

From OR to Industry



SAGES NBT INNOVATION WEEKEND



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What I've Learned About Myself Trying to Innovate in Surgery

- * Academic Foregut and Bariatric Surgeon
- * Robotics and Endolumenal Surgery-Pilot and Pivotal Trials
- * Built a fellowship and it became large
- * Built a training center by pure happenstance
- * Created Surgical Disruptive Technology Summit
- * Realized what made me most excited was trying to adopt new technology into practice: procedure development, FDA trials
- * Realized I'm a contrarian by nature and I'm quite stubborn but I'm also quick to recognize my weaknesses

My Disclosures and Conflict of Interests

Johnson&Johnson-Teaching/Research

- * Medtronic-Teaching/Research
- * Intuitive-Teaching
- * Gore-Teaching
- * Activ Surgical-Research
- * Boston Scientific-Teaching/Research
- * Endogenex-Research
- * GI Windows-Chief Medical Officer
- * A private practice surgeon who does 95% sleeves has a COI too

Evolution of Robotic Platforms

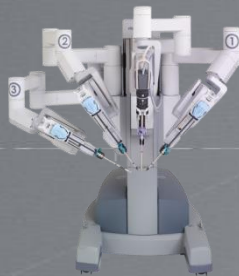
1999



da Vinci®

- Eliminates lap compromises
- Introduction of 4th arm (2003)
- Simple instruments

2006



da Vinci® S™

- 3D HD Vision (720p)
- Cross-quadrant access
- Streamlined set-up

2009



da Vinci® Si™

- Dual Console option
- Enhanced HD Vision (1080i)
- Upgradable architecture



2014

da Vinci® Xi™

- Multi-quadrant access
- Crystal clear 3D HD vision
- Platform for future technologies



- FIREFLY™
(EXPECTED MID 2014)



- XI SKILLS SIMULATOR™
(AVAILABLE NOW)



- INTEGRATED ENERGY
(AVAILABLE NOW)



- VESSEL SEALER
(EXPECTED MID 2014)



- STAPLER
(EXPECTED MID 2014)



- FUTURE INNOVATION
SINGLE PORT SURGERY



- FIREFLY™



- SINGLE-SITE™

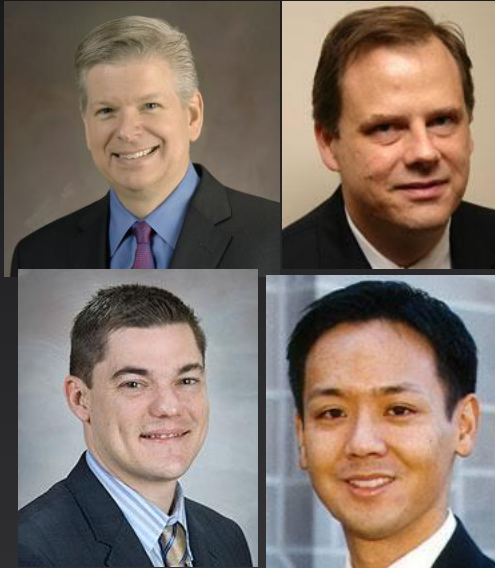


- SKILLS® SIMULATOR™



- ADVANCED
INSTRUMENTATION

Prospective Comparison of Robotic versus Standard Laparoscopic Roux-en-Y Gastric Bypass



Erik Wilson, MD, FACS

Sherman Yu, MD, FACS

Terry Scarborough, MD, FACS

Brad Snyder, MD

Journal of Robotic Surgery 2008



The 10 Year North Star for Robotics

Surgeon



GSN SECTIONS DIGITAL ISSUE EDUCATION MULTIMEDIA SPECIAL EDITIONS CLASSIFIEDS SUBSCRIBE CONTACT

SEPTEMBER 9, 2015

Why Do We Love To Hate Surgical Robots?

 I have watched for years the response of the general surgery community to the introduction, development and growth of robotic surgery. This periodical and many others have printed so many opinions about this "new" technology. Does it have a future? Is it just a marketing device? Is it cost-effective? This has progressed to the point of ethical questions about using robotics in general surgery and potentially disclosing to patients with consent forms that a surgeon is planning to use a "robot."

I ask myself: Why all the fuss? Isn't the robot just a set of instruments that connect us as surgeons to patients through a computer? Another tool in our bag of minimally invasive surgical techniques is what I always figured it to be.

However, I was wrong because I was oversimplifying what robotics was becoming. The robot in general surgery is disruptive technology because it's causing every general surgeon to have to fundamentally rethink how he or she practices his or her craft in the operating room (OR). Frankly, I think a lot of surgeons just don't want to deal with the changes that robotics ultimately impose.

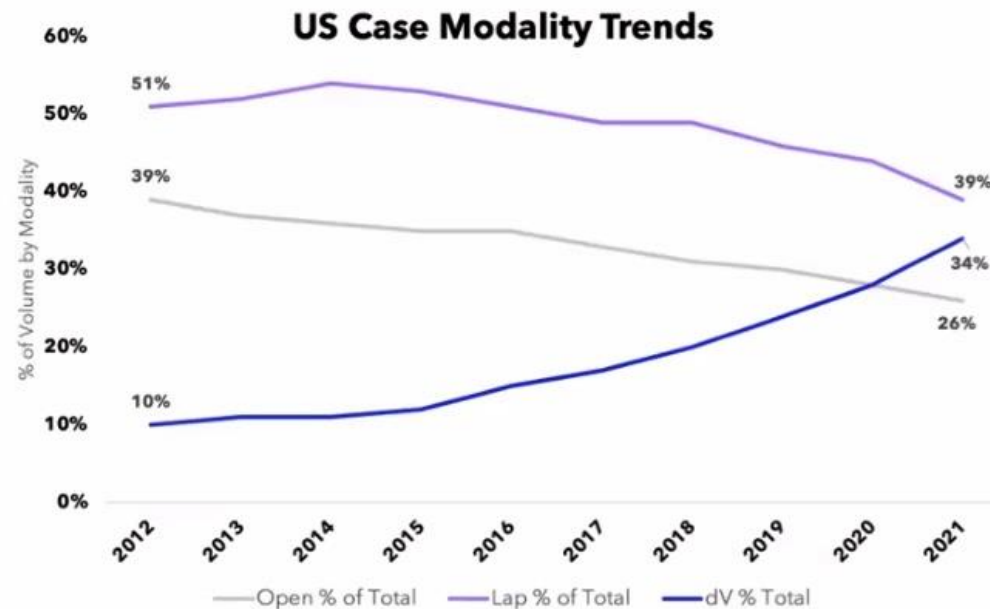
My purpose here is to show as many as possible that we can question and push back against the growth of digital robotic platforms in the OR, but it's completely a losing battle. The robots are here to stay—and there are only going to be more of them. Sorry surgeons; it's happening. As a matter of fact, it has already happened. We can whine about costs and training, no level 1 data and how the robot is no better than straight-stick laparoscopy, but I'm here to be on record that none of those arguments will stop this train. Digital platforms under the name of "robots" are taking over, and we as surgeons have to decide whether we are going to jump on the train or be run over by it.

Patient

US Elective Soft Tissue Open, Lap and Robotics

MIS Adoption

Da Vinci is driving customer's surgical strategies



3rd party data using IQVIA for applicable procedures in US for 2012 – 2021, 2021 volume is projected growth from 2020.
% is a % of total case volume by modality

77%

of resident applicants believed robotic surgery would be very important to their future¹

47%

Growth from new surgeons trained on da Vinci through a residency or fellowship²

1,300+

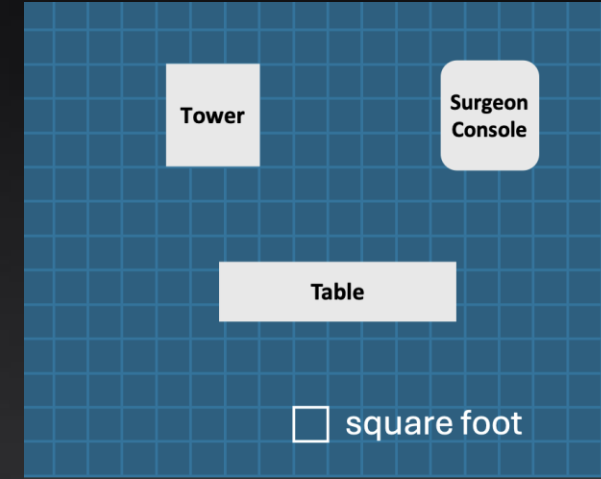
Total equivalency certificates, 2021-2022 academic year²

1. Krause, W., Bird, J. The importance of robotic-assisted procedures in residency training to applicants of a community general surgery residency program. J Robotic Surg 13, 379-382 (2019). <https://doi.org/10.1007/s11701-018-0859-5>

2. Information based on Intuitive internal data



The Verb/Auris/iPlatform/Ottava Story



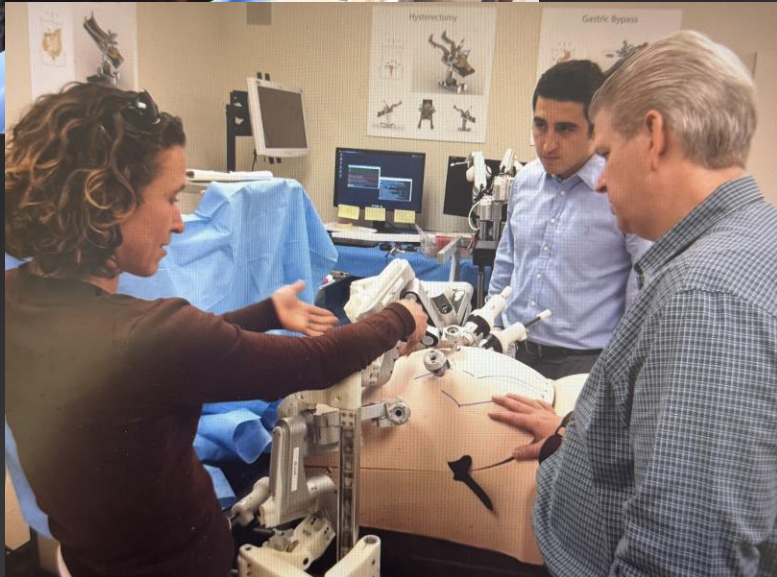
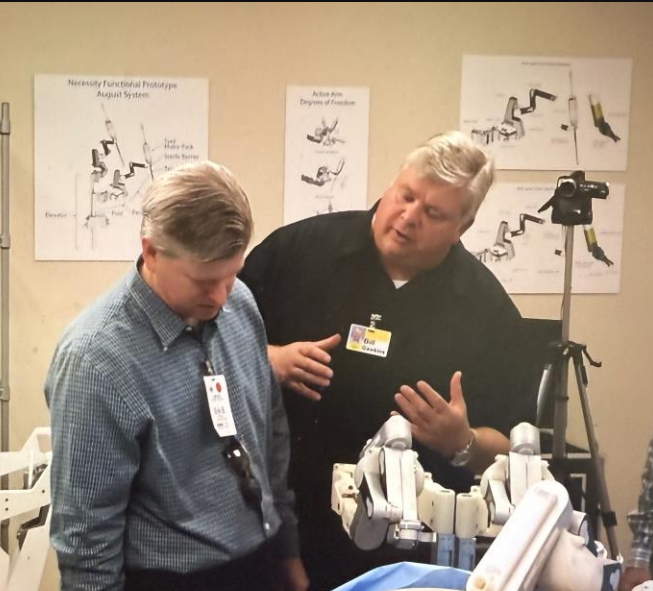
- I have been part of the OTTAVA program since its inception.
- Table integrated arms—no modules no booms
- What most surgeons will comment on is the architecture – the arms stowed underneath the bed until deployed.
- FDA Clearance NOW—General Surgery
- Performance matching DV

March 2025

These are Long Roads

2025

2013



Endoscopic Sleeve Gastroplasty

Endoscopic sleeve gastroplasty for treatment of class 1 and 2 obesity (MERIT): a prospective, multicentre, randomised trial



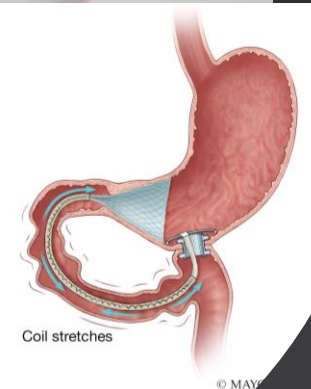
Barham K Abu Dayyeh, Fateh Bazerbachi, Eric J Vargas, Reem Z Sharaiha, Christopher C Thompson, Bradley C Thaemert, Andre F Teixeira, Christopher G Chapman, Vivek Kumbhari, Michael B Ujiki, Jeanette Ahrens, Courtney Day, the MERIT Study Group, Manoel Galvao Neto, Natan Zundel, Erik B Wilson

THE LANCET

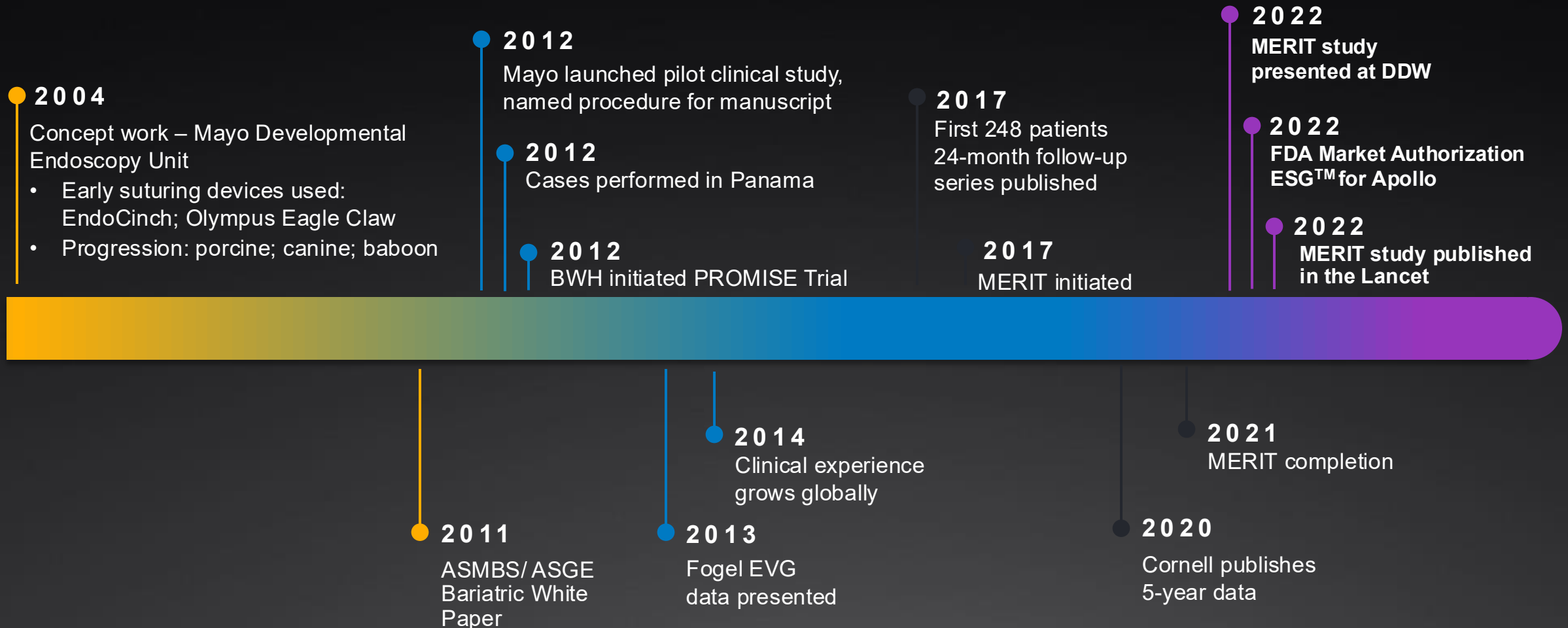
FDA MARKET AUTHORIZATION

AMA CPT Category 1 Code Jan 2026

USGI POSE, Endomina, Nitinotes



History of ESG



2012: Modern ESG Beginnings-Mayo, Panama, India

6 month follow up, N=4

Patient	Initial weight (Kg)	Initial BMI (Kg/m ²)	Final weight (Kg)	Weight loss (Kg)	% weight loss	Final BMI (Kg/m ²)
K.Z	89.1	32.0	69.5	19.6	22.47	24.7
V.T	89.0	32.0	75.0	14.0	15.73	26.9
J.S	86.9	32.4	69.1	17.8	20.48	26.0
L.C	95.0	35.0	85.0	10.0	10.53	32.4
Mean	90.0 Kg	32.85 Kg/m ²	74.65 Kg	15.35 Kg	17.3%	27.5 Kg/m ²



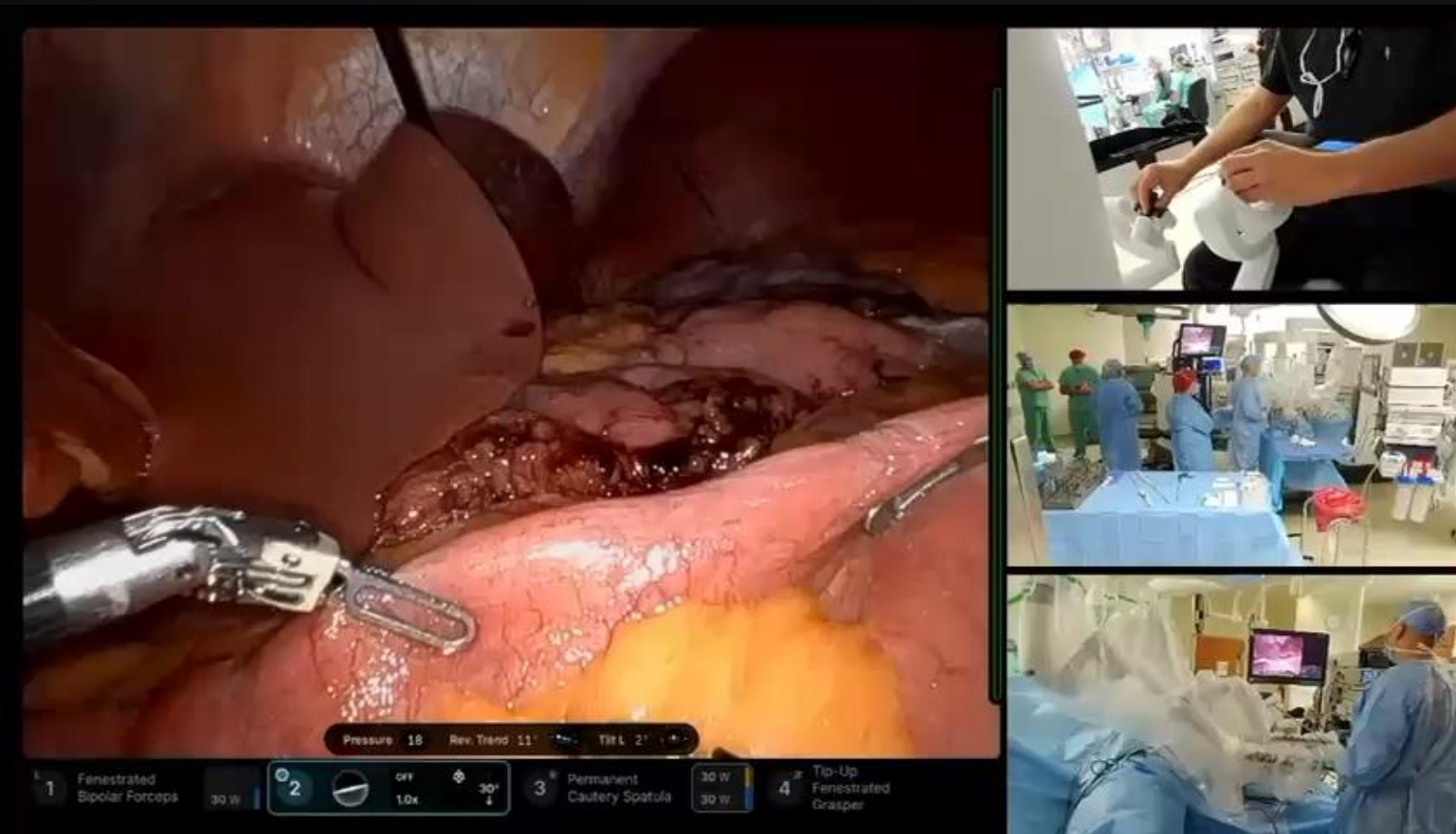
Magnetic Compression Anastomosis Science

Improved healing potential:

- Potentially Reduced Leaks
- Circumferential Hemostasis with Potentially Reduced Bleeds
- Reduced Inflammation and Eliminates bacterial ingrowth
- Potentially Reduced Strictures



Self Forming Magnetic Technology Evolution



➤ Fully Laparoscopic Delivery and Immediate lumen

Surgical Disruptive Tech Summit



Wanna Innovate? Be around Innovators

It's Not about being right, It's about being sincere and open to challenge

Relationships beat transactions

If the first question “is how much will I make?” I will walk away—D. Sherman

A real partnership looks like

- Shared problem definition before shared release
- Iterative cadaver / dry-lab / first cases with honest debrief
- You can challenge a problem without killing the relationship
- Training pathway is designed with educators, not only sales

A transaction looks like

- Paid talk + logo slide + no design input
- First look at the device is the day of the case
- Feedback disappears into a “we’ll take that back” void
- Publication delayed until the message is “ready”
- You are asked to defend a product you did not help shape

“No Buck’s.....No Buck Rogers”

- * VC dollars going into MedTech deals dropped
- * Only best will get funded
- * Days of “incrementalism” dead - need **true breakthroughs** that also have **economic** impact on patient care
- * Have to clearly show Regulatory/Reimbursement GLOBAL pathway
- * It all comes down to clinical data
- * VERY strong, balanced teams needed to execute
- * Eco 101 -- supply of high quality startups down (as funding decreases)
demand for innovation continuing to grow (as big MedTech players hungry for growth)

Cost of Innovation

- * Everyone pays for innovation but the system is stifling:
 - * Payers: 10-20 year process for new procedures
 - * Hospitals: They can take margin to support but only to a point
 - * Patients: Cash Pay drives innovation but its fickle to the economy
 - * Industry: They will pay with research funding up front but want and need a return in the end
 - * To play in this arena you need research infrastructure

My Disclosures

- * I'm a Contrarian:
- * If you're struggling I'm here to help. If you're popular I'm here to criticize.
- * You need to almost enjoy being criticized in order to innovate
- * A history of sincere consistent but open opinions will result in long term engagement with surgical innovation
- * Everyone loves their echo chambers but destroy your own and work through everyone else's, when you change your mind, admit it

My Disclosures

Work Hard and Be Nice



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Division Chief, Minimally
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University of Texas Health
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The 11th Annual Surgical Disruptive Technology Summit is the preeminent forum for innovation in general minimally invasive surgery bringing together entrepreneurs, venture capitalists, surgeons, and medical device companies all in one place to showcase new ideas, products and procedures. There will be multiple in depth panels in surgical robotics, endolumenal surgery, artificial intelligence, surgical training and many more.

THANK YOU
February 18-20, 2027
Houston Texas

