4

14. Kassir A, Williamson PR, Patankar S, Lujan H, Perozo S, Ferrara A, **Larach SW**. "Ultrasound-guided sphincter-saving excision of low rectal tumors." *Diseases of the Colon & Rectum*, 1997; 40: A7.
15. **Larach SW**, Gallagher JT, Ferrara A. "Lessons learned from laparoscopic colectomy." *Seminars in Colon & Rectal Surgery*, 1999; 10: 59-63.
16. Patankar S, **Larach SW**, Williamson PR, Ferrara A, Gallagher JT, DeJesus S, Narayanan S. "Prospective comparison of Laparoscopic vs Open Resections for Colorectal Adenocarcinoma at Ten Year follow up." *Diseases of the Colon & Rectum* 2002; 45: A27.
17. Narayanan S, Ferrara A, **Larach SW**, Williamson PR, Gallagher JT, DeJesus S, Patankar SK. "The Impact of Laparoscopic Surgery Training in a Colon and Rectal Surgery Fellowship Program." *JSLs* 2002; 6:235.
18. Weeks JC, Nelson H, Gelber S, Sargent D, Schroeder G, **Larach SW** - (COST) Study Group "Short-term Quality of Life Outcomes Following Laparoscopic-Assisted Colectomy vs. Open Colectomy for Colon Cancer ." *JAMA*, 2002;Vol.287, 3; 321-28
19. Campbell RA, Ferrara A, Joiner, NA, Gallagher JT, **Larach SW**, DeJesus S, Williamson PR, Muller JC. "A 10-Year Study of Laparoscopic Surgery Experience in U.S. - Accredited Fellowship Programs in Colorectal Surgery." *Diseases of the Colon & Rectum* 2004; 47: 624
20. **Larach SW**. The Clinical Outcomes of Surgical Therapy Study Group. "A Comparison of Laparoscopically Assisted and Open Colectomy for Colon Cancer." *The New England Journal of Medicine*, May 13, 2004 Vol. 350, No. 20 p. 2050-2059.
21. Cohen Z, Senagore AJ, Dayton MT, Koruda MJ, Beck DE, Wolff BG, Fleshner PR, Thirlby RC, Ludwig KA, **Larach SW**, Weiss EG, Bauer JJ, Holmdahl L. Prevention of postoperative abdominal adhesions by a novel, glycerol/sodium hyaluronate/carboxymethylcellulose-based bioresorbable membrane: a prospective, randomized, evaluator-blinded multicenter study. *Diseases of the Colon & Rectum*. 2005 Jun;48(6):1130-9.
22. **Larach SW** & Gallagher JT. "Our minimally invasive approach in rectal Cancer." *Contemporary Surgery*, August 2006.
23. Program Directors Association in Colon and Rectal Surgery ; Salum M, Wexner SD, Nogueras JJ, Weiss E, Koruda M, Behrens K, Cohen S, Binderow S, Cohen J, Thorson A, Ternent C, Christenson M, Blatchford G, Pricolo V, Whitehead M, Doveney K, Reilly J, Glennon E, **Larach SW**, Williamson P, Gallagher J, Ferrara A, Harford F, Fry R, Eisenstat T, Notaro J, Chinn B, Yee L, Stamos M, Cole P, Dunn G, Singh A. Does sodium hyaluronate- and carboxymethylcellulose based bioresorbable membrane (Seprafilm) decrease operative time for loop ileostomy closure? *Tech Coloproctol*. 2006 Oct;10(3):187-90; discussion 190-1.
24. Albert M, **Larach SW**, Mancuso P. Evaluation and Treatment of Acute Anorectal Pain. *Urgent Care Medicine*. January 2007.
25. Larson DW, Marcello PW, **Larach SW**, Wexner SD, Park A, Marks J, Senagore AJ, Thorson AG, Young-Fadok TM, Green E, Sargent DJ, Nelson H. Surgeon volume does not predict outcomes in the setting of technical credentialing: results from a randomized trial in colon cancer. *Annals of Surgery*. 2008 Nov;248(5):746-50.
26. Atallah S, Albert M, **Larach SW**. Transanal minimally invasive surgery: a giant leap forward. *Surgical Endoscopy*. 2010 Sep;24(9):2200-5. Epub 2010 Feb 21
27. Albert M, **Larach SW**, Atallah S, Transanal minimally invasive surgery (TAMIS). *Diseases of the Colon & Rectum* 2010 Vol. 53.No.4 p. 525
28. Atallah S, Albert M, H. DeBeche-Adams T, **Larach SW**. Robotic transanal minimally invasive surgery in a cadaveric model. *Tech Coloproctol* 2011 Dec;15(4):461-4. Epub 2011 Sep 28.
29. Atallah S, Albert M, H. DeBeche-Adams T, **Larach SW**. The Altemeier procedure using biologic mesh. *Tech Coloproctol*. 2012 Apr;16(2):149-51. Epub 2011 Nov 9.
30. Atallah S, Parra-Davila E, deBeche-Adams T, Albert M, **Larach SW**. Excision of a rectal neoplasm using robotic transanal surgery (RTS): a description of the technique. *Tech Coloproctol*. 2012 Oct; 16(5):389-92. Epub 2012 May 15.

31. **Larach SW.** Transanal endoscopic microsurgery (TEM) and transanal minimally invasive surgery (TAMIS). *Cirugia Espanola*. 2012 Aug-Sep;90(7):418-20. Epub 2012 Jul 17.
32. Felix O, Albert M, Izfar S, Atallah S, DeBeche-Adams TH, **Larach SW**, Cawich S. Laparoscopic colectomy for acute complicated diverticulitis: Feasibility and safety of a totally laparoscopic single stage approach. *West Indian Medical Journal*. 2012; 61(S4): 52-53.
33. Atallah S, Albert M, H. DeBeche-Adams T, Felix O, Izfar S, **Larach SW**. The technical approach to laparoscopic colectomy in patients who have undergone prior abdominoplasty. *Tech Coloproctol*. 2013 Feb;17(10):111-6.)
34. Albert MR, Atallah SB, Debeche-Adams TC, Izfar S, **Larach SW**. Transanal Minimally Invasive Surgery (TAMIS) for Local Excision of Benign Neoplasms and Early-stage Rectal Cancer: Efficacy and Outcomes in the First 50 Patients. *Diseases of the Colon & Rectum*. 2013 Mar;56(3):301-7.
35. Marcet JE, Nfonsam VN, **Larach SW**. An extended pain relief trial utilizing the infiltration of a long-acting Multivesicular liposome formulation Of bupivacaine, EXPAREL (IMPROVE): a Phase IV health economic trial in adult patients undergoing ileostomy reversal *J Pain Res*. July 2013 Volume 2013:6 Pages 549-555
36. Atallah S, Nassif G, Polavarapu H, deBeche-Adams T, Ouyang J, Albert M, **Larach SW**. Robotic-assisted transanal surgery for total mesorectal excision (RATS-TME): A description of a novel surgical approach with video demonstration. *Tech Coloproctol*. 2013 [in press]. DOI: 10.1007/s10151-013-1039
37. Atallah S, Nassif G, **Larach SW**. Stereotactic navigation for TAMIS-TME: opening the gateway to frameless, image-guided abdominal and pelvic surgery. *Surgical Endoscopy* 2014 June 28.
38. Atallah S, Martin- Perez B, Pinan J, Quinteros F, Schoonyoung H, Albert M, **Larach SW**. Robotic transanal total mesorectal excision: a pilot study. *Tech Coloproctol* 2014 June 24.
39. Atallah S, Martin-Perez B, Albert M, deBeche-Adams T, Nassif G, Hunter L, **Larach SW**. Transanal minimally invasive surgery for total mesorectal excision (TAMIS-TME): results and experience with the first 20 patients undergoing curative-intent rectal cancer surgery at a single institution. *Tech Coloproctol* 2014 May 18(5):473-80.
40. Atallah S, Nassif G, Polavarapu H, deBeche-Adams T, Ouyang J, Albert M, **Larach SW**. Robotic-assisted transanal surgery for total mesorectal excision (RATS-TME): a description of a novel surgical approach with video demonstration. *Tech Coloproctol*. 2013 August 17(4):441-7.
41. Atallah SB, **Larach SW**, deBeche-Adams TC, Albert MR. Transanal minimally invasive surgery
42. (TAMIS): a technique that can be used for retrograde proctectomy. *Dis Colon Rectum*. 2013 July 56(7):931.
43. Atallah S, Albert M, DeBeche-Adams T, Nassif G, Polavarapu H, **Larach SW**. Transanal minimally invasive surgery for total mesorectal excision (TAMIS-TME): a stepwise description of the surgical technique with video demonstration. *Tech Coloproctol*. 2013 June 17(3):321-5.
44. Atallah S, Parra-Davila E, DeBeche-Adams T, Albert M, **Larach SW**. Excision of a rectal neoplasm using robotic transanal surgery (RTS): a description of the technique. *Tech Coloproctol*. 2012 Oct;16(5):389-92.
45. Atallah SB, Albert MR, deBeche-Adams TH, **Larach SW**. Robotic TransAnal Minimally Invasive Surgery in a cadaveric model. *Tech Coloproctol*. 2011 December 15(4):461-4.
46. Atallah SB, Albert MR, deBeche-Adams TC, Izfar S, **Larach SW**. Application of laser-assisted indocyanine green fluorescent angiography for the assessment of tissue perfusion of anodermal advancement flaps. *Dis Colon Rectum*. 2013 Jun;56(6):797.
47. Albert MR, Atallah SB, deBeche-Adams TC, Izfar S, **Larach SW**. Transanal minimally invasive surgery (TAMIS) for local excision of benign neoplasms and early-stage rectal cancer: efficacy and outcomes in the first 50 patients. *Dis Colon Rectum*. 2013 Mar; 56(3):301-7

### **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

Title: Experimental cadaver laboratory for Vaginal Access Minimally Invasive Surgery (VAMIS). Project goal: Investigate a new approach to hysterectomy using Vaginal Access Minimally Invasive Surgery (VAMIS) on a cadaveric model and its future application on human subjects.

Role: Co-Investigator

## BIOGRAPHICAL SKETCH

NAME		POSITION	
Lawna Hunter, BA		Research Assistant at the Center for Colon & Rectal Surgery/ Florida Hospital Medical Group, Orlando, FL	
EDUCATION AND TRAINING ( <i>Begin with baccalaureate or other initial professional education</i> )			
INSTITUTION AND LOCATION	DEGREE ( <i>if applicable</i> )	MM/YY	FIELD OF STUDY
Santa Fe College, Gainesville, FL	Associate of Arts	08/10	Psychology
Rollins College, Winter Park, FL	Bachelors of Arts Associate	10/12	Psychology
University of Central Florida, Orlando, FL	N/A	12/14	Biomedical Sciences

### A. Positions and Honors

#### Positions and employment

Date	Position
2013 to present	Research assistant with The Center For Colon And Rectal Surgery at Florida Hospital

#### Awards and honors

Date	Award
2012	Outstanding Academic in Psychology

### B. Selected Peer-reviewed Publications

16. Atallah S, **Martin-Perez B**, Albert M, Debeche-Adams T, Nassif G, Hunter L, Larach S. Transanal minimally invasive surgery for total mesorectal excision (TAMIS-TME): results and experience with the first 20 patients undergoing curative-intent rectal cancer surgery at a single institution. *Tech Coloproctol*. 2014 May;18(5):473-80. doi: 10.1007/s10151-013-1095-7. Epub 2013 Nov 23.
17. **Martin-Perez B**, Andrade-Ribeiro GD, Hunter L, Atallah S. A systematic review of transanal minimally invasive surgery (tamis) from 2010 to 2013. *Tech Coloproctol*. May 7 2014. DOI 10.1007/s10151-014-1148-6
18. Atallah S, **Martin-Perez B**, Albert M, Schoonyoung H, Quinteros F, Hunter L, Larach S. Vaginal Access Minimally Invasive Surgery (VAMIS): A new approach to hysterectomy. *Surg Innov*. In-press
19. Atallah S, **Martin-Perez B**, Keller D, Burke J, Hunter L. Natural Orifice Transluminal Endoscopic Surgery: Reflections on a decade of development. *Br J Surg*. In-press

**C. Research support**

**Ongoing Research Support**

None

**Completed Research Support**

No number

Atallah (PI)

March 2014

Applied Medical Inc

Title: Experimental cadaver laboratory for Vaginal Access Minimally Invasive Surgery (VAMIS). Project goal: Investigate a new approach to hysterectomy using Vaginal Access Minimally Invasive Surgery (VAMIS) on a cadaveric model and its future application on human subjects.

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 than those mentioned above (Albert, Matthew, Atallah, Sam, Larach, Sergio, MD, Parra-Davila, MD. *Vessel sealing in laparoscopic colonic surgery*; Sam Atallah, Matthew Albert, , Teresa Debeche-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.