

The Modern Cardiothoracic Practice Landscape: Practice Opportunities and Environments



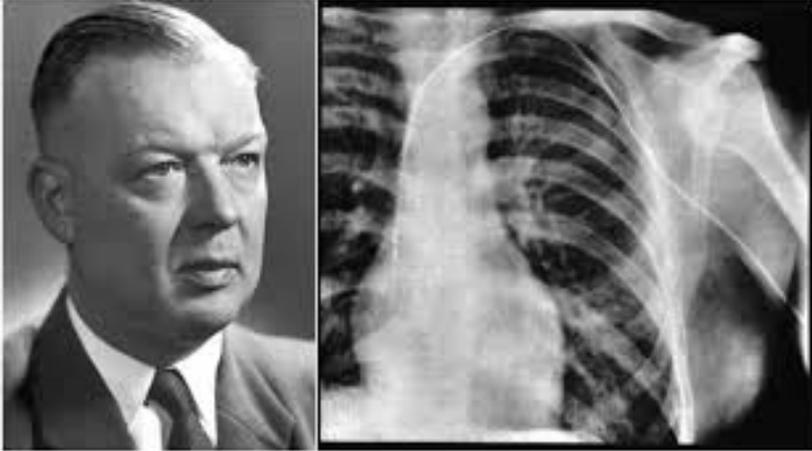
Allan Pickens, MD

Program Director, Emory Cardiothoracic Surgery Residency

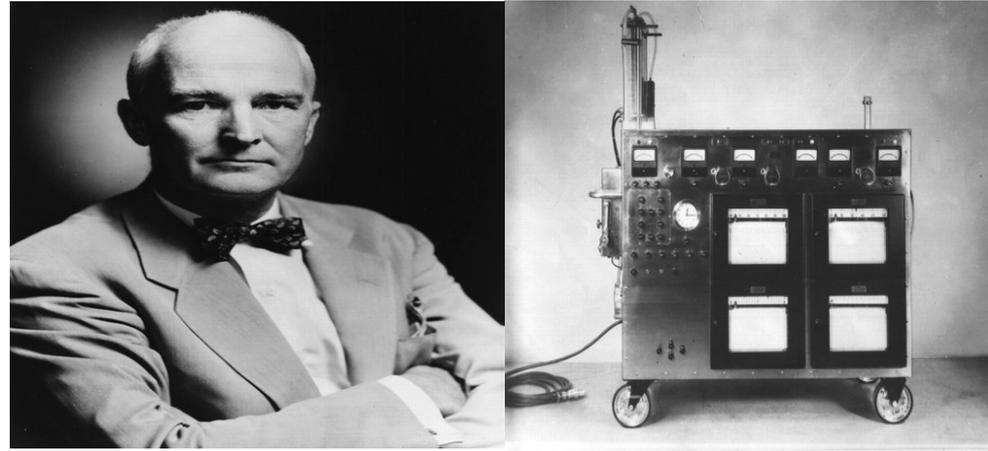
DISCLOSURES

- Speakers Bureau/Honoraria, Ethicon

THE PAST



In 1929, Werner Forssmann's self-catheterization led to the identification of a vast population of patients with atherosclerotic heart disease.



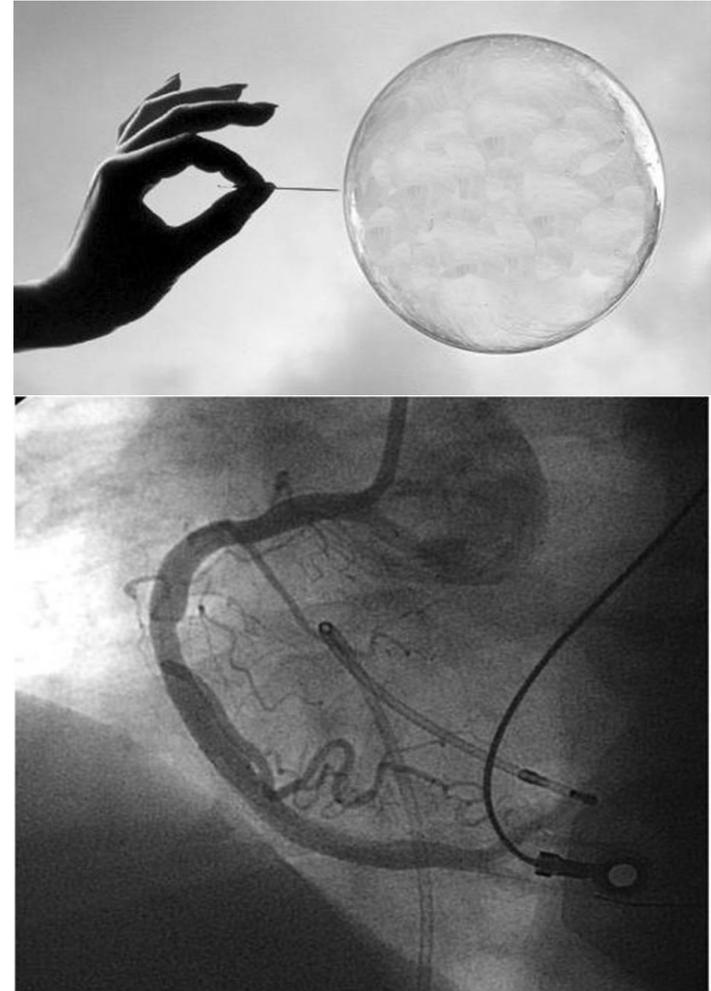
In 1953, John Gibbon's cardiopulmonary bypass machine led to an explosion of cardiac surgery as a specialty.

THE PAST

- The novelty and technical complexity of cardiothoracic surgery attracted the best and the brightest.
- The top hierarchy and seemingly endless supply of patients led to an innovative complacency and self-assurance that was shattered by the introduction of percutaneous coronary intervention.

THE FUTURE

- Percutaneous technology has led to a reduction in the volume of coronary artery bypass operations.
- The number of CABG operations decreased by 28% between 1997 and 2004, while the number of cardiac stent placements increased by 121% .
- The consumer-driven rapid progression of new technology fosters an environment of innovation and change that must lead to a new paradigm of cardiothoracic surgery.



MODERN CARDIOTHORACIC PRACTICE

- Complete elimination of open bypass procedures would be expected to decrease the demand for cardiothoracic surgery services by nearly 40%.
- Our specialty has seen its relevance reduced in the past. Tuberculosis is a prime example, where changing prevalence and treatment options have largely removed the need for surgery.
- Changes in disease presentation, prevention and alternative treatments are not confined to coronary disease. Examples such as rheumatic valvular heart disease, bronchiectasis and gastro-esophageal reflux are all illustrations of recent changes in the role for cardiothoracic surgery.
- According to Nationwide Inpatient Sample data cardiothoracic discharges increased for valve procedures (28%), other open heart procedures (24%), and lobectomies / pneumonectomies (11%) over the last decade.

STUDENT DOCTORS ARE THE FUTURE!



Surgery and Surgical Subspecialties

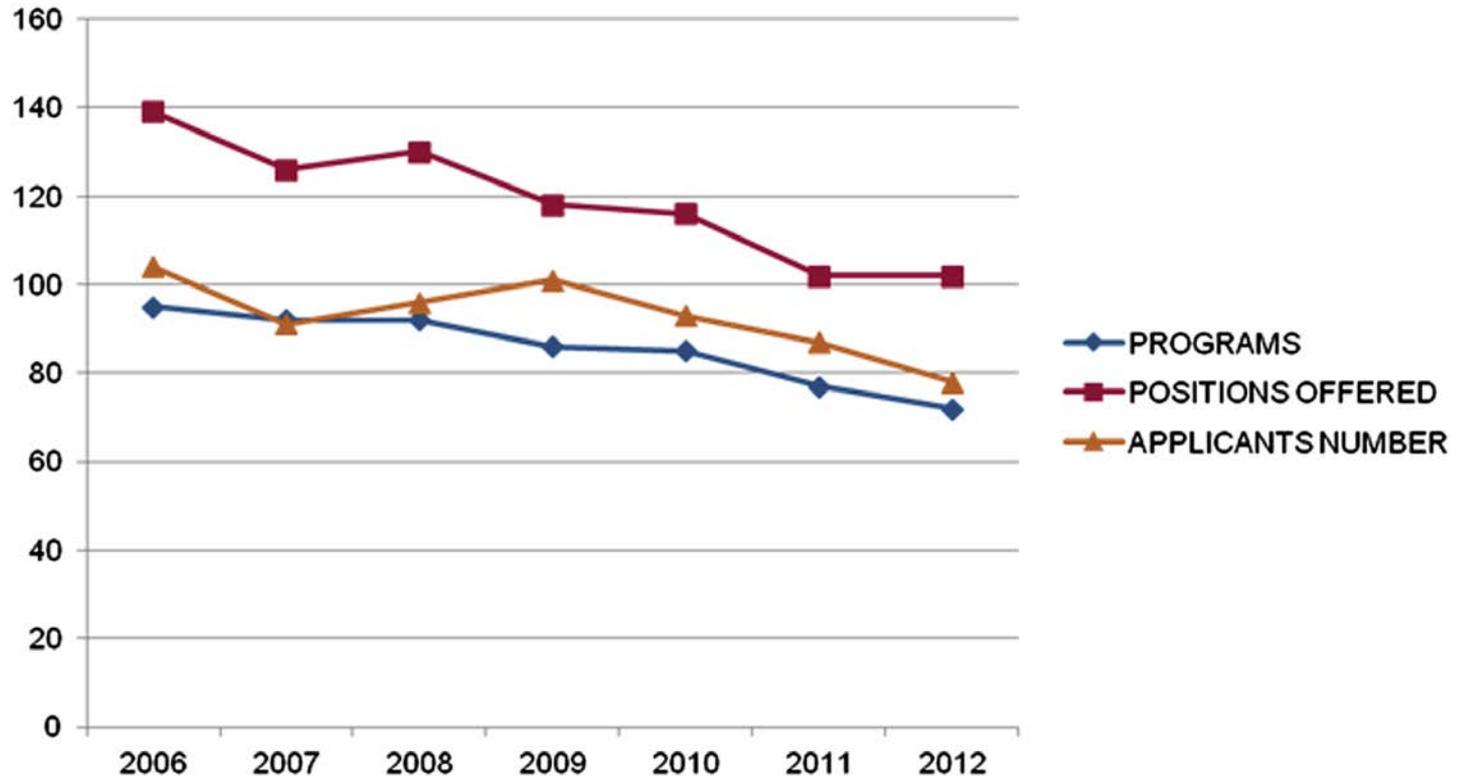
“Why is CT Surgery considered dying even though it has the thoracic (lung) domain?”

CT SURGERY RESIDENCY APPLICANTS

- The number of practicing cardiothoracic surgeons fell in 2003 for the first time in 20 years
- There were only 100 applicants for 132 fellowship positions in 2007 in the USA.
- Three years later, only 88 positions were filled out of 113 position

Weisse AB: Cardiac Surgery: A Century of Progress. Texas Heart Institute Journal 2011
38 (5): 486 – 90

CT SURGERY RESIDENCY APPLICANTS



JTCVS, May 2014, Pages 1464-1470

Program Statistics	Number	%
Enrolled Programs	75	
Certified Programs	72	
Programs Filled	65	90.3%
Programs Unfilled	7	9.7%
Certified Positions	96	
Positions Filled	88	91.7%
Positions Unfilled	8	8.3%
Applicant Statistics		
Matched Applicants	88	
U.S. Grad	65	73.9%
Foreign	8	9.1%

2001-2019 National Resident Matching Program

THE FUTURE



MODERN CARDIOTHORACIC PRACTICE

- According to the U.S. Census and the Society of Thoracic Surgery, there were approximately 4,000 cardiothoracic surgeons who performed more than 530,000 cases in 2010
- By 2030, they project that there will be 3,000 cardiothoracic surgeons to cover about 854,000 cases
- The caseload for each cardiothoracic surgeon is predicted to increase from 135 per year to 299 per year, an increase of 121%.
- Researchers cite such trends as:
 - fewer trainees in CT surgery residency programs
 - more exam failures
 - fewer American Board of Thoracic Surgery certifications at a time when an aging population will require more cardiothoracic surgical services

MODERN CARDIOTHORACIC PRACTICE

- The American Medical Association Masterfile reported a peak of 5100 practicing CT surgeons.
- 18% of cardiothoracic surgeons reported practicing adult cardiac surgery only, and 19% categorized themselves as “general thoracic” only.
- More than half of those surveyed by the STS and AATS report a “mixed” practice of both adult cardiac and general thoracic surgery.
- Fewer than 300 surgeons practice congenital cardiac surgery in the United States and Canada.

Association of American Medical Colleges. Survey of physicians under age 50.
Available at: <http://www.aamc.org/workforce>

MODERN CARDIOTHORACIC PRACTICE

- Nationally, there are <2 active cardiothoracic surgeons for every 100 000 people, and most are concentrated in urban areas.
- Compared with other physician specialties, cardiothoracic surgeons are older and more likely to be men
- >50% of active CT surgeons are ≥55 years of age (compared with 33% of all physicians), and only 3% are women (compared with 27% of all physicians).
- These data are consistent with surveys of Society of Thoracic Surgeons and American Association for Thoracic Surgery members

Association of American Medical Colleges. Survey of physicians under age 50.
Available at: <http://www.aamc.org/workforce>

MODERN CARDIOTHORACIC PRACTICE

- The landscape of modern healthcare is changing rapidly. From the passage of the Affordable Care Act to the integration of artificially intelligent machines like IBM Watson, the healthcare of today barely resembles the healthcare of 10 years ago.
- CT surgeons are predominantly treating elderly patients, with more than two thirds of Americans >65 years of age being diagnosed with cardiovascular disease.
- The size of the elderly population is projected to grow by nearly 100% by 2030 to an estimated 71.4 million elderly Americans.

Centers for Disease Control. National Health and Nutrition Examination Survey

MODERN CARDIOTHORACIC PRACTICE



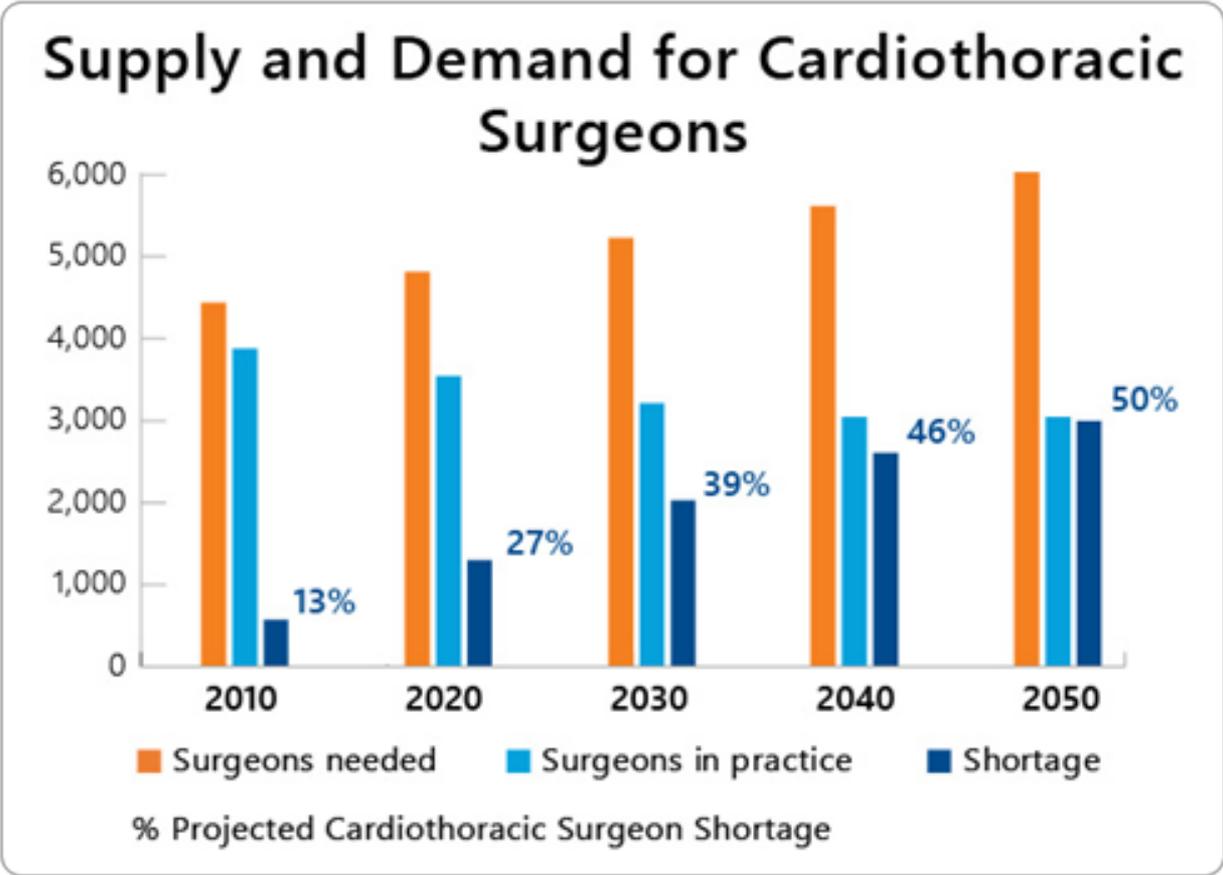
Even with complete elimination of coronary artery bypass grafting, there is a projected shortfall of cardiothoracic surgeons because the active supply is projected to decrease 21% as a result of retirement and declining entrants.

Atul Grover et al, Circulation, August 11, 2009

MODERN CARDIOTHORACIC PRACTICE

- The United States is facing a severe shortage of cardiothoracic surgeons within the next 10 years.
- Research suggests that the number of surgeons entering training in cardiothoracic surgery is inadequate to care for the US population in the coming decades.
- By 2025, it is probable that there will be a shortage of at least 1500 surgeons or 25% of the projected need.

MODERN CARDIOTHORACIC PRACTICE



Sources: American Heart Association, Science Daily, The Journal of Thoracic and Cardiovascular Surgery

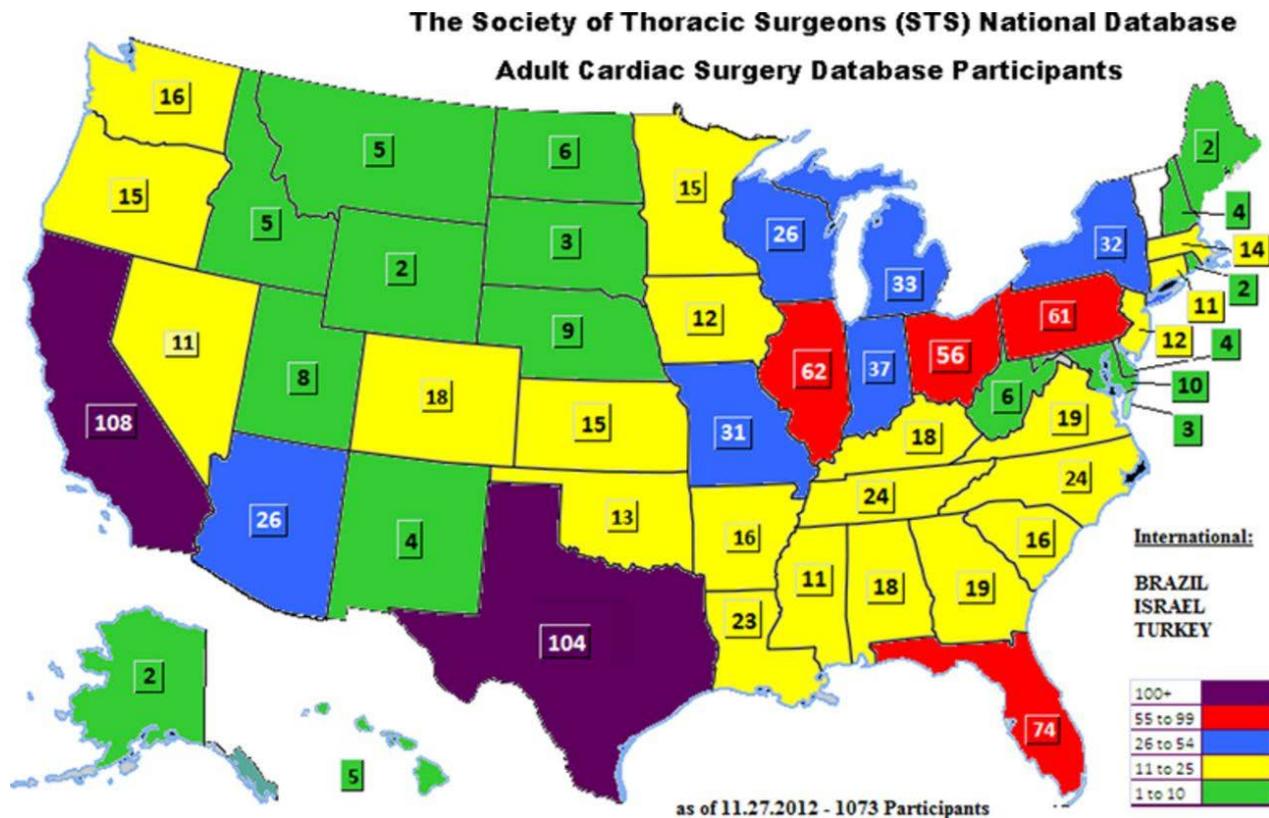
MODERN CARDIOTHORACIC PRACTICE

- Cardiac surgery is not dying but is in fact a specialty in its adolescence and adapting to the evolution of modern medicine.
- New and evolving technology has always guided CT surgeons.
- As patients continue to grow older and sicker, they will require progressively more complex procedures and demand less invasive treatments.
- Future CT surgeons will require both surgical and interventional skills as the application of endovascular and minimally invasive techniques expand.

MODERN CARDIOTHORACIC PRACTICE

- The ability to adapt and embrace new technology has enabled cardiothoracic surgery to thrive as a specialty.
- Cardiothoracic surgeons must not simply adapt to change but partner with industry, participate in prospective clinical trials, and lead with innovation.
- Technological advancements will always be two steps ahead of proven therapies because it takes time to evaluate long-term clinical outcomes.
- Consequently, cardiothoracic surgeons must ensure that suboptimal treatments are not justified by mere less invasive methods.
- Actively participate in prospective research.

MODERN CARDIOTHORACIC PRACTICE- PARTICIPATE IN STS DATABASE



MODERN CARDIOTHORACIC PRACTICE- PARTICIPATE IN STS DATABASE

- The Society of Thoracic Surgeons has established a database of cardiac and thoracic surgical procedures that has become the gold standard.
- We must continue to acquire high-quality outcome data and disseminate it to our members; to federal, state, and regional governmental agencies; to health care providers and payors; and even to patients and their families.
- We have the unique ability to document and demonstrate which therapeutic interventions are effective for major health problems.

MODERN CARDIOTHORACIC PRACTICE

- Data from the Medical Group Management Association show that 70% of cardiovascular surgeons were employed by health care organizations and hospitals in 2014, while 30% remained in physician-owned practices.
- The majority of STS members are now employed, leased, or in management positions.
- Compensation for cardiothoracic surgeons is shifting away from pure RVU models and focusing on efficiency and quality.
- Experts estimate that 10% of reimbursement currently is linked to quality metrics.

MODERN CARDIOTHORACIC PRACTICE

- As more emphasis is placed on coordination and quality, physician compensation is becoming more aligned with organizational goals.
- STS IS OUR ORGANIZATION TO ENSURE REPRESENTATION...GET INVOLVED TO KEEP SEEING THE MONEY!



MODERN CARDIOTHORACIC PRACTICE

- The increasing emphasis on quality over quantity is driving a number of changes in cardiothoracic surgical practice
- Failure to evolve will make us vulnerable to litigation, censure, suspension, and loss of livelihood
- Familiarity with well constructed guidelines is a very good way for surgeons to stay up to date
- Connect with colleagues and patients on social media
- Establish a strong mentor-mentee relationships

MENTORSHIP



Who will you coach to SUPER SURGEON STATUS?

MENTORSHIP

- Mentoring must be an important part of our academic duty.
- Despite our disappointment in current medical practice, we must not let this interfere with our obligation to nurture our younger colleagues and show them the joys of cardiothoracic surgery.
- Academic mentoring of medical students in their early formative years has a profound effect on their career choice.

2020 Looking To The Future Scholarship Recipients

Elorm Agra

Emory University

Saira Alex

Baylor College of Medici

Fares Alghanem

Central Michigan University College of Medicine

Edgar Aranda-Michel

University of Pittsburgh School of Medicine

Ryan Azarrafiy

University of Miami Miller School of Medicine

Sameer Bhalla

Rush University

Jenny Bui

University of North Carolina at Chapel Hill

Carolyn Chang

Case Western Reserve School of Medicine

Emily Durbak

Cleveland Clinic Lerner College of Medicine

Molly Elson

Emory University School of Medicine

Ioana Florea

Washington University School of Medicine in St. Louis

Eleanor Gerhard

The George Washington University School of Medicine

Joe Heiler

University of Arizona, Tucson

Matthew Henry

Wayne State University School of Medicine

Ahmad Hider

University of Michigan Medical School

Christopher Hurtado

University of Central Florida College of Medicine

Niveditha Jagadesh

The Ohio State University College of Medicine

Jimmy Kang

University of Alberta, Canada

Jackson King

Washington State University College of Medicine

Lauren Levy

University of Maryland School of Medicine

Josef Madrigal

University of California, Los Angeles

Connor Magura

Geisinger Commonwealth School of Medicine - Atlanticare Campus

Nicholas Mayne

Duke University School of Medicine

Elizabeth Norton

Creighton University School of Medicine

Mohammad Noubani

SUNY-Renaissance School of Medicine at Stony Brook

Jacqueline Russell

Georgetown University School of Medicine

Jessica Santos-Parker

University of Michigan

Lena Trager

University of Minnesota Medical School - Twin Cities

Jack Zakrzewski

University of Illinois College of Medicine - Chicago

Jasmine Zhao

Keck School of Medicine

MODERN CARDIOTHORACIC PRACTICE



The future of cardiothoracic surgery, though it will be significantly different from the past, is bright!



EMORY
UNIVERSITY
SCHOOL OF
MEDICINE

Key Steps to Finding a Job

Onkar Khullar MD

Assistant Professor

Cardiothoracic Surgery, Emory University

STS Residents Symposium

January 26, 2020

Disclosures

- Nothing to disclose.

Objectives

- What is the timeline (web search, letters, interviews, etc.)?
 - What resources are used to identify open positions?
 - What is the role of mentors/program directors?
 - How should you build your CV prior to applying?
 - Do's and don'ts during the interview
 - How to follow up after interviewing (thank you, second interview, etc.)
-

Timeline

- Start early 12-18 months in thinking about what you want
 - Prepare your CV
- Talk to your network, personal and work, about potential jobs
- Some programs are looking earlier and earlier



Timeline

- Timeline
 1. Pre-STS: Start searching CTSNet and other sites, sending out emails, meeting with mentors
 2. STS: Start talk to people more aggressively
 3. Jan-Feb: Begin interview process
 4. AATS: finalize interviews, second looks
 5. Post-AATS, get licensing, etc.
 - Some programs will start earlier but many may not know formally about positions until January
-

Resources

- CTSnet
- Meetings
- Glassdoor/Indeed/Monster
- PracticeLink
- LinkedIn
- Smaller Society websites
- Word of mouth/faculty



Role of Mentors/Program Directors

- Variable
 - Some faculty are better than others at this
 - Find faculty in your area of focus (Aortic, Congenital, Lung Transplant)
 - Be honest with your mentors, meet with them early in the process
-

Role of Mentors/Program Directors



- Use your local Faculty Development Website and/or copy a Faculty CV
 - Remove HS, not-relevant college or medical school items
 - List Publications in chronologic order with full citations
 - Don't forget presentations, local not just national
 - Social media/google search and scrub your websites!
-

Do's and Don'ts during the interview

- Do your research about the program in advance
 - Know what the program is looking for (clinical workhorse, R01 funded researcher, education specialist?)
 - Know what your interests are
 - Think about what is important to you, and ask questions
 - Be humble, be yourself, the process can be awkward
 - Know that the program is looking for a good fit just as much as you are
 - Don't bring your baggage to the interview
-

How to follow up after an interview



- Communicate, Communicate, Communicate
 - Program may not communicate well with you (not necessarily a sign of limited interest)
 - Thank you emails are great, not necessary for all, but for hiring partner is essential (Communicate, Communicate, Communicate)
 - Second interviews reserved for programs you are seriously considering
- Consider bringing spouse/significant other
-

Your First Employment Contract

Faiz Y. Bhora, MD

Chief of Thoracic Surgery Health Quest/Nuvance Health

President NYGTSC

Disclaimer: This presentation is for the purpose of providing general guidance from a physician's perspective about what to expect in your first employment contracting experience. It does not constitute legal advice.

Disclosures

- Boston Scientific, Inc., Ownership Interest, Consultant/Advisory Board, Other, Education Conference, Veran Medical, Consultant/Advisory Board, Education Conference, Ethicon, Consultant/Advisory Board, Medtronic

Key Components of the Employment Contract

- Salary
- Duration of Contract
- Non Compete
- Benefits
- Termination Clauses
- Malpractice Coverage
- Sign on bonus/Relocation compensation

Salary

- Wide range (280-600K)
- Generally higher in private practice, more rural location
- You may be able to negotiate a small increase
- Understand expectations- RVUs

Duration

- Aim to get at least 2 years, ideally 3
- One year is a red flag
- Beware of termination clauses that can reduce a 2-3 year contract to 1 year

Non Compete Clauses

- Time component (1-2 years)
- Radius component (1-50 miles)
- Point of enforcement (all facilities – where you spend more than 25% of time)
- State regulation
- Hard to negotiate out

Benefits

- 403b
- Employer match
- Additional voluntary pretax contribution
- Medical/Dental

Termination Clauses

- Most pretty standard
- Termination For Cause (immediate vs 30 day cure)
- Termination Without Cause (after 2 years, 120 days or more)
- Severance pay if terminated without cause by hospital

Malpractice Coverage

- **Claims-made**

Claims-made policy will only provide coverage if the policy is in effect both when the incident took place and when a lawsuit is filed. Because of this, some claims-made policies are written to provide a period of coverage referred to as a “tail” that extends coverage for a set amount of time (such as five years) after a policy ends.

- **Occurrence based**

Occurrence policies differ from claims-made insurance in that they cover any claim for an event that took place during the period of coverage, even if the claim itself is filed after the policy lapses. In general, this type of policy does not require tail coverage.

Sign on bonus/Relocation compensation

- Sign on Bonus (may be prorated)
- Relocation compensation (variable)
- FYI: All taxable

Career Development: How to Achieve Success Early in Your Career

Brent Keeling, MD

Emory University

1/26/20

EMORY
HEALTHCARE



**The Society
of Thoracic
Surgeons**

Disclosures

- None
- brent.keeling@emory.edu
-  @BrentKeeling
- IG – not on it, so don't try

Disclaimers

- This talk is based on absolutely **NO** data whatsoever
- There are no randomized controlled trials to guide your early career progress
- There are **no** perfect jobs
- This is experiential knowledge **ONLY**...

Early Career Development

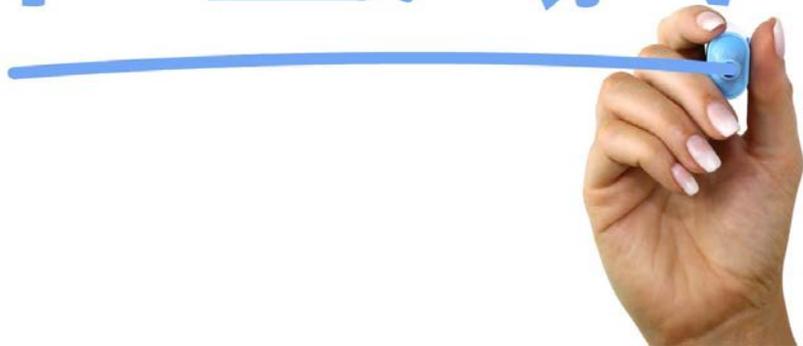
- You've gotten a job, a good job. Terrific!!!
 - Now, the hard part begins...first 5 years (and especially the first 12 months) are **CRITICAL!!!**
 - Everyone is watching...
- Can mean many things, and likely depends on your environment and job
 - Funding
 - Clinical Research
 - Education
 - Addition of new services
 - National/regional/local involvement
 - Banging out routine cases/serving the community



Early Career Development

- Fundamentally, Early Career Development boils down to two things:

PLAN



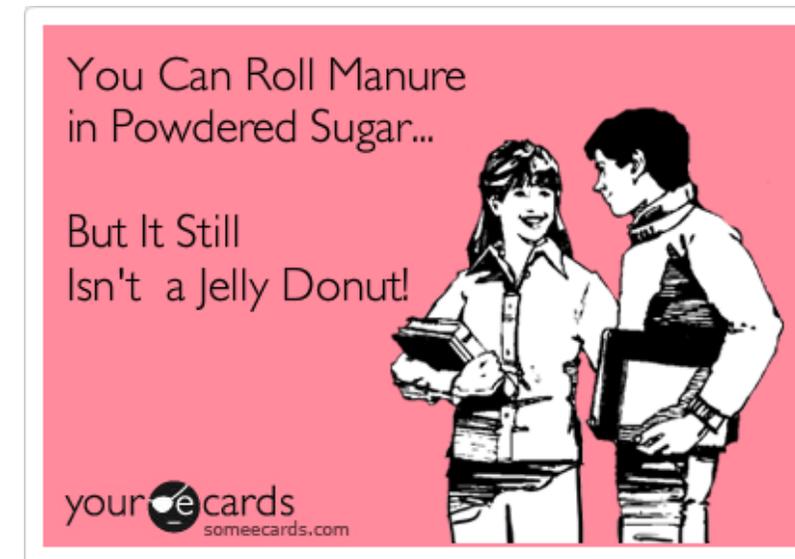
Mentorship

Early Career Plan

- Make and refer to a 1-, 3-, and 5- year plan
- Can include both personal and professional milestones
- Should include both quality and productivity

Early Career Development

- Know what you are supposed to do, and do it
 - Clear definition of what role you are to fill
- Enlist help when necessary – no one expects you to make something out of nothing – CT surgery is resource-intensive (**Mentors!!!**)
- But...be extremely careful the first 6-12 months
- Reputations forged during this time



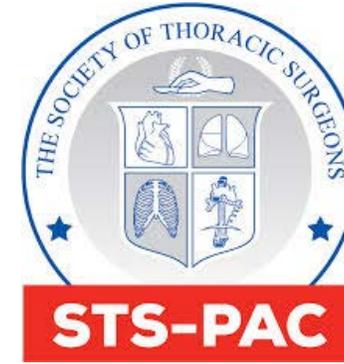
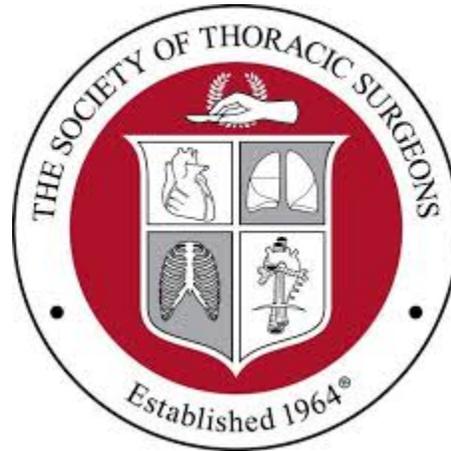
Early Career Development

- You are a LEADER!!!! Act like it....
 - Dress well – medicine is a business
 - Conduct yourself accordingly
 - Call and lead meetings
 - Take on responsibilities
 - The answer should always be “yes” early



Early Career Development - National

- Get involved – reach out to current/former **mentors**
- Join representative organizations
 - STSA – self-nominating
 - WTSA
 - STS – self-nominating
 - AATS – takes some time to join
 - ABTS – see AATS
 - ACC/AHA – easier
 - ACS – easier
 - PAC's



**American
Heart
Association**



**AMERICAN ASSOCIATION
FOR THORACIC SURGERY**
A Century of Modeling Excellence

Funding

- Think local, act global
 - Start small, but have a bigger plan in mind – seed money, matching funds
- Funding sources
 - TSFRE
 - STSA/WTSA
 - ACC/AHA
 - ACS
 - Other (cancer specific funding, etc.)

Get Involved on a Local Level

- Take roles on hospital committees, no matter how trivial they may seem
 - Blood bank/transfusion
 - Hospital peer review
 - Oncology
 - ICU committees
 - Cardiovascular or thoracic oncology service lines
 - IRB

You can't hide in your current role!!!

Getting Involved in Your Profession

Limitless Possibilities

Early Career Development

- Invest in yourself
 - If you are lacking in any one area, work to make it a strength
 - Courses
 - Industry-sponsored training
 - Mini-fellowships
 - Videos
 - Education through regional and national organizations
 - This includes **leadership**...
 - Do this early – it is unlikely you will have time or take time to do this later in your career as you get busier

Early Career Development - Tips

- Network, network, network
 - Join the country club
 - Eat in the physician's lounge
- Meet referring physicians of a similar age
- Over-communicate, and be transparent
- Smile, and remember names
 - Anesthesia techs, cath lab techs, OR personnel
- **Scrub with your partners!!!**



Early Career Development - Tips

- Build a good team
- Know the power players in your institution
 - May not be your boss per se
 - CMO, CEO, head of cancer center, etc.
- Things **will** go wrong – it's CT surgery. How you respond to it, especially early on, will define your career
- The **3 A's** still apply and still work: Able, Affable, Available (Answer the phone!!!)

Career Development: How to Achieve Success Early in Your Career

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@BrentKeeling

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Achieving Personal and Financial Security: Tips and Secrets

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Chief, Division of Cardiac Surgery
Tufts Medical Center
Professor of Surgery
Tufts University School of Medicine

STS Resident's Symposium
January 2020



I have no disclosures.

Who am I and what is my background?

- I started thinking about finances when I was in high school

“Personal Finance for Dummies” and Vanguard.com

(this has about 85% of all the finance knowledge you need to know)

This talk: ten minutes

- Brief overview
- Serve as starting point for investigate and research yourself
- This is not rocket science, this not cardiac surgery, this is not thoracic surgery, this is simple addition, subtraction, and maybe some multiplication

A word about financial advisors:

- Useful if you have zero interest or understanding in money and planning retirement (e.g. getting an ophtho or ortho consult for facial fracture: Le Fort what?)
- You can probably do a better job if you have a modicum of interest (renal or pulmonary consult)
- Please understand how they are paid (real estate agent)

Security: Life Insurance

- Are you married?
- If yes, you need life insurance
- Are you a father or mother?
- If yes, then you need MORE life insurance

How much? And what kind: “term” vs “whole”

Life Insurance: How much?

- College costs for X kids
- Pay down house

.....a personal decision regarding how much you need

A brief word about divorce:

- You will be poorer and wealth divided by at least half each and every time you get divorced unless you have some sort of prenup
- In addition, living expenses are now **doubled** because two separate households

Disability insurance: the most important insurance you might need

- Any thoracic or cardiac surgeon needs "own occupation" disability insurance
- Typically provided by employer
- Can get from independent carrier
- Max out = \$30,000/month?

Financial security: Retirement What are we talking about?

- Money potentiates independence and is a problem solver
- ***Enough*** money for life's necessities is ***necessary*** but a ***insufficient*** condition for ***happiness***

What is the Easiest Way?

- Spend less than you earn = live within your mean

AND SAVE THE DIFFERENCE in tax smart accounts

- The vast majority of millionaires are made thinking about saving money rather than thinking about earning more money
- Anyone with a physician's income can become a millionaire

What is the Big Picture?

Live within your means:

- What do you want to spend money on?
- MAKE a Budget and Keep track of your expenses

How much money is needed for Retirement?

How much are you going to spend?????

How much is enough?

- How much are you going to require in retirement?
- 4% rule
- Income producing investments: this is a very important black hole we don't have time to talk about: rental property, owning a business that produces passive income
- Social Security

How much is needed for Retirement?

4 % rule = you can withdraw 4% of your savings and be ok, most likely.

$\$15,000 / \text{month} = \$180,000$

$\$180,000 / .04 = \$4,500,000$ required savings

Anyone with a Physician's Income Can Become a Millionaire: Really?

- Average starting salary = \$400,000
- After Tax = \$250,000
- $\$250,000 / 12 \text{ months} = \$20,000 \text{ per month}$
- Let's say you save \$2000 per month (this is possible)

Anyone with a Physician's Income Can Become a Millionaire: Really?

- If you start with \$2000 and save \$2000/month and the rate of return is 4% per year, you end up with

\$1,394,000 after 30 years.

Really. You do the math.

What are the Easiest, No Brainer things you can Do?

- Maximize employer 403K contributions so you never feel it (pre tax money, but payout taxed, 2019 max \$19,500)
- Maximize Roth IRA contributions (post tax money, payout not taxed, 2019 max \$6000)
- Pay off your credit card completely each and every month
- College 529 plan (post tax money, payout not taxed)

Physician Consumption and Consumerism

- Cars
- Coffee
- Vacation

These do not contribute to long term wealth (but only you can decide if it is worth it; it's a value proposition)

“Can I sell it and get what I paid for it?”

How Much Will that Daily Coffee Cost you?

- \$4 per day for every weekday: \$20/wk
- Assuming 4% return, after 30 years this is:

\$55,000: almost one year's college tuition

Would you like to drink the coffee, bring the coffee, or save the money for your kids, or make your kids go into debt?

Stocks, Bonds, Mutual Funds?

- Index funds
- Actively managed funds
- Most should be in stocks the further you are from retirement (average return 10% per year)

Congratulations

- There are so many jobs out there, you'll be feasting
- You are an elite specialist in surgery
- The profession is rewarding and challenging and worthwhile—don't let anyone tell you otherwise

Optimizing One's Family Life in the Modern Era of CT Surgery

In a Dual Career Household

Jennifer C. Romano, MD, MS, FACS, FACC
University of Michigan

2020 STS. Resident Symposium



**C.S. MOTT
CHILDREN'S HOSPITAL**
UNIVERSITY OF MICHIGAN
HEALTH SYSTEM

Disclosures

- None
- Except, I am not sure that I have really figured it out



Devoted wife and mother



And, first female cardiac surgeon



Overview

- Changing landscape of cardiothoracic surgery
- Impact of changing demographic
- Finding balance
- Need for change



Dual Career Household

First time mom at 42

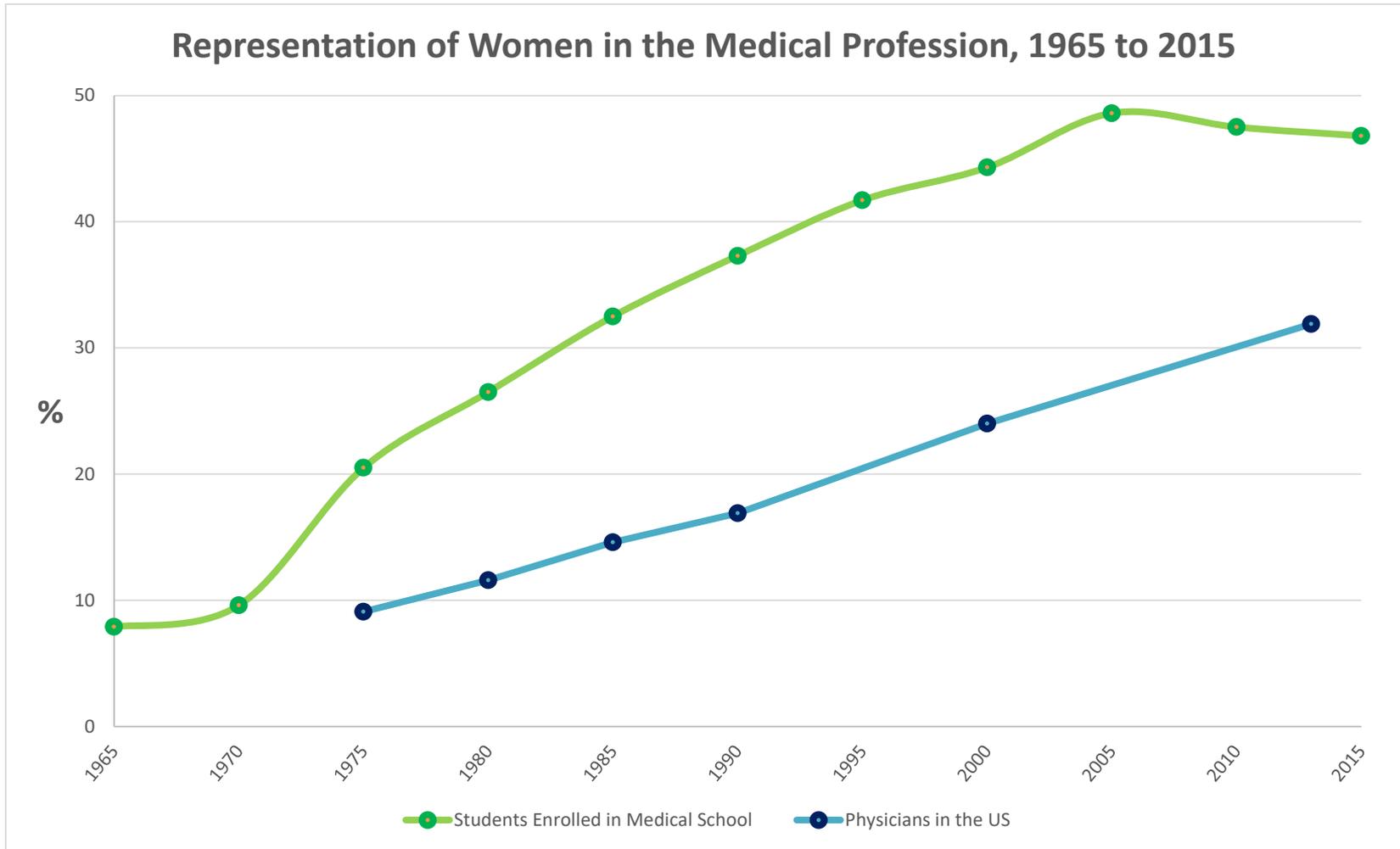
Second baby at 44

Amazing husband and daddy who is *also* a cardiac surgeon!



Changing Landscape of CT Surgery

Women in the Medical Profession



Our current I-6 residents

50% are women!!!!



And our Traditional Track Fellows – 100%



Women in Thoracic Surgery: 30 Years of History

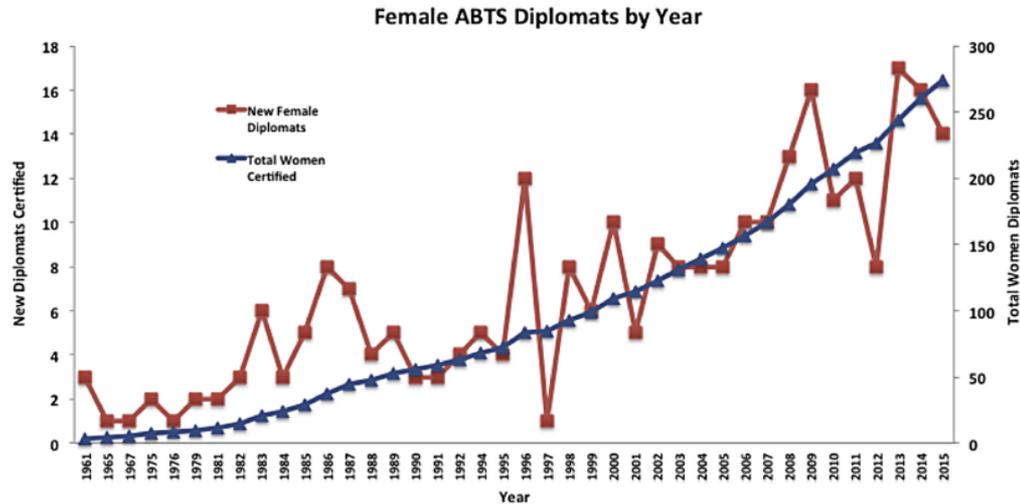


Fig 1. Female American Board of Thoracic Surgery (ABTS) diplomats over time. The first 3 women were certified by the ABTS in 1961, with 10 women certified by 1980. As of 2015, 274 women have become ABTS diplomats, accounting for approximately 3% of all thoracic surgeons certified by the ABTS.

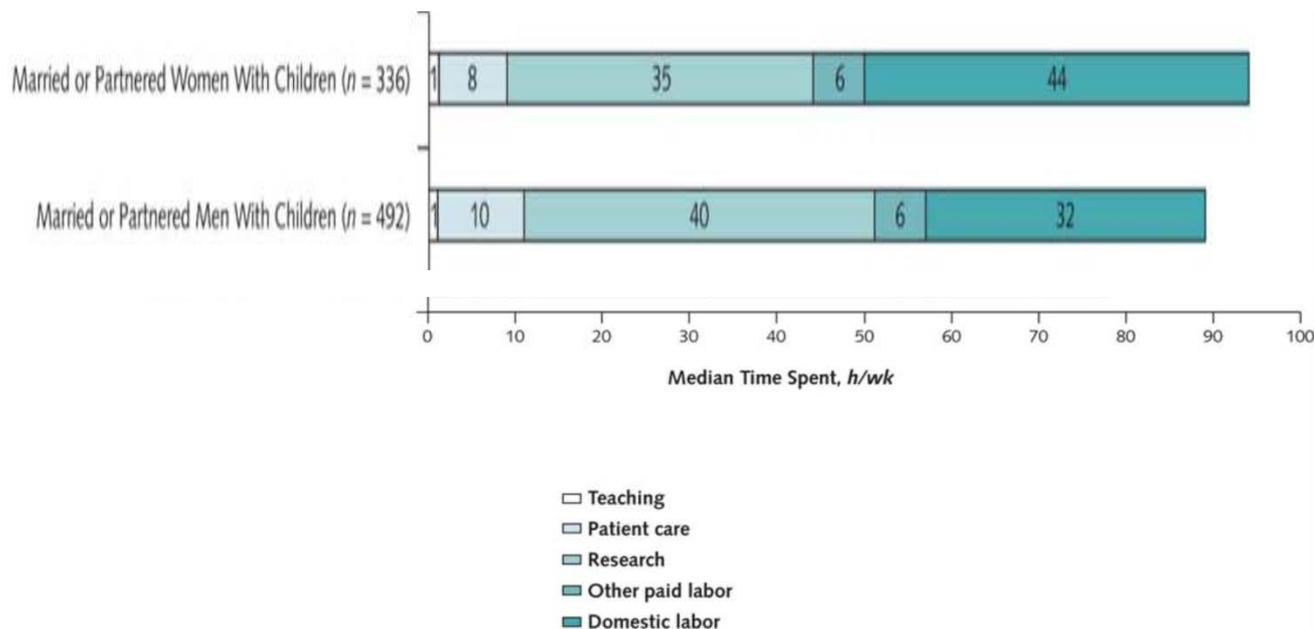
Nonetheless, through individual talents and hard work, enhanced by professional networking, mutual support, and the committed advocacy from our specialty's societies and male sponsors, women in thoracic surgery have seized important opportunities to achieve professional advancement. The prospects for women in our field have exploded in recent years, and we look toward the future with optimism and excitement.

Facts about Women in Surgery

- Women tend to marry individuals with the same or higher level of education
- 90% of married female residents are in dual career household with 50% of them being **dual** physician households
- In CT surgery, women represent 22% of residents but only 7% of active surgeons in practice
- Female surgeons invest nearly twice as many hours and miss more activities compared to male counterparts because of parenting obligations

Gender Differences in Time Spent on Parenting and Domestic Responsibilities by High-Achieving Young Physician-Researchers

Ann Intern Med. 2014;160(5):344-353. doi:10.7326/M13-0974



- Among married or partnered respondents with children, after adjustment for work hours, spousal employment, and other factors, women spent 8.5 more hours per week on domestic activities.
- In the subgroup with spouses or domestic partners who were employed full-time, women were more likely to take time off during disruptions of usual child care arrangements than men (42.6% vs. 12.4%).

Birth Trends and Factors Affecting Childbearing Among Thoracic Surgeons

(Ann Thorac Surg 2014;98:890–5)

Table 3. Birth Trends and Factors Affecting Childbearing

Variable	Women	Men	<i>p</i> Value
Desired children	69% (61/88)	88% (22/25)	0.0619
Have children	39% (34/88)	68% (17/25)	0.0092
Delayed children due to career	98% (60/61)	50% (11/22)	0.0000
Career adversely affected by children	82% (72/88)	60% (15/25)	0.0222
Having children viewed unfavorably by peers	61% (54/88)	16% (4/25)	0.0001
Desired reproductive health policy	76% (67/88)	32% (8/25)	0.0000

Table 4. Obstetric History

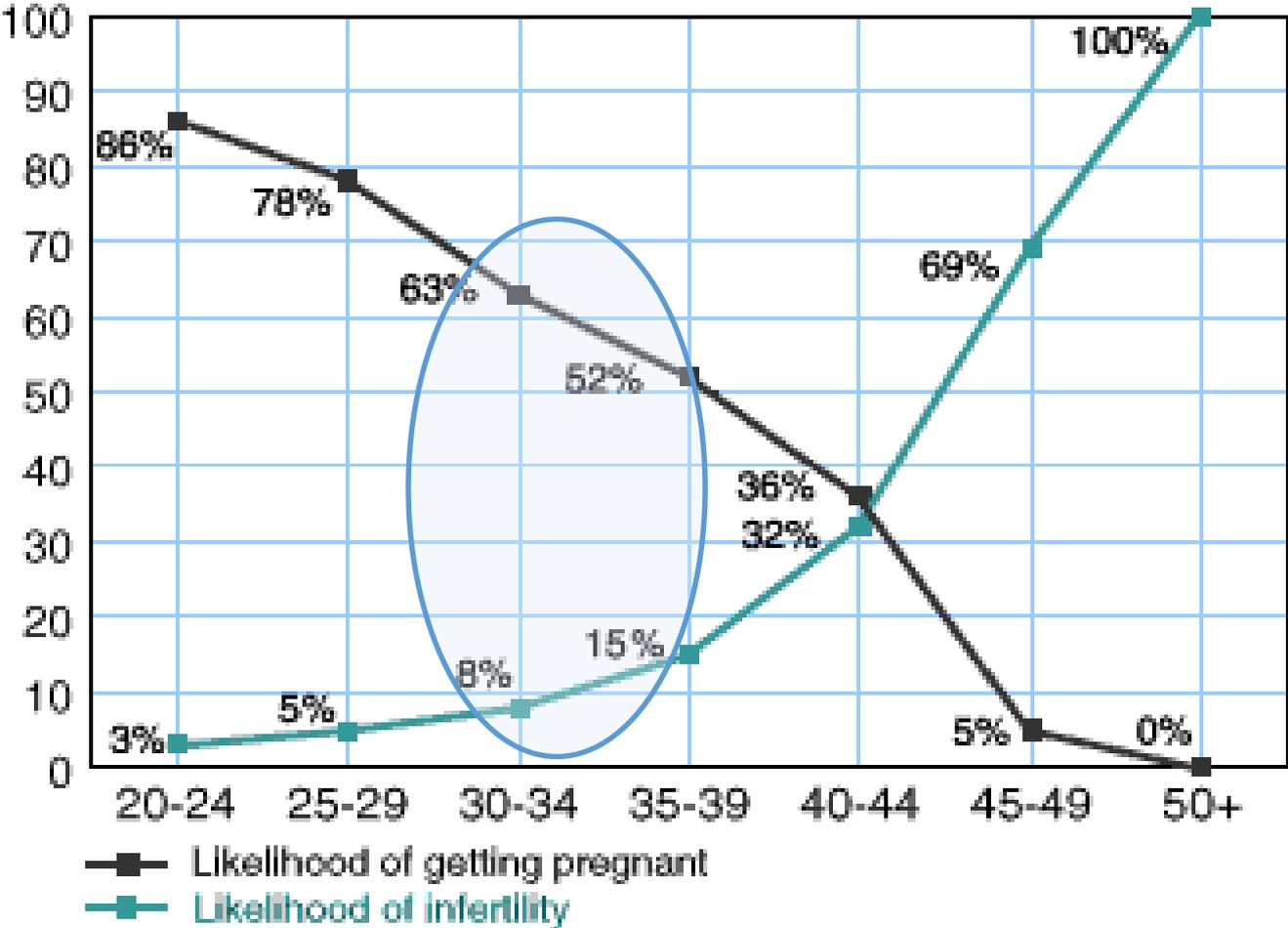
Variable	WTS	National Average	<i>p</i> Value
Children per mother	0.6 ± 0.2	1.9	
Maternal age, first child	34.3 ± 0.7	25.4	
Maternity leave (weeks)	7.5 ± 0.7	10.3	
ART utilization	28% (21/61)	12%	0.0002

Women thoracic surgeons begin their family later in life and have fewer children. These findings are likely due to the perception that their career would be adversely affected and to advanced maternal age, which is a known risk factor for pregnancy complications. Residency programs and practice groups should strive to develop policies that support having children earlier in training as the number of women thoracic surgeons grows.



Impact of Changing Demographic

Fertility Reality



Pregnancy and Motherhood During Surgical Training

Erika L. Rangel, MD, MS; Douglas S. Smink, MD, MPH; Manuel Castillo-Angeles, MD, MPH; Gifty Kwakye, MD; Marguerite Changala, BS; Adil H. Haider, MD, MPH; Gerard M. Doherty, MD

- 74 question survey of surgical residents having at least 1 pregnancy between 2007-2017, 347 respondents
- 85.6 % worked an unmodified schedule until birth
 - 63.6% felt this adversely affected their or their unborn child's health
- 78.4% had maternity leave of ≤ 6 weeks
 - 72% felt the duration was inadequate
 - 82.2% stated the ABS policy as a major barrier
- 95.6% stated breastfeeding was important
 - 85% were too uncomfortable to ask attending surgeons permission to step away from a case
- 66.8% desired greater mentorship on integrating family and career
- 72% witnessed faculty or other residents making negative comments
- 39% strongly considered leaving residency
- 29.5% would discourage female medical students from a surgical career
- 34.9% of programs had formal maternity leave policies
 - compared to 90% of pediatric and 80% of obstetrics and gynecology residencies

Perspectives of pregnancy and motherhood among general surgery residents: A qualitative analysis

Erika L. Rangel ^{a,c,*}, Manuel Castillo-Angeles ^{a,c}, Marguerite Changala ^{a,c},
Adil H. Haider ^{a,c}, Gerard M. Doherty ^b, Douglas S. Smink ^{b,c}

- Qualitative review of 3 open ended questions
- Key Themes:
 - Desire for work modification during the late stages of pregnancy due to health concerns
 - Minimize risk of preterm labor and fetal loss
 - Inadequate duration of maternity leave
 - Clarify ABS requirements, formal maternity leave policies
 - Perceived stigma of pregnancy and motherhood
 - Negative comments and implicit bias
 - Need for greater lactation and childcare support
 - Pumping facilities and policies, on-site childcare
 - Need for mentorship on work-family integration
 - Value of supportive colleagues and faculty

The New York Times

When the Surgeon Is a Mom

Nearly 40 percent of pregnant surgery residents consider dropping out. Many wonder: Why can't the system accommodate motherhood?



"I felt like I wasn't a great mom or partner or resident." Dr. Rangel

Optimal Strategies for Raising Children

- Family Planning
 - Challenges with pregnancy and early childhood years in residency
 - Reality of fertility limitations with delay
 - There is no good time, we as a profession need to better support either path
- Childbearing
 - Appropriate work hour modification pre- and post-partum
 - Support for adequate maternity and paternity leave
- Childcare
 - Need either onsite childcare that accommodates crazy hours or dedicated secondary care giver
 - Work environment that is understanding of the unexpected

Challenges of a Two Career Couple with a Family

- Supporting career satisfaction and advancement
- "Ideal" timing of childbearing
- Balance of desired academic position and geographic availability of family support
- Impaired negotiating leverage
- Faulty perceptions of male and female parenting roles



Finding Balance

TEN ADAPTIVE STRATEGIES FOR FAMILY AND WORK BALANCE: ADVICE FROM SUCCESSFUL FAMILIES

*Shelley A. Haddock
Scott J. Ziemba

*Toni Schindler Zimmerman
Lisa R. Current

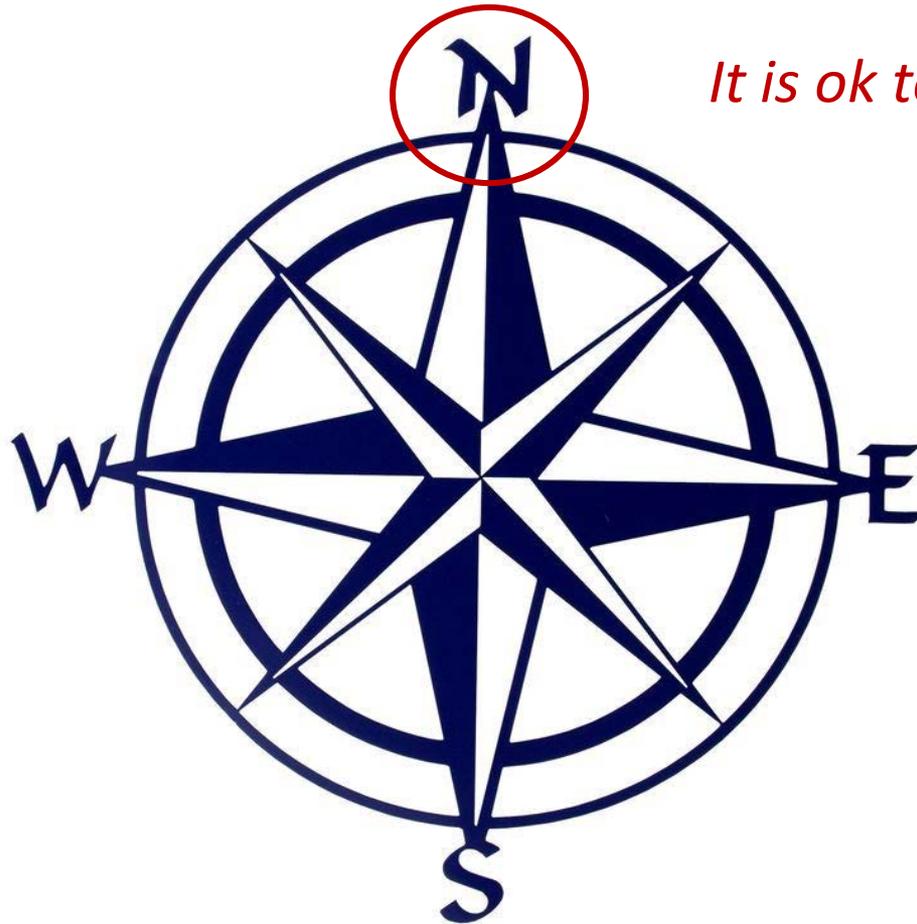
Colorado State University

1. Valuing family
2. Striving for partnership
3. Deriving meaning from work
4. Maintaining work boundaries
5. Focusing and producing at work
6. Taking pride in dual earning
7. Prioritizing family fun
8. Living simply
9. Making decisions proactively
10. Valuing time

Achieving quality family time in the current era

- Cannot underestimate the power of senior support
- Empowering female mentors and colleagues
- End early morning and evening meetings
 - Antiquated
 - Inconsiderate
 - Unnecessary
- If you do not ask, it is hard to get to yes
- Allow family and work life to overlap
 - Lets your children be proud of the time you are absent
 - Allows your work world to see your balance

Maintaining Your True North



It is ok to say no!

Financial Considerations

- Take advantage of a dual income
 - Money can buy time
 - Off load non-rewarding domestic duties
 - Travel with your kids
 - Optimize time away
- Leveraging the system
 - Most commonly the system will leverage you
 - Leap of faith to leverage the system when two careers are at stake
 - Men will more commonly seek outside opportunities to negotiate for a better position
 - Demand transparency and equity in compensation
 - Each individual should be compensated fully for their value independent of other family income
 - You should not be penalized for not playing the “game” of job shopping



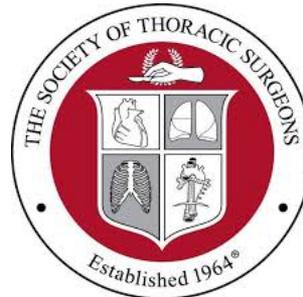
TIME
FOR
CHANGE

Training Programs

- Provide didactic lectures on fertility and family planning
 - 2 male residents sought IVF and are now expecting following our first lecture
- Advocate for fair health coverage
 - Guaranteed paid maternity and paternity leave
 - Coverage for both IVF and elective egg freezing
- Provide adequate space, time, and coverage to support pregnant residents and lactation
- Support for childcare, sick kids, and snow days!
- Mentoring support for life-work balance and negotiating skills
- This impacts both male and female residents
- **Be the voice of change!**

Progress has been made.....

- IVF for infertility is covered by our HOA, some programs pay for elective egg freezing
- Parental leave policies are more inclusive
- National Meetings
 - Lactation rooms
 - On-site childcare
 - People are increasingly accommodating



It is amazing what happens if you just ask



STS Annual Meeting

HELLO STS MOTHERS

Please help yourselves to the
supplies we've provided.

If you wish to check your storage tote
or cooler, you may do so free
of charge at Luggage Check, located
near Registration.



*It takes a village, creativity,
and resilience*

Individuals who have personal and career satisfaction are highly effective and productive team members.

Supporting our trainees and faculty to optimize family life will in the long term pay endless rewards to the future of our specialty.

Thank you!!



*Keep the conversation
going, times up!*

Dual-Physician Households

Strategies for the 21st Century

Lauren Ferrante, MD, MHS and Lona Mody, MD, MSc
JAMA. 2019;321(22):2161-2162. doi:10.1001/jama.2019.4413

Over the past 2 decades, the proportion of female medical school enrollees has steadily increased; in 2017, for the first time, the majority of first-year medical students were women.¹ With this changing demographic, dual-physician households are also on the rise; a survey conducted in 2009 showed that nearly half of all physicians are married to physicians.² Dual-physician couples are more likely to marry and less likely to divorce than nonphysician couples,³ perhaps because of older age at the time of marriage, higher education levels, the socioeconomic status of both individuals, and the value that physician couples place on companionship. Despite

gender. It is only through honest and thoughtful discussion of work-life issues that positive and lasting change can be achieved. As institutions focus on work-life balance for their faculty, they should pay particular attention to the concerns faced by traditionally underrepresented groups and ensure that new policies meet the needs of the entire physician community.

Box. Practical Strategies to Achieve Work-Life Balance in Dual-Physician Relationships

Strategies at the System and Institutional Level

Couples match (training years) allows 2 applicants to link their rank order lists

Tandem recruiting (faculty years), such that both hiring units or departments synchronously engage in the recruiting process so that both partners feel equally valued

Parental leave policies for both parents

On-site childcare with extended hours; subsidized program to care for sick children

Financial advising resources

Adaptive Strategies at the Individual Level

Strive to have the best résumé by optimizing rotations, scores on standardized tests

Assess whether being accepted into a specific program or going to a specific geographical location is more important; cast a wide net during the application process; identify role models

Seek out peer-to-peer support for information on professional assistance with domestic tasks as well as information pertaining to cultural and recreational activities outside work

Time management and open communication regarding career aspirations, goals, philosophy, and plans to raise a family are important

Be proactive in the coordination of work, on-call, childcare, professional meetings, and holiday schedules

Achieving a Successful Work/Life Balance

STS Residents' Symposium 2020

Mara B. Antonoff MD

Assistant Professor
Thoracic & Cardiovascular Surgery
UT MD Anderson Cancer Center
Houston, TX, USA

Disclosures

I have no relevant financial disclosures

What is Work / Life Balance?

- Splitting finite resource in multiple directions



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 - *If one side takes, the other side must give*



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 - *If one side takes, the other side must give*
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 - *One object takes priority for a moment, then the next, trying not to drop any of them*



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 - *One object takes priority for a moment, then the next, trying not to drop any of them*
- Integrative process
 - *Getting multiple pieces to fit together, supporting one another in different aspects of your life*



What is Work / Life Balance?

- It does **NOT** mean
 - Juggling the **most** things
 - Juggling the **fewest** things
- It means finding a way to include all of the things that matter to you into your life

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 - ***The tips shared here are based on my personal chaos, but are meant to be applicable to all!***

Work/Life Balance Issues

- Why should one cultivate hobbies and life outside of work?

citations

Work/Life Balance Issues

- Why should one cultivate hobbies and life outside of work?
 - **Personal Development = Professional Development**
 - Being involved in diverse activities **outside of work** makes you a greater asset **at work**.
Taking time away from **work** to pursue your **interests** contributes to **personal growth**.
 - To maintain relationships with others who support you and enable you to do your job
 - To avoid burnout
 - To give you pleasure

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 - To give you pleasure
- **How?**

Work/Life Balance Issues

- Why should one cultivate hobbies and life outside of work?
 - **Personal Development = Professional Development**
 - To maintain relationships
 - To avoid burnout
 - To give you pleasure
- **How?**
 - How does one maintain personal growth and cultivate hobbies?
 - What are strategies for dealing with stress to avoid burnout?
 - How do you build a support group of colleagues and friends?

My Background

Clinical:

- Thoracic Surgery at UT MD Anderson Cancer Center
- Assistant Professor & Associate Program Director for training program
- My contract: 80% clinical effort
- My workweek: 1.5 days in clinic; 2-3 days in OR

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- Areas of interest in early detection of lung cancer, pulmonary metastatic disease, gender disparities, surgical education
- PI of multi-institutional TSOG trial for lung-limited metastatic CRC and site PI of additional TSOG trial
- Surgical PI of multiple studies evaluating local consolidative therapy in Stage IV lung cancer

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- Rotating general surgery residents
- Medical students
- Dedicated research residents
- Mentees locally, nationally, and internationally—formal and informal

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Non-institutional academic/administrative commitments:

- WTS leadership
- AATS committee
- STS leadership
 - Member of 4 workforces
 - Member of 5 taskforces
 - Chair of 1 WF + 1 TF
- TSSMN delegate and coordinator
- TECoG leadership
- ISMICS leadership
- Editorial board for CTSNet, Annals of Thoracic Surgery, JTCVS, Innovations

My Background

Clinical

- Thoracic
Anderson
- Assistant
Assoc
Director
progr
- My c
effort
- My w
clinic

Life outside of work?

- Family
 - Working spouse with demanding career (consulting out of town)
 - 4 kids (12, 10, 4, 2)
 - No other family in town
- Sanity/Happiness
 - Exercise
 - Travel
 - Food
 - Friends

Institutional /administrative events:

- Leadership
- Committee
- Leadership
- Member of 4 workforces
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My Family



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My Family

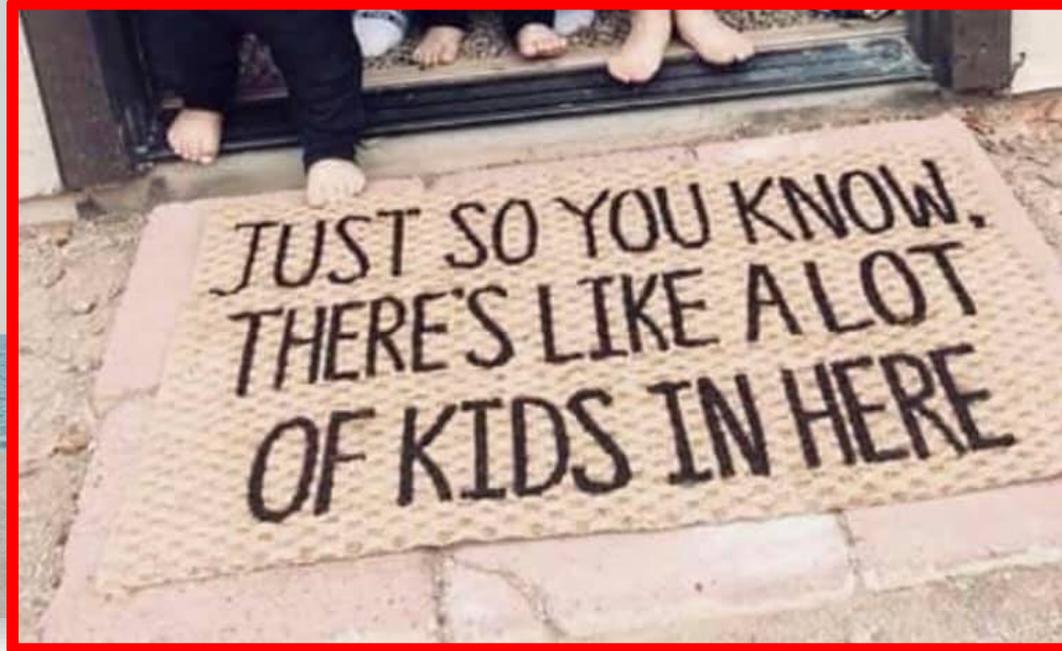
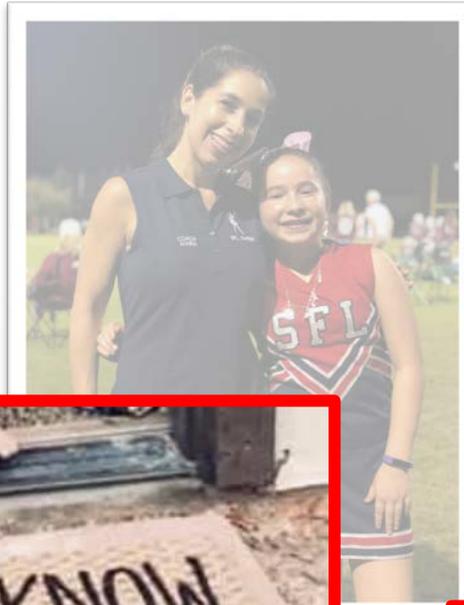


My Family



My Family

My Chaos



- **Each of us has our own values**—and what's important to me might not be important to you.

EVERYONE HAS A
DIFFERENT IDEA
OF WHAT
HAPPINESS
LOOKS LIKE.

- **But my strategies can help** you find time for whatever it is that does make you happy, well-rounded, sane, and complete.

My strategies for success

My strategies for success (Time Management 101)

My strategies for success

1. Remember the “*why?*”



My strategies for success

1. Remember the “*why?*”
2. If it’s important to you, **make it a priority**
 - Give yourself permission to create time for things that matter to you
 - No judgment

Thank you very much for the kind invitation to speak. While I greatly appreciate this honor, I am unavailable to travel on the evening of 10/31 due to a prior commitment. Would it be possible to move the talk to slightly later in the morning on 11/1? If not, I totally understand, and I'd be glad to help suggest some alternative speakers,

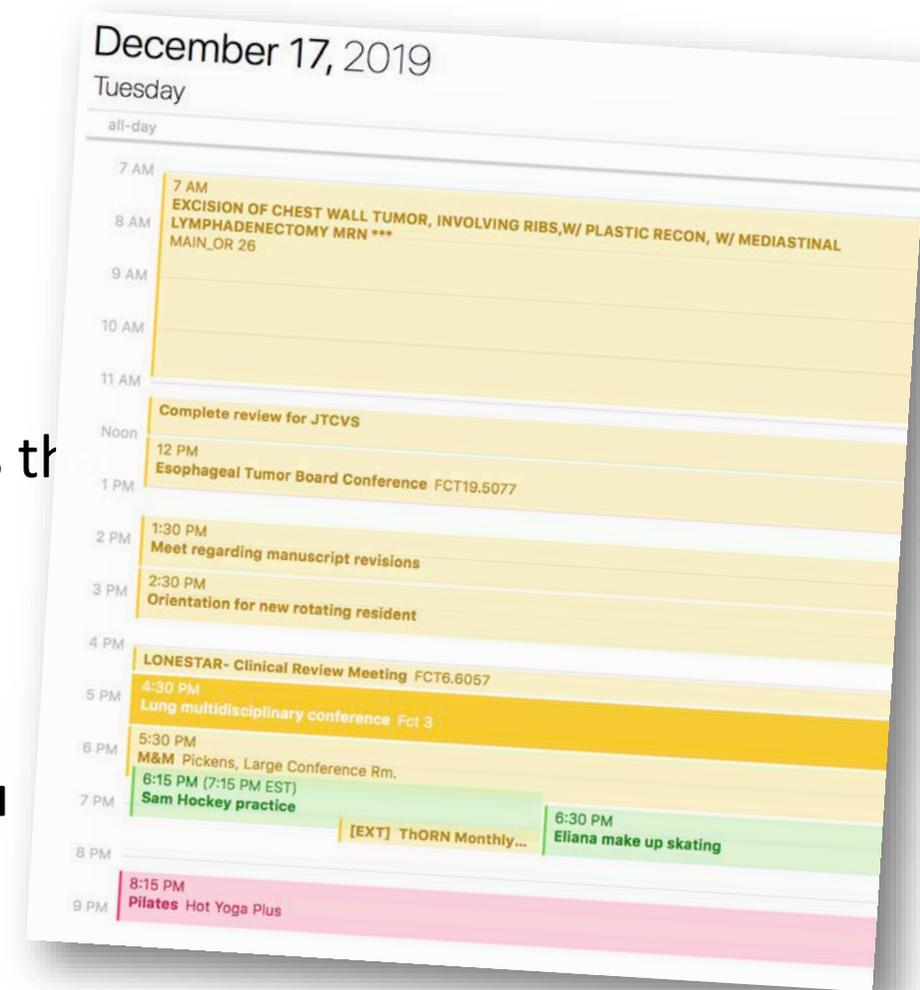
Respectfully,

Mara Antonoff MD, FACS
Assistant Professor
Thoracic & Cardiovascular Surgery
UT MD Anderson Cancer Center
mbantonoff@mdanderson.org
Tel: 713-563-3100
Fax: 713-794-4901

THE UNIVERSITY OF TEXAS
MD Anderson
~~Cancer Center~~
Making Cancer History®

My strategies for success

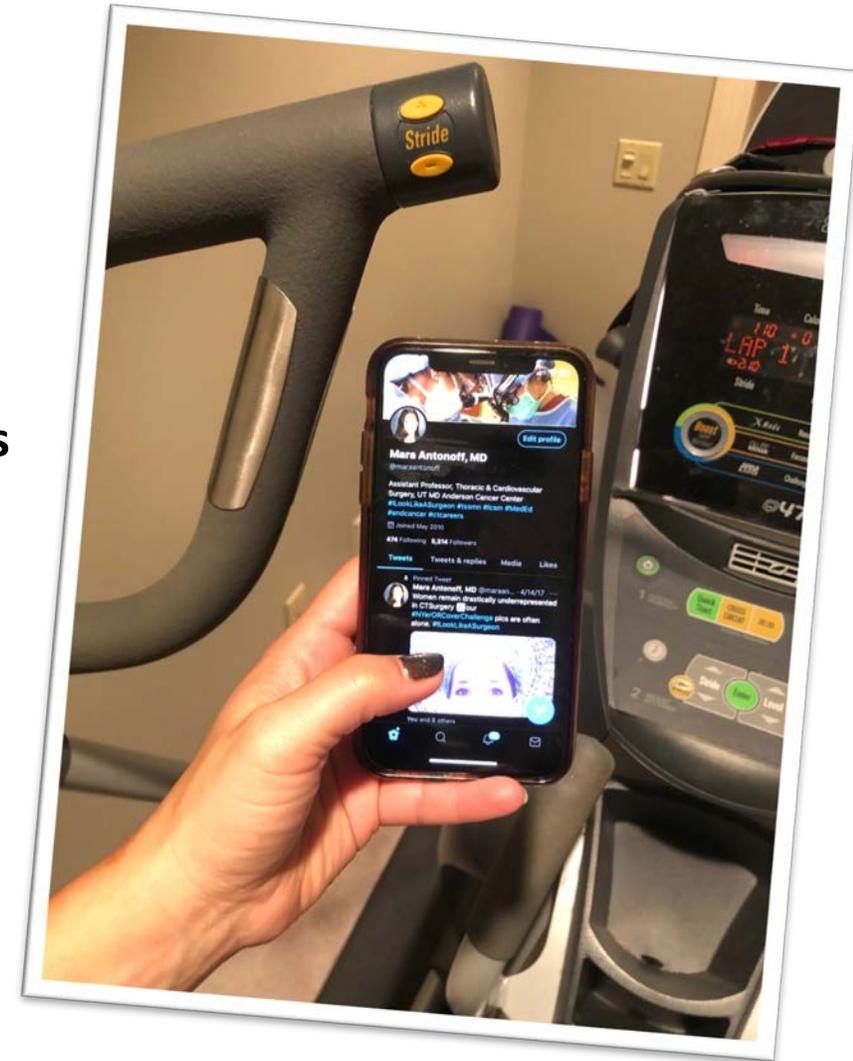
1. Remember the “*why?*”
2. If it’s important to you, **make it a priority**
 - Give yourself permission to create time for things that matter to you
 - No judgment
3. **Use lists and calendars**
 - Schedule things that need to happen or that you have prioritized to happen
 - Technology helps!



My strategies for success

4. Multitask when possible

- Eliminate wasted time
 - Conference calls while waiting at sports practice for kids
 - Professional social media while on elliptical machine
 - Call out-of-state family while driving



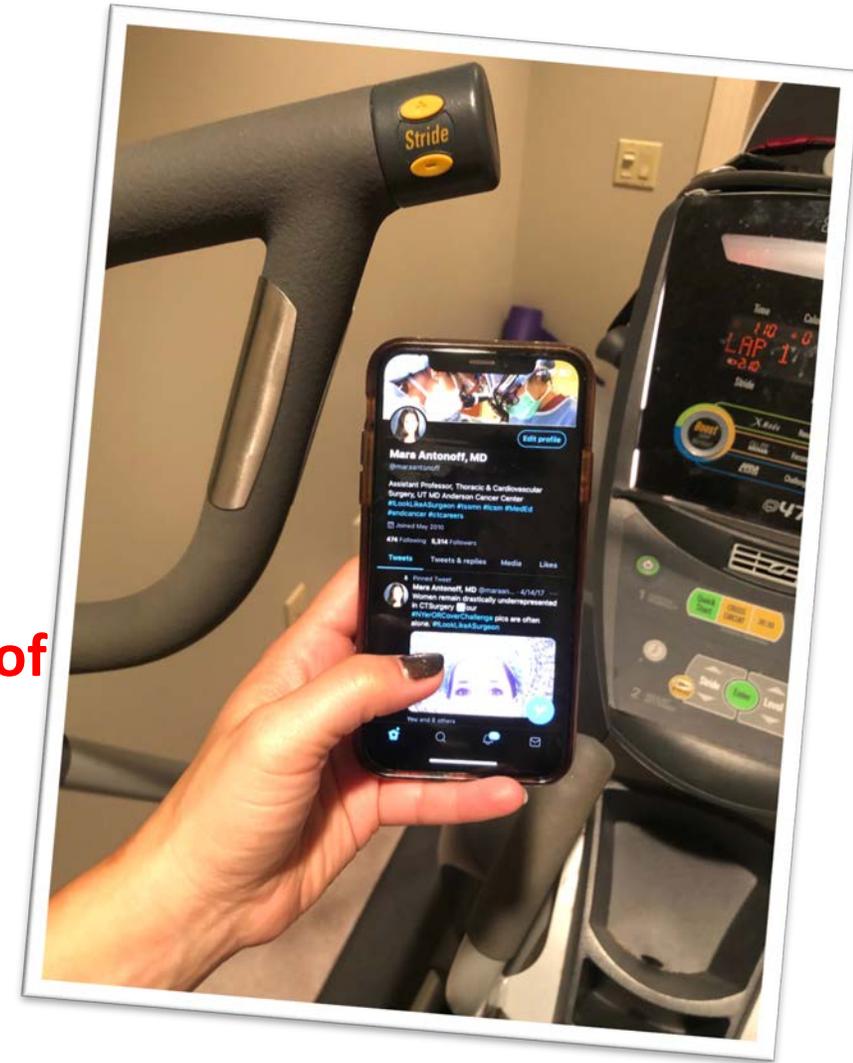
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- **Don't multitask when it detracts from the quality of either experience! Then it's all for naught.**



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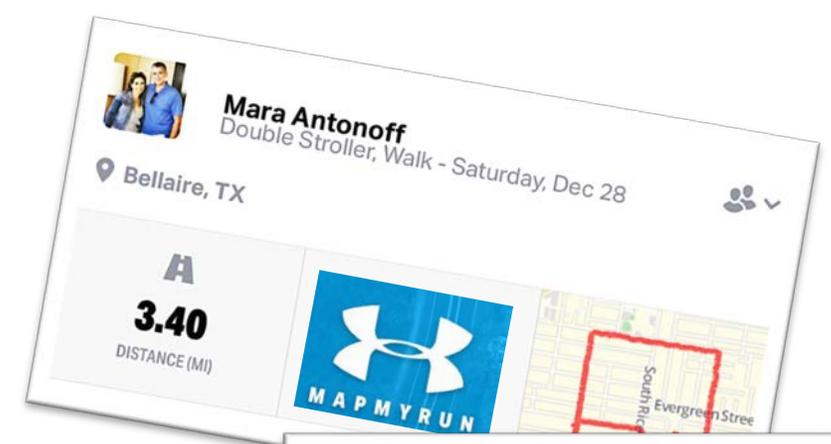
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- For me, this means combining family time with exercise, social time, travel



My strategies for success

6. Time is limited so decide what matters

- Outsource when you can
- Recognize what matters and what doesn't
 - My oldest daughter wanted to make cupcakes for her birthday, and it was very important to her that we not purchase them.
 - Same child: I was stressed because I had an OR case on her first day of middle school. She couldn't have cared less.



My strategies for success

7. Know your time sinks!

My strategies for success

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Skybridge from office to hospital...

My strategies for success

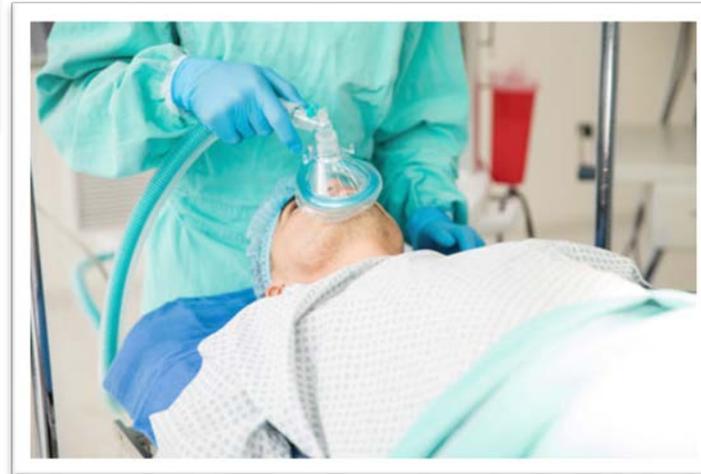
7. Know your time sinks!



During workouts...

My strategies for success

7. Know your time sinks!



Waiting for anesthesia...

My strategies for success

8. Categorize & strategize based on how long a task will take

My strategies for success

8. Categorize & strategize based on how long a task will take

Items that are quick to deal with now to take off your plate → *do immediately!*

- Birthday party invite for kids → RSVP to invitation, add to shared calendar, and buy gift on amazon
- Abstract acceptance → add to calendar, add to CV, add presentation to “to-do” list

My strategies for success

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Items that will require 30-60 min → *add to your to-do list with an appropriate deadline*

- Resident sends manuscript draft that requires revisions/edits

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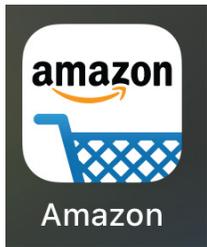
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Items that are important and time-consuming → *set aside dedicated time on your calendar in advance of deadline (and add to to-do list)*

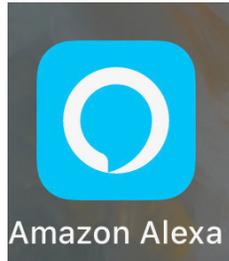
- Making slides for an STS presentation!
- Renewing passport

My strategies for success

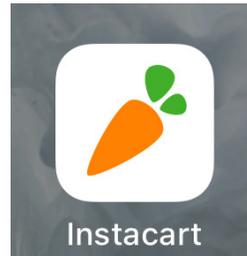
9. Utilize technology-based services to save time



- Prime membership worth its weight in gold
- Next day delivery!
- Household items, gifts, diapers, school supplies, literally everything



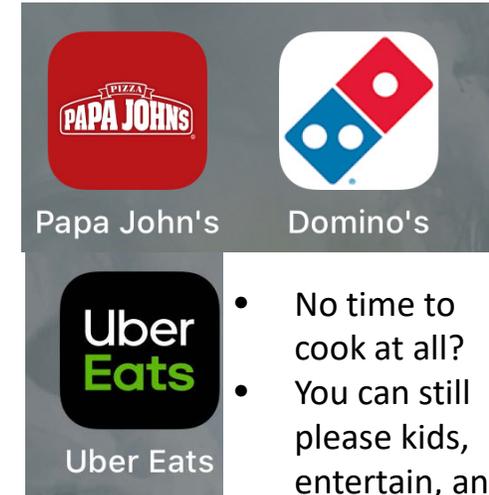
- Anyone can update your shopping list from your kitchen
- List is on your phone when you get to the store



- No time to shop?
- Let someone else do it for you



- No time to meal plan or shop?
- Just choose your meals on the app and all ingredients arrive



- No time to cook at all?
- You can still please kids, entertain, and have semi-decent food



- No time to shop for clothes?
- App-based personal stylist
- Delivers to your home, returns picked up from your home

When maximal efficiency backfires...

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- If you're burning the candle at both ends all the time, there's no room for the unexpected...



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 - OR can get way behind schedule
 - Cars break down
 - Coastal cities flood

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 - Coastal cities flood
- Then what? ***You ask for help!***
 - ***Friends, colleagues, neighbors***
 - ***Apps, outsourcing strategies***

Burnout

- Especially prevalent among surgical specialties, with some surveys showing >50% meeting criteria
- Lots of reasons—*some* are modifiable
 - Long hours, delayed gratification, changing healthcare environment
 - **Work-home life imbalance**
- Scary consequences
 - Attrition
 - Depression, substance abuse, disruptive behavior
 - Strained relationships, divorce

Dimou et al, J Amer Coll Surg 2017

Physician Burnout Is Widespread, Especially Among Those in Midcareer

About half of doctors surveyed would take a big pay cut to aid work-life balance, report says



Overall, 42% of the physicians surveyed across 29 specialties reported feeling some sense of burnout.

Wall Street Journal 2020

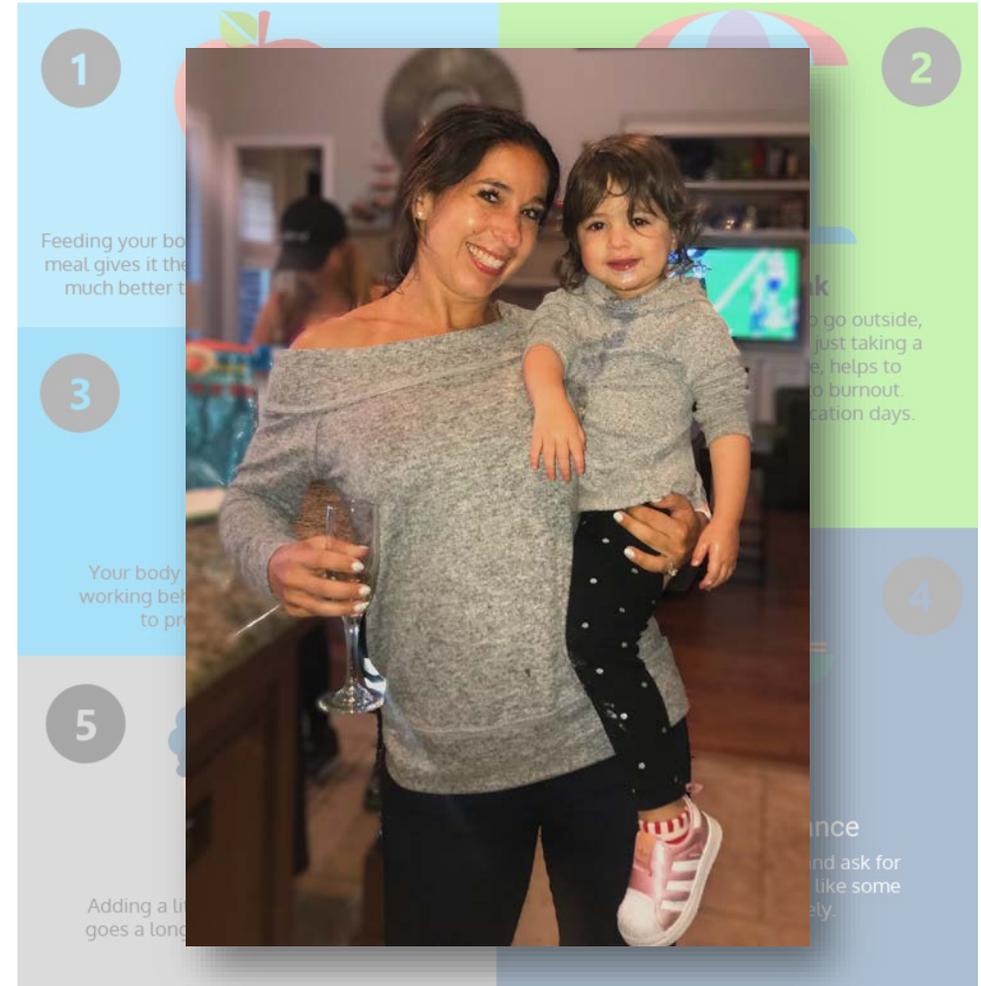
Dealing with stress to avoid burnout

- Everyone's needs are different
- My strategies
 - Family
 - Exercise
 - Debriefing
 - Make time for vacations
- Other strategies
 - Say "no"
 - Get enough sleep
 - Meditate



Dealing with stress to avoid burnout

- Everyone's needs are different
- My strategies
 - **Family (+/- a glass of wine)**
 - Exercise
 - Debriefing
 - Make time for vacations
- Other strategies
 - Say "no"
 - Get enough sleep
 - Meditate



Finding support

- Why do we need support systems?
- Lack of support system as risk factor for physician burnout
- Family, social, and professional support systems all shown to be effective strategies for physicians to:
 - Reduce stress
 - Prevent burnout



Patel et al, Behav Sci 2018

Gender-specific data on burnout

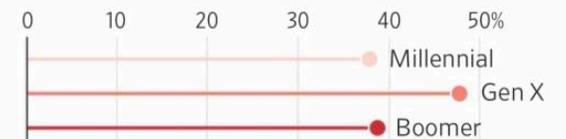


- Multiple studies show female sex to be risk factor for burnout among physicians, and to a greater degree among surgeons
 - More frequent work-home conflicts
 - More likely to carry majority of child-rearing duties
 - More likely to have dual-career households

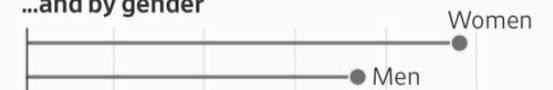
Burnout Breakdown

While burnout rates and causes are similar across all age groups, there are some generational differences.

Share of doctors burned out by generation...



...and by gender



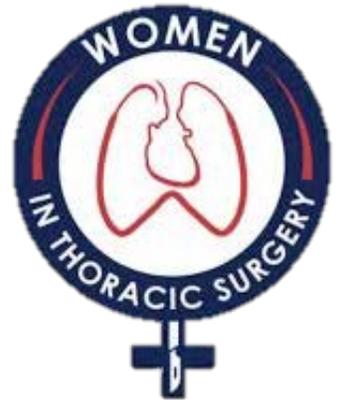
Wall Street Journal 2020

Dyrbye et al, Arch Surg 2011

Gender-specific data on burnout



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- **Networking may be even more important**
 - Survey data demonstrating that **women surgeons were more likely to desire same-sex mentors and colleagues, yet less likely to have such a network** within their own institution
 - Findings even **more pronounced for women in CT surgery**



Dyrbye et al, Arch Surg 2011; Luc et al Semin Thorac Cardiovasc Surg 2018

Value of networks *outside* of work

Lessons that I've learned

- We need a village! It's true in patient care, and even more so in personal life.
- People want to help.
- Non-physicians who care about you will understand and forgive you. It took me a while to make the right friends who were ok with this.
- You will inevitably give back in other ways—emergency medical advice, etc.



I **DO** feel like I have it all



Inspired kids



Rewarding cases



Network of support



Leadership opportunities



Talented team



Grateful patients

I **DO** feel like I have it all



Healthy, happy family

For me, work-life balance means:

- Making an impact on our specialty and the lives of patients.
 - *I am better able to do this because of the ways that I am molded by my personal life.*
- Living a full life outside of work and have meaningful relationships
 - My job allows me to set a positive example for my children, and *my skillsets from work make me a better spouse/parent/friend/family member.*

I'd be glad to share my strategies, be a part of your network, or answer any questions!

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