

Vascular Training Paradigms: Integrated vs. Independent?



Murray L. Shames, MD, FACS, RPVI
Professor of Surgery and Radiology
Program Director Vascular Surgery

Vascular Annual Meeting
San Francisco
May 2013

Vascular Training Programs

- **0+5 track**—Eligible for board certification in vascular surgery only.
- **4+2 Early Specialization Program (ESP) track**—Eligible for vascular surgery and general surgery certification
- **3+3 track**—Eligible for board certification in vascular surgery only.
- **5+2 track**—Eligible for board certification in both general surgery and vascular surgery.

Traditional Vascular Training

Vascular Surgery Fellowship

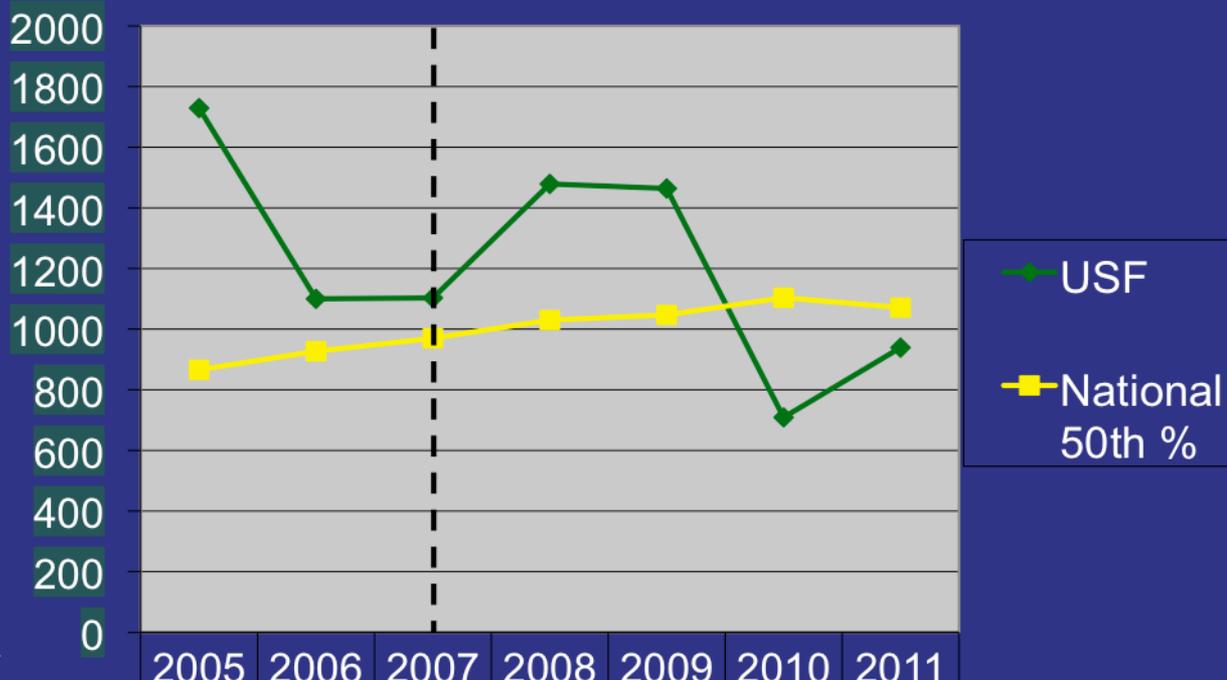
- Complete 5 years general surgery
- May include 1-2 years additional research
- Expected to have done 12 months during general surgery training
- 2 years clinical training in vascular surgery
- Board Certification in General and Vascular Surgery

USF Fellow Case Volumes

Year

Total Primary + Secondary Procedures

Total Cases Over 2 year
Fellowship



Year	USF	National 50th %
2005	1729	866
2006	1100	927
2007	1103	970
2008	1479	1030
2009	1464	1047
2010	709	1104
2011	939	1071

General Surgery Training

- Curriculum not standardized
 - Laparoscopy
 - Upper GI surgery
 - Colorectal Surgery
 - Breast
 - Bariatrics
 - Cardiac & Thoracic Surgery
 - Vascular Surgery
 - Trauma and Critical Care
- Eligible for General Surgery Board Certification

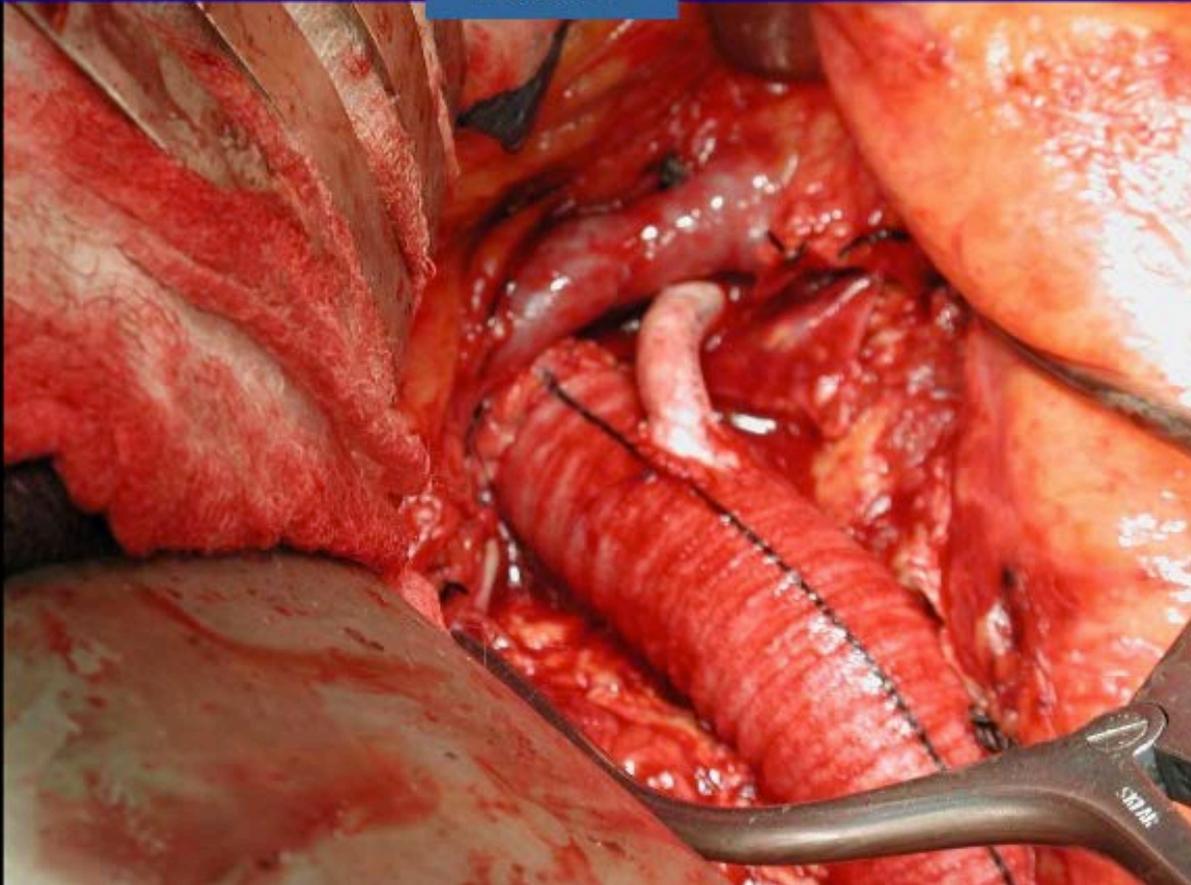
Reality of General Surgery Training

- There aren't any more general surgeons.
- 70 - 80% of graduates seeking advanced fellowship.
- Unrealistic expectation
 - Too many areas of specialty
 - Too many advanced fellowships
 - Too many new tools
- Goal of current training is core principles “Surgery in General”.
- Plastic Surgery successful transition to integrated training.

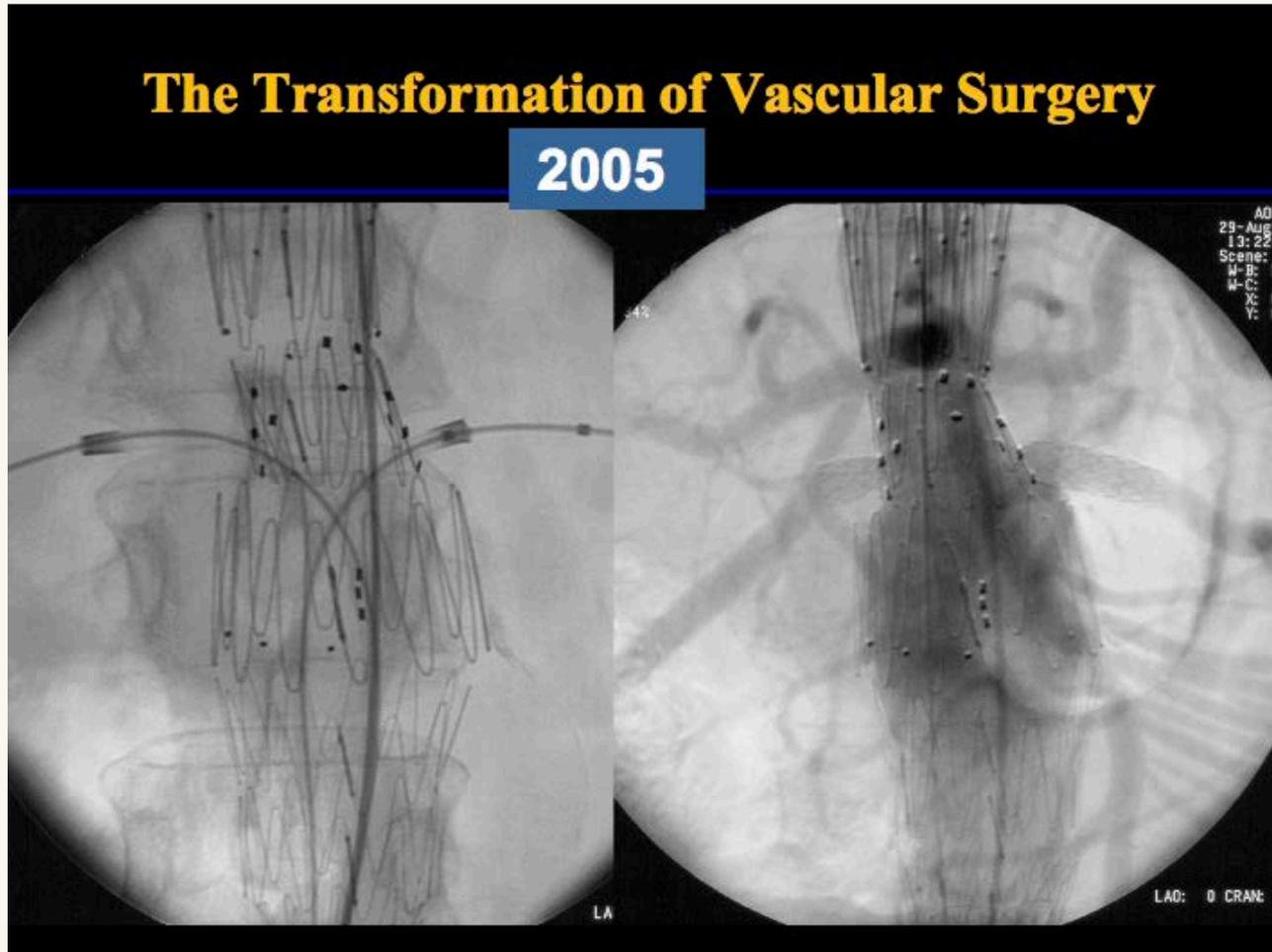
Vascular Surgery is Changing

The Transformation of Vascular Surgery

1993



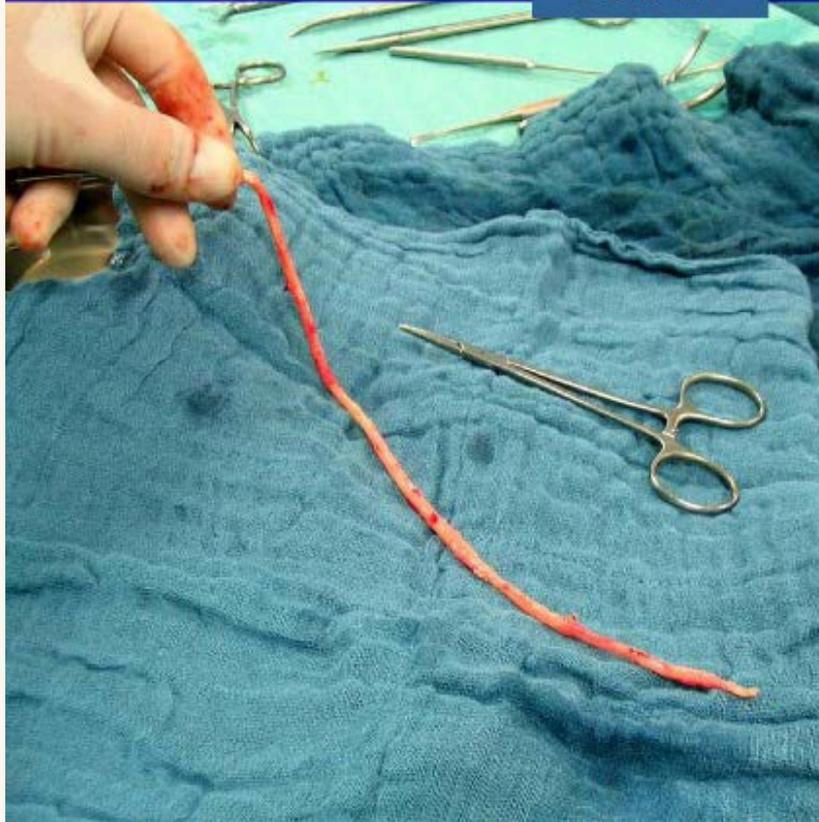
State of the Art Endovascular Interventions



Bypass Procedures – Gold Standard

The Transformation of Vascular Surgery

1994



Now Endovascular First Line

The Transformation of Vascular Surgery

2007



Why Develop an Integrated Program?

- Vascular fellows completing training do not practice general surgery
- Too much time spent on procedures vascular surgeons will never do
 - Laparoscopy
 - Endoscopy
- Eliminate need for a second application and match (time & \$)
- More attractive sub-specialty residency
 - 40% of integrated residents are women(60% in our program)
 - Higher percentage AOA
- Will get better applicants – thus better residents
 - Higher USMLE
 - More publications
- Better way to train a vascular surgeon
 - Focused skill set
- Permit earlier, mastery of endovascular skills
- Increase number of vascular surgeons entering practice
- ONLY Vascular Board Certified

Critical Components

- Adequate case volume and distribution
- Multiple Sites/Services
- Faculty
 - Education
 - Research
 - Endovascular training
 - Simulation
- Control over Core Curriculum
- \$\$ Support

Potential Obstacles

- Dept. Chair
- GME Funding
- General Surgery Program Director
- General Surgery Residents
- Vascular Fellow's

Integrated Residency Requirements

- 24 months General Surgery (core)
 - Recommended to take general surgery in-service exam
 - Required to pass SPE exam for eligibility for vascular boards
- 36 months Vascular & Endovascular Surgery
 - Rotations are not standardized***
 - Must include vascular lab interpretation
 - Final year all vascular
 - Annual Vsite exam (changing to SPE site)
 - Required RPVI
- Many programs have 1-2 year research requirement
- Required to take SPE exam(4th year) and Vascular Written and Oral Exam

Infrastructure of the Integrated Residency

- Provide a CORE of surgical principles
- Detailed knowledge of Vascular Imaging
 - Angio
 - CT
 - MR
- Vascular Lab
- Vascular Medicine
- Endovascular Skills
- Traditional Vascular Surgery

Integrated Residency Rotation Schedule

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
PGY1	General Surgery		Vasc Surgery		Cardio	Trauma		Vasc Surgery		APC	Gen'l Surgery	Radiology
PGY2	Transplant Surgery		Vasc Surgery		Cardiac Surgery	Trauma ICU	General Surgery		Trauma		Vasc Surgery	
PGY3	Vasc Surgery		Trauma		Cardiac Surgery	General Surgery			Vasc Surgery	Endovascular/ Vascular Lab		Peds Surgery
PGY4	Vasc Surgery FH		Vasc Surgery FH		Vascular Surgery TGH				Vascular Surgery VA			
PGY5 Chief	Vasc Surgery FH		Vasc Surgery FH		Vascular Surgery TGH				Vascular Surgery VA			

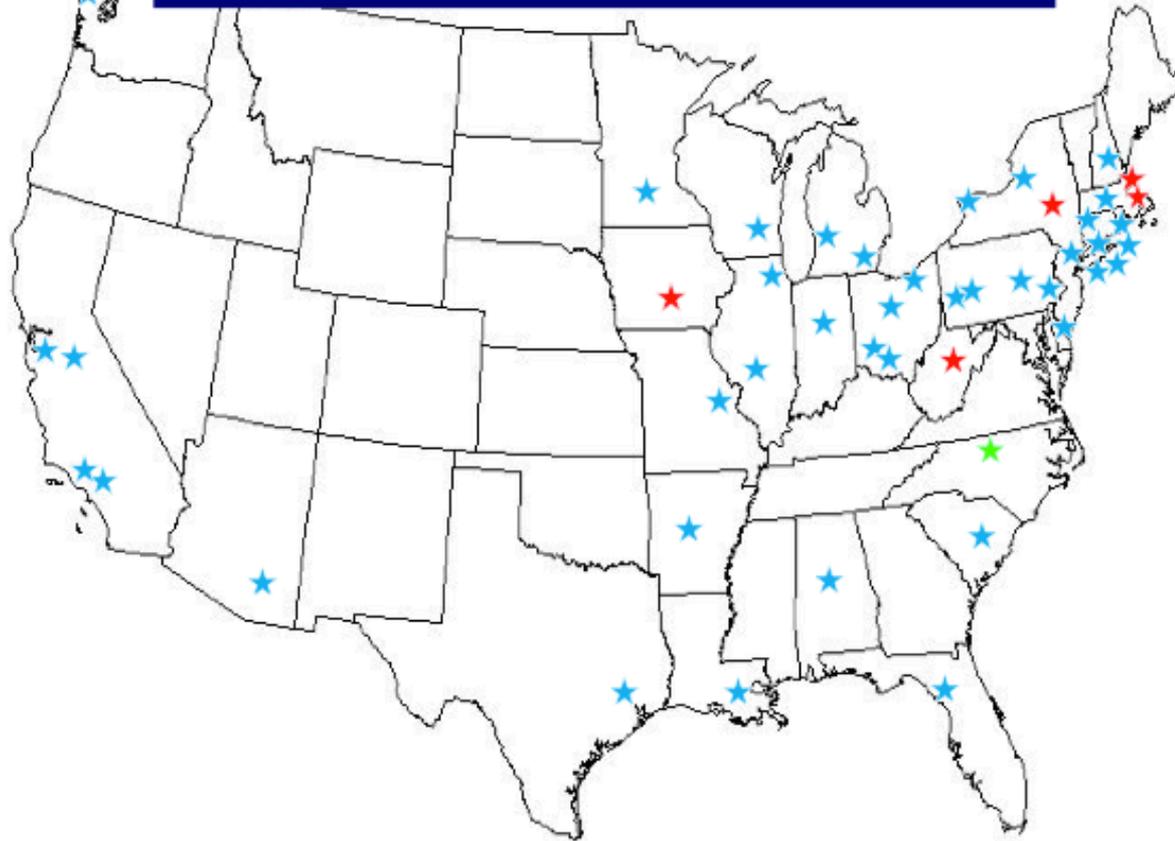
Integrated Training Programs

**Integrated
Programs in
Vascular
Surgery
March 2013**

**40 programs
47 positions**

**5 new
programs
approved in
February
2013**

**39 Programs participated
46 Positions offered in 2013 Match**



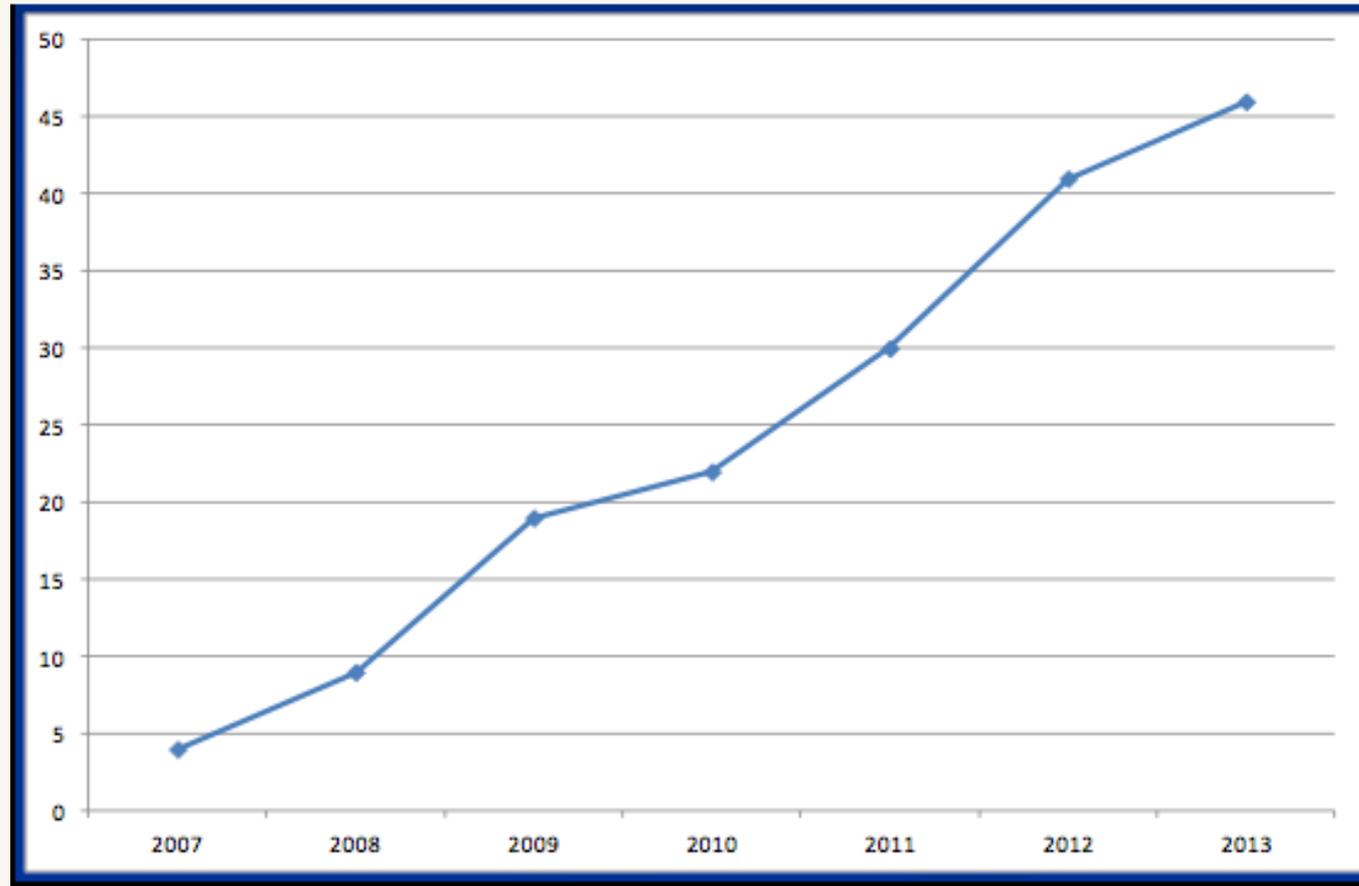
Vascular Surgery in Florida

- Insufficient number of surgeons for population
 - estimated 18 million in 2010
 - no vascular surgeon in many counties
 - ABS-VS certified surgeons perform 1/3rd of procedures
- Number of medical school graduates increasing
 - 450 “new” MD’s and DO’s each year
- Only three 2-yr training programs available in Florida
- 1 “integrated” vascular surgery training program

New Integrated Vascular Positions

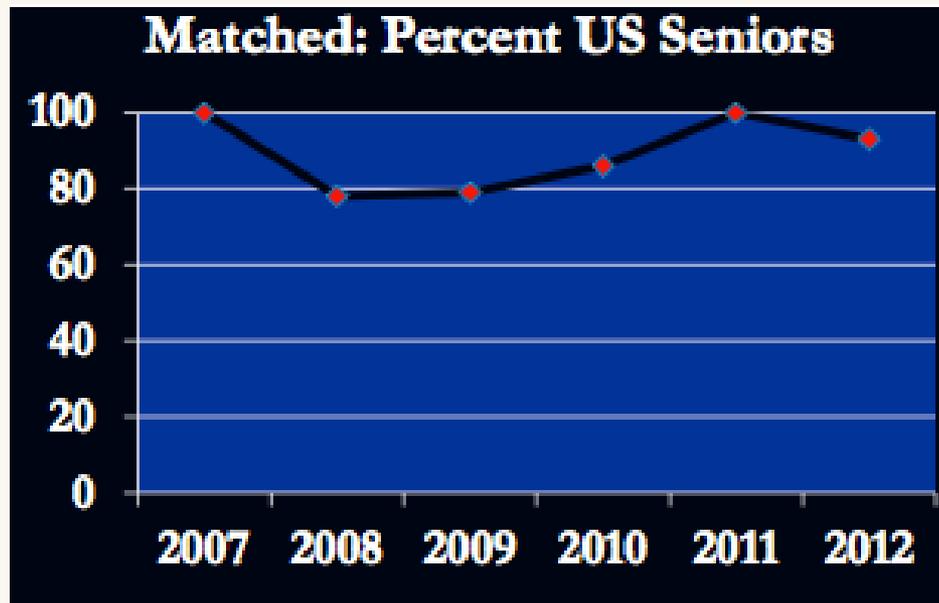
- Feb RRC Approved
 - Beth Israel Deaconess
 - MGH
 - Univ Iowa
 - Albany Medical Center
 - Charleston Area Medical Center
- Total 45 Programs and 52 Positions

Integrated Vascular Positions



2013 Integrated Vascular Match

- Approximately 200 Applicants
- 84 Applicants interviewed (49 US Seniors)
- 45 Matched (37 US Seniors)



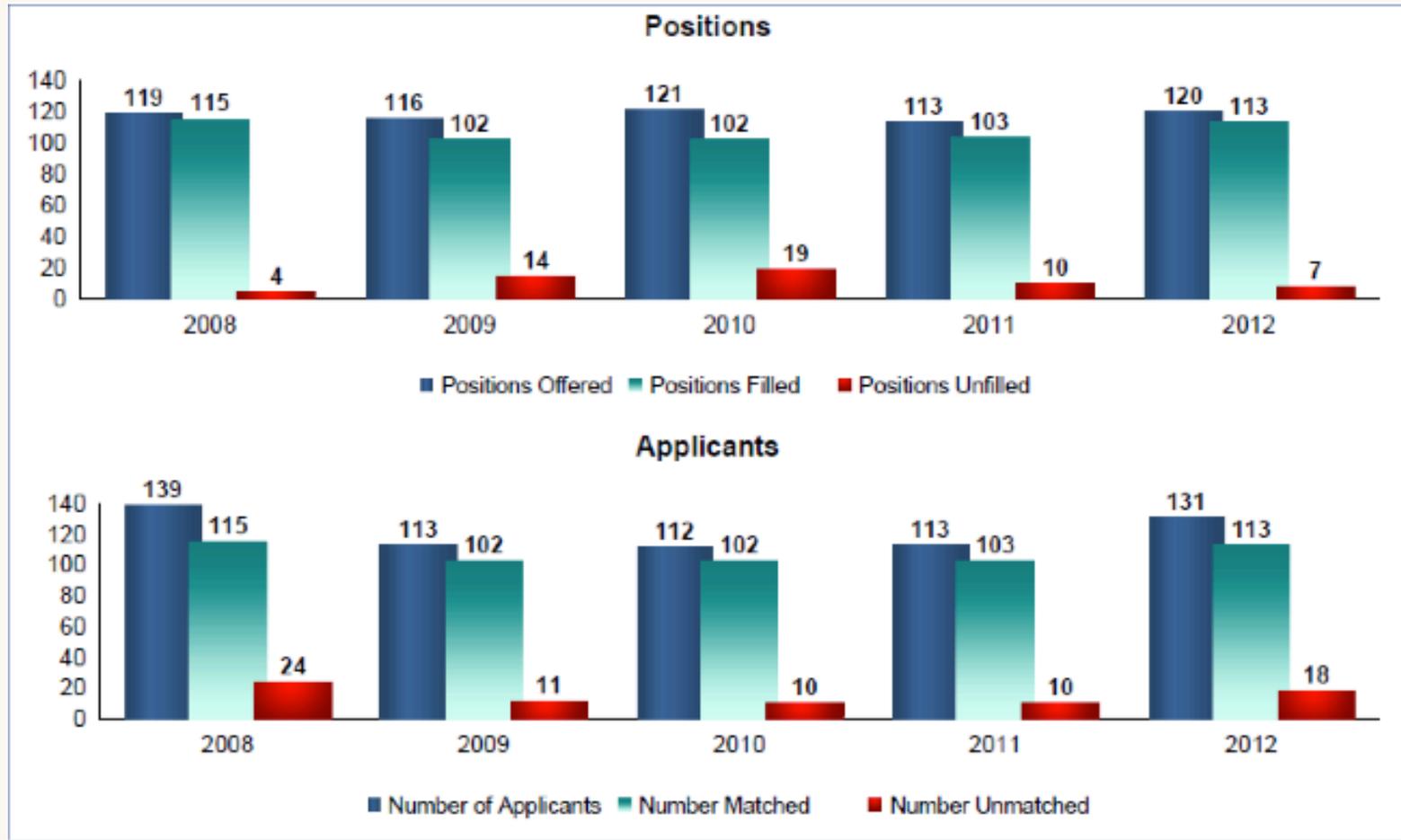
Amongst Most Competitive Match

Program	Positions	Unfilled	Total Appl	# US Appl	% US citizens
Anesthesiology	1073	19	1893	1208	69.7%
Internal Medicine	6277	14	11030	3710	49.9%
Neurosurgery	204	1	314	241	93.1%
Orthopedic Surg	693	1	1038	833	91.8%
Radiology - Diagnostic	164	9	820	595	61.6%
General Surgery	1185	3	2415	1295	80.5%
Thoracic Surgery	26	0	79	52	85.6%
Vascular Surgery	46	1	84	49	80.4%

Independent Residency

- 104 Independent Programs (Fellowships)
- 2 New Programs
 - Michigan State University College of Human Medicine
 - University of Oklahoma School of Community Medicine (Tulsa)

Trends in Fellowship Match



USF Integrated Vascular Residency

- 0+5 format, approved February 2007 (1 year approval)
- 6 months general surgery each of first 4 years
 - Transitioned to 4 months PGY 1-3 and final 2 years
- No extra research year initially, now with 2nd position will offer 1 year research tract
- 2 senior year's all in vascular surgery (to rotate with 5+2 fellows)
- Seamless integration with general surgery residency
- Maintained traditional fellowship (5+2) track
- 2008 - 5 year ACGME approval for both programs

USF Integrated Applicant Pool

- 2007 (ACGME approval)
 - 3 applicants (1 internal)
- 2008 NRMP match
 - 89 applicants
 - 5 (5%) interviewed (internal candidate matched)
- 2009
 - 104 applicants (18% increase)
 - 14 (13%) interviewed (0 internal)
- 2010
 - 106 applicants (stable)
 - 28 (26%) interviewed (0 Internal)
- 2011
 - 112 Applicants
 - 15 Interviewed (1 Internal)
- 2012
 - 104 applicants
 - 13 interviewed
 - 1 internal (Mich)
- 2013
 - 90 applicants
 - 16 interviewed
 - Matched 2 (1 internal)

Integrated Vascular Residents

- 1st graduates last year
 - Stony Brook - stayed as faculty
 - USF – Complex Aortic Fellowship at Cleveland Clinic and staying on as faculty

Integrated Vascular Residency

- Allows early identification of specialty identity
- Integration with vascular fellows advantageous to both groups
- Shared call necessary with 80 hr/week schedule
- 2 senior years equivalent to fellowship with respect to chief responsibilities
- Independent Residency still a good alternative