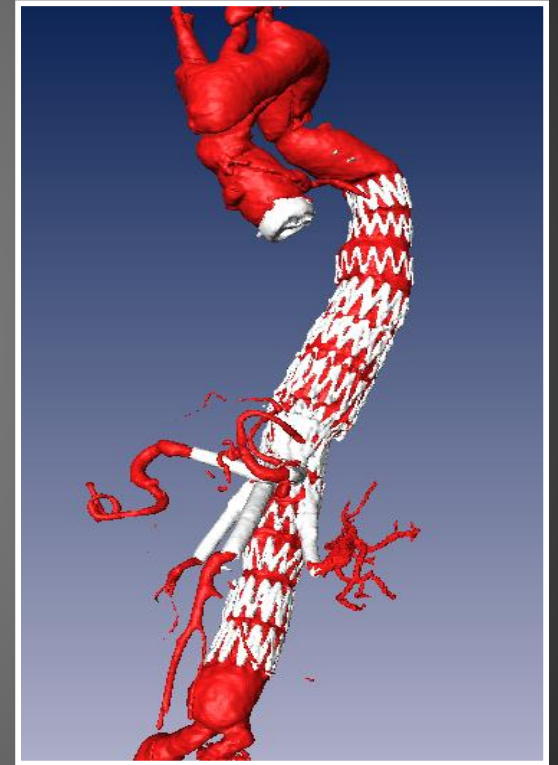
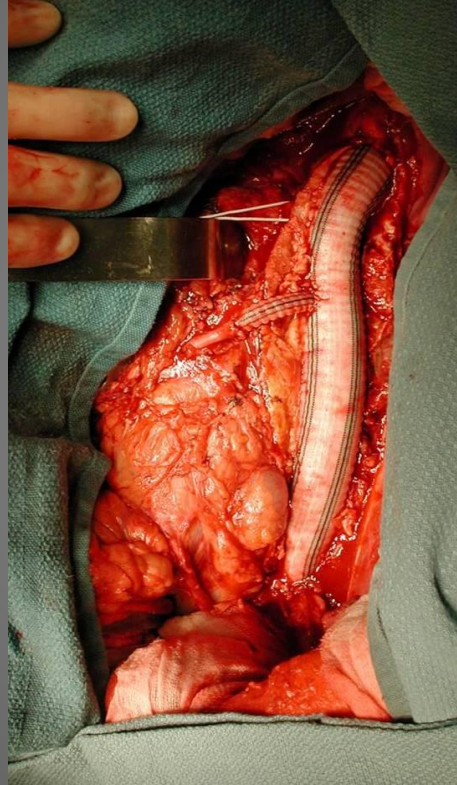
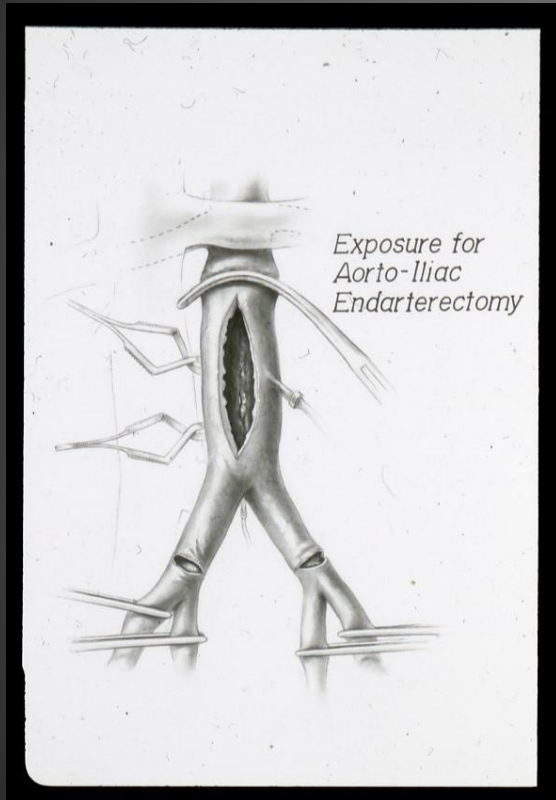


# VASCULAR SURGERY TRAINING: *A 50-Year Revolution*



UCSF

University of California  
San Francisco

Michael S. Conte MD  
Wylie Society Dinner Meeting 2013  
San Francisco, CA



# REV·O·LU·TION (noun)

- A sudden, radical, or complete change
- A fundamental change in the way of thinking about or visualizing something: *a change of paradigm*
- *Merriam-Webster on-line*

# 1950's: Dawn of Vascular Surgery

- Post-WW II era- heparin, blood replacement
- Abdominal Aortic Aneurysm
  - Freeman, Dubost, Voorhees, DeBakey, Etheredge
- Peripheral Occlusive Disease
  - Dos Santos, Wylie, Kunlin, Linton, Dotter
- Extracranial carotid disease
  - Fisher, Eastcott, Rob, Cooley, DeBakey
- First group of dedicated vascular surgeons
  - UCSF: Freeman, Wylie. 1958- teaching service

# 1960's: Apprenticeships Develop

- Informal apprenticeships spring up in academic centers
  - Linton (MGH), Freeman (UCSF), others
- Malcolm O. Perry MD
  - Newly hired to UT Southwestern faculty 1961
  - Attended to JFK in Parkland ER
  - “Perhaps you would be interested in vascular?”
  - G. Tom Shires, Jesse Thompson, Jack Wylie discuss advanced training





**GREAT MINDS  
THINK ALIKE**



# Malcolm O. Perry: 1<sup>st</sup> Vascular Fellow

- UCSF 1962-1963
- Wylie: “There’s no money for it”
- Goldman (chair): OK as long as it doesn’t disrupt the residency
- Greeted by residents with “undisguised hostility”
- Research on renal ischemia
- Wednesday conferences- Wylie, Blaisdell, Levin
  - “Do it Right”; technical success ≠ clinical durability
- 3<sup>rd</sup> year residents: Ron Stoney, Wes Moore
- Allegiance to Shires: Parkland- Seattle– NY Hospital
- Noted expert in management of Vascular Trauma
- SVS President 1992

# Edwin J. (“Jack”) Wylie (1918-1982)

- Pomona College, Harvard Medical School
- Internship in GS at New York Hospital
- UCSG General Surgery residency (H. Glenn Bell)
- UCSF Faculty 1948-1982
- Influenced by Norman Freeman early in career
- First aortoiliac thromboendarterectomy 1951
- Dedicated vascular service at UCSF 1958
- Carotid, visceral occlusive diseases, arterial autografts
- President ISCVS (1970), SVS (1980)
- Seminal figure in training and accreditation for VS
  - Certificate No.1 “Special Competence in Vascular Surgery”

Surgery: 1952.

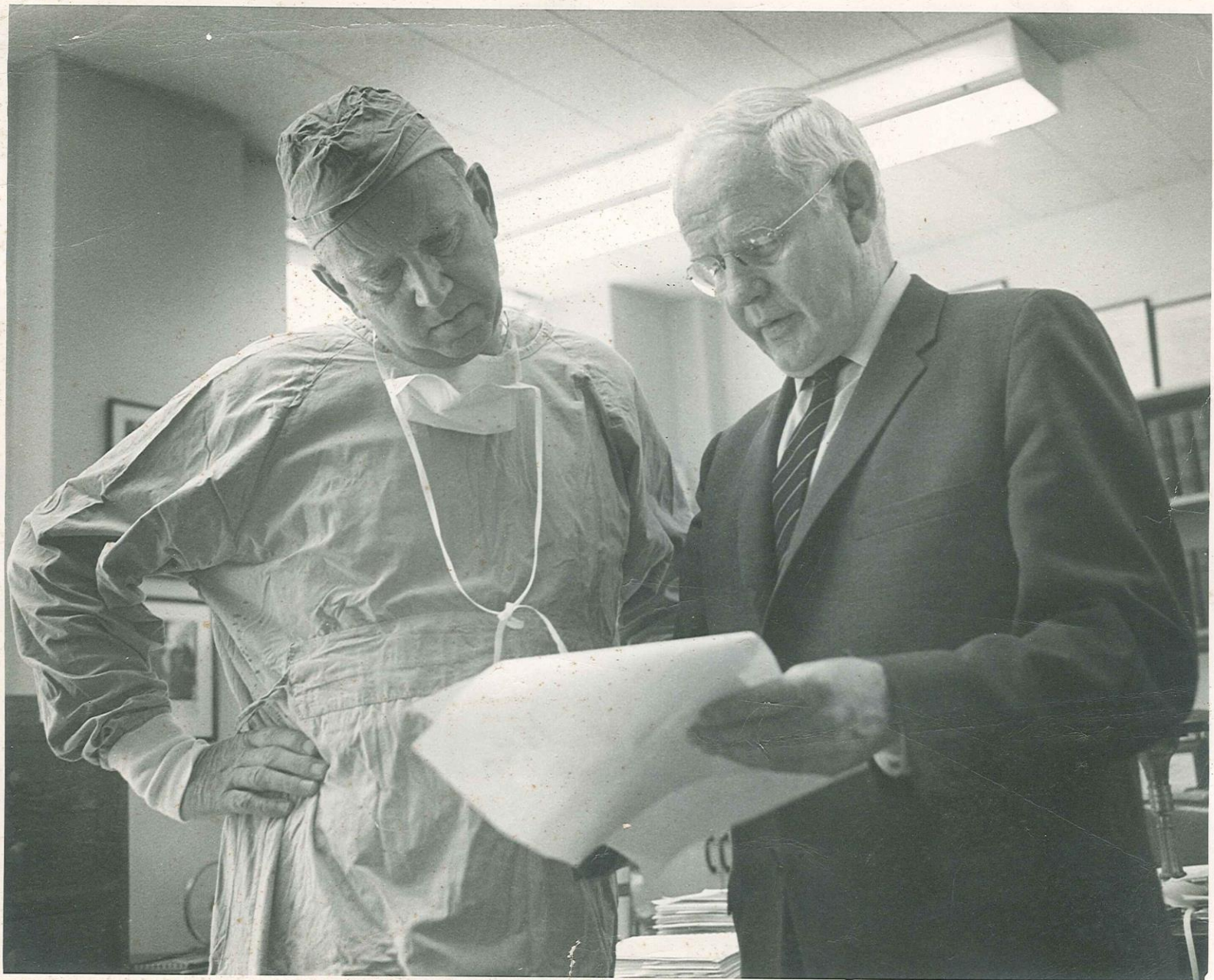
THROMBOENDARTERECTOMY FOR ARTERIOSCLEROTIC  
\* THROMBOSIS OF MAJOR ARTERIES

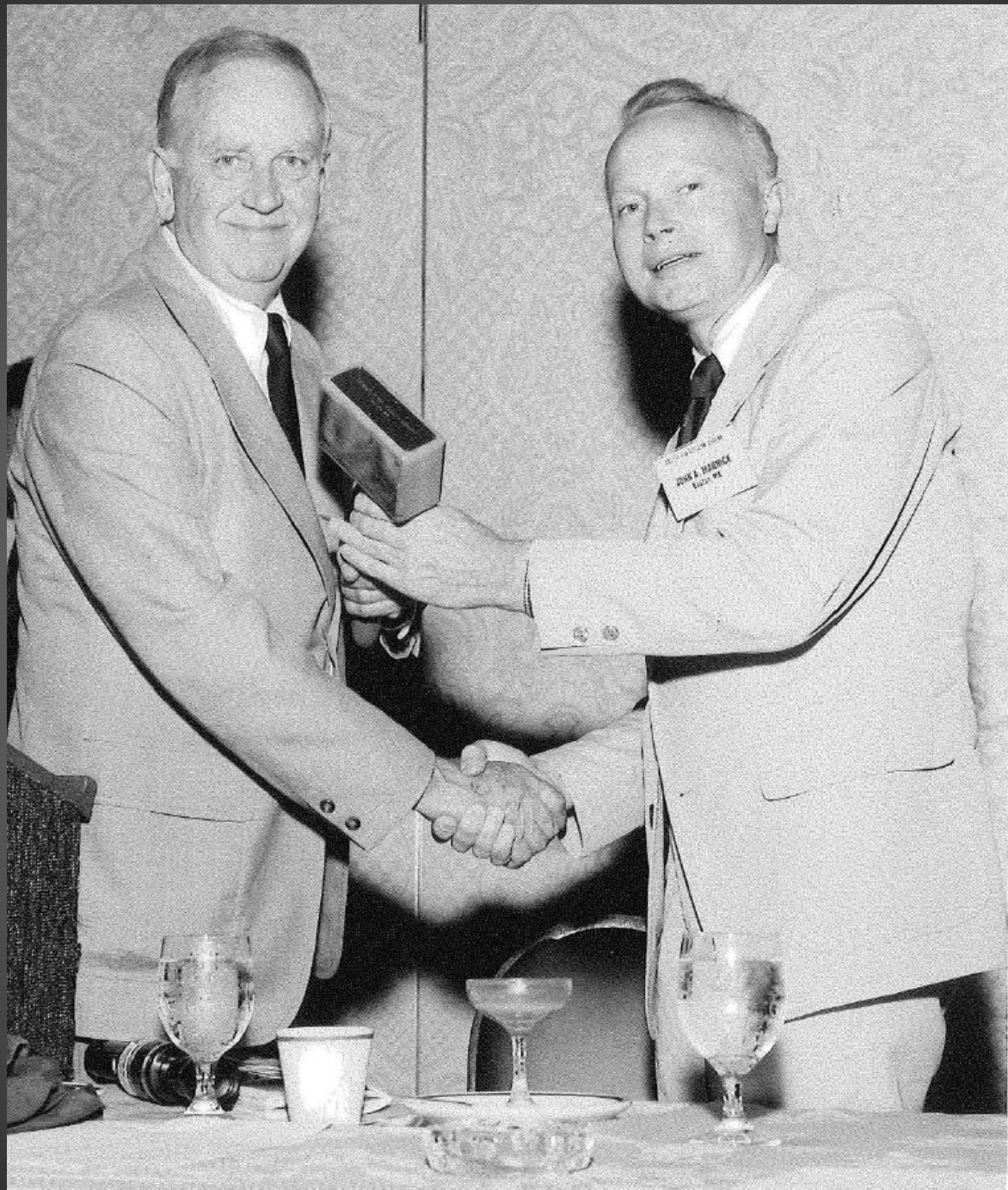
EDWIN J. WYLIE, M.D., SAN FRANCISCO, CALIF.

*(From the Division of Surgery, University of California School of Medicine)*

THE feasibility of thromboendarterectomy to restore the patency of major arteries occluded by arteriosclerosis has been studied at the University of California Hospital in a series of 26 patients. Previous reports by Dos Santos and others have indicated that in selected cases of arterial thrombosis due to arteriosclerosis it is possible to resect the diseased interior of thrombosed arteries and to reconstruct these arteries by suturing the remaining outer coat of media and adventitia.<sup>1-6</sup> It has been the experience of these surgeons that when occlusion is limited to a segment of a major artery, thromboendarterectomy will in many cases restore the peripheral arterial circulation. Such operations have







# 1960's: Apprenticeships Grow

- Other centers begin dedicated one year programs
  - Jesse Thompson (Baylor) 1964
  - By 1970, more than 90 programs of variable structure
- Increasing number of GS graduates interested in advanced vascular training
- VS practiced by many general and cardiac surgeons
- Variability in quality and case loads
- No standards for training
- No specialty recognition of accreditation

Papers Read Before the Eighteenth  
Scientific Meeting of the  
International Cardiovascular Society,  
Chicago, June 19-20, 1970

December 1970

Vol 101

No 6

*Archives*  
*of*  
*Surgery*

# Vascular Surgery: A Quest for Excellence

Edwin J. Wylie, MD, San

Society For Vascular Surgery

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Presidential address: Vascular  
surgery—Reflections of the past three  
decades

Edwin J. Wylie, M.D., *San Francisco, Calif.*

*From the Department of Surgery, University of California at San Francisco, San Francisco, Calif.*

# 1970's: Need for Standards

- 1970: Regional medical programs
  - Inter-society Commission for Heart Disease Resources (29 organizations)
    - Optimize quality and resources for CV care
  - 1971 Vascular Surgery Resources Subcommittee
    - James Deweese, J Foster, Bill Blaisdell
    - Identified lack of training as the major problem in vascular surgery
    - Lack of consistent access to appropriate ancillary services
    - VS should “keep standardized and detailed records so that their work may be readily judged by its results”

# Vascular Surgery Resources Subcommittee

- “We believe the factors most responsible for the quality of vascular surgery are the judgment and technical skills of the surgeon, both developed through properly supervised training and experience”

## Optimal Resources for Vascular Surgery

James A. DeWeese, MD, Rochester, NY; F. William Blaisdell, MD, San Francisco; and  
John H. Foster, MD, Nashville, Tenn

- Defined “The Essentials Of a Vascular Training Program”
  - Presented at 1972 Vascular Meetings
  - Published in *Circulation* and *Arch. Surg.*
  - Definition, Methods of training, Duration and Scope, Organization and Staff

# 1970's: The Quest for Certification

- 1972: ABS Joint Council appointed subcommittee (Wylie, Szilagyi, Thompson)
  - 1972 Recommended certification
    - ACS approved, ABS tabled.
  - “The Essentials in Training Programs for Vascular Surgery”; presented to ABS in 1974
  - 1977: Multiple revisions, politics; ABS approved the “Essentials” document and the principle of “Special Certification in Vascular Surgery” *within General Surgery*.
  - RRC-s for surgery approved “Essentials” document.
- LCGME tabled guidelines (ABTS objections)
- 1979: SVS and NA-ISCVV vote to approve the “essentials document”

# Certification Attained

- 1979 PEEC: Program Evaluation and Endorsement Committee
- Appointed by the Joint Council (SVS/NA-ISCVS)
- 17 programs approved initially
- 52 programs by 1982
- 1977: ABS agrees in principle to issue certificates in subspecialties
- Negotiations between Joint Council, ABS, ABMS
- 1982: creation of certification in vascular surgery
  - First 14 certificates issues following written examination
  - **EJW: certificate No.1**
  - “Grandfathering” ended in 1989
  - 1989: certificate of “added qualifications” in general vascular surgery



# THE AMERICAN BOARD OF SURGERY

Incorporated



Created in 1937 for the certification of Surgeons  
hereby declares that

## Edwin Jack Wylie

having satisfied all the requirements and  
successfully passed the examination is certified  
as having special qualifications in

### General Vascular Surgery

Attest:

*William J. Fry*  
PRESIDENT

*Carroll D. Shumaker*  
VICE CHAIRMAN

Philadelphia, Pa.

ISSUED: *June 30, 1982*

VALID UNTIL: *July 6, 1992*

*W. H. ...*  
SECRETARY/TREASURER

CERTIFICATE NO. 1

# 80's and 90's: Maturation and Tension

- ACGME founded in 1981
- RRC-s formally took over the review of programs in 1983
- “Five plus one”
  - General Surgery Certification and Vascular Certificate
- “Five plus two”
  - Initially a research year, not accredited
  - Second year approved in 2000 for Endovascular training
  - Mandatory catheter-based training in 2004
  - Two years minimum training length as of 2006
- APDVS incorporated 1993
  - Refined curricula for basic, clinical science
  - Direct Input to RRC-s
- Mid 90's: conflicts with ABS led to ABVS (1996)
  - Ultimately led to VS Sub-board of the ABS (1998)

# Endovascular Revolution: Impetus for Change

- Parodi (1991) – EVAR
- Need for adequate training in catheter-based skills apparent
- Most VS programs initially not positioned to provide training without help from other specialties
- Informal fellowships in endovascular spring up as part of retraining of VS workforce
- Mandatory component of training as of 2000, with minimal case volumes established



# The New Millenium:

## Development of Alternative Pathways

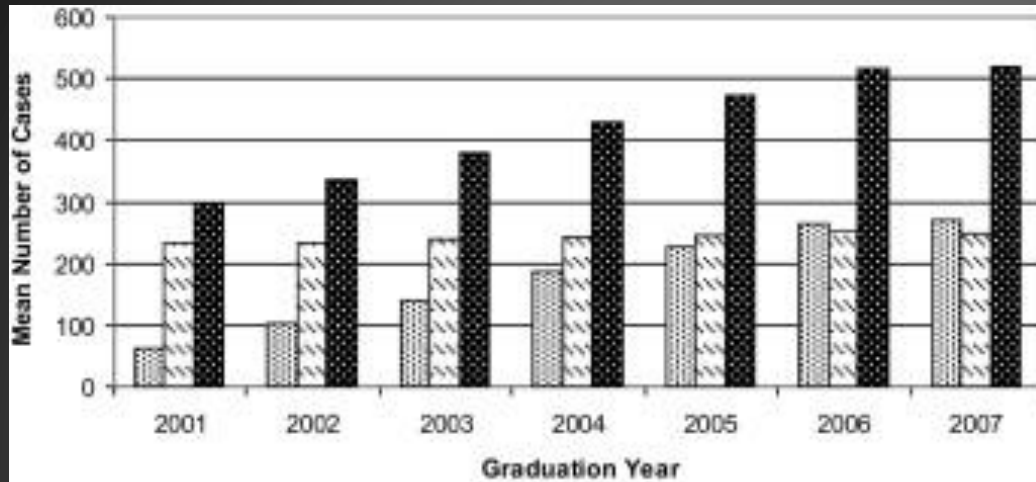
- Length of training (minimum 7 years) and debt became a disincentive for VS training
- 2004, 2005: insufficient applicants
- Early Specialization Project (2003): 4 + 2
  - Same institution; board eligible for both GS and VS
- 2005: Primary Certificate in VS
  - Program requirements approved by RRC-s
  - VS Sub-board becomes VS Board (2007)
  - Independent (3 + 3) and Integrated (0 + 5) pathways
- 2007: Integrated programs at Dartmouth, UPMC, Michigan

# The New Millenium: Development of Alternative Pathways

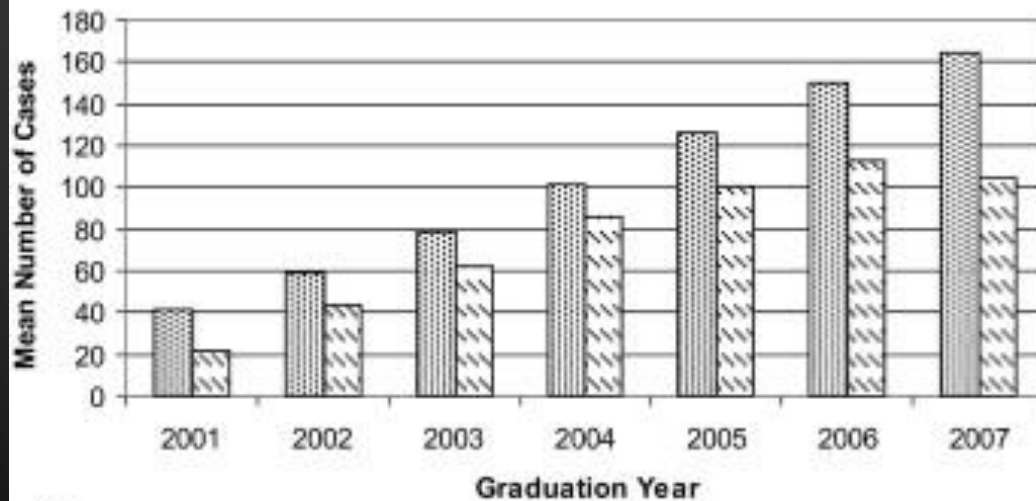
Type	Duration	Certification	Institution	No. Programs
Standard	7 (5+2)	GS and VS	Can be different	104
ESP	6 (4+2)	GS and VS	Single	
Independent	6 (3+3)	VS only	Single	
Integrated	5 (0+5)	VS only	Single	43

- Minimum case requirements same
  - 250 Major Cases
  - Endovascular diagnostic and therapeutic

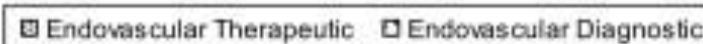
# Evolution of Fellow Operative Experience



**A**



**B**



- Mean number of total procedures performed by trainees has increased
- Endovascular procedure volumes have grown steadily
- Open AAA and visceral reconstructions decreased
- Open infrainguinal procedures have remained constant
- Recent data suggests slight decline in CEA

# 2013: Continued Transition

- Continued growth of Integrated Programs
- First graduates of 0 + 5 in 2012
- Overlap of 0+5 and 5+2 trainees creates tension
- Transitions continue at many programs
  - Whether to keep both integrated and traditional tracks
  - How to maintain research experience
  - Develop greater exposure for medical students
  - Further segregation from general surgery
- Open volumes (especially complex, aortic) a growing concern

# Vascular Surgery Training in 2013: Challenges

- Need for accurate workforce predictions
  - Impact of aging population and healthcare reform/accountable care
- Funding for GME constricting
- Increasing work hours regulations
- Candidate pool
  - Insuring exposure of medical students to vascular surgery
  - Diminishing exposure of GS residents especially in institutions with Integrated Programs
- Training in open surgical skills
  - Traditional tract “vascular finishing school”
  - Impact of endovascular revolution on open volumes
  - Increased complexity of open vascular surgery
- Defining the role for simulation
- Research exposure disappearing
  - Threat to leadership in discovery and innovation



# THE OREGON HEALTH SCIENCES UNIVERSITY

Department of Medicine — L465  
Section of Clinical Nutrition  
and Lipid Metabolism

3181 S.W. Sam Jackson Park Road Portland, Oregon 97201 (503) 225-8005

August 31, 1983

Office administrative staff  
Department of Surgery  
Moffit Hospital  
Univ. of California at San Francisco  
San Francisco, CA 94143

Greetings,

This letter will introduce Dr. Joseph H. Rapp. He is a fine surgeon, a lively conversationalist, and a superb baker, but his spelling skills are a bit, well, lousy. He will severely tax your patience. Be kind to him. He tries. Praise his creativity, but be firm. He has a pocket edition of The Bad Speller's Dictionary, with a medical supplement, so do not be swayed by his big brown eyes. He must accept responsibility for his syntax, along with his sutures.

His "bribes" of rhubarb pie and apple bread will more than compensate for the extra "translation" skills which his rough drafts require. We have found that rewarding him with one snickerdoodle cookie per double-spaced page with no more than one spelling error is an effective behavioral modification technique with Dr. Rapp. I am sure he will progress under your tutelage.

In comradeship,

*Paula Bisaccio*

Paula Bisaccio

*Patricia Schade*

Patricia Schade

*Joanne Skirving*

Joanne Skirving

# CONCLUDING REMARKS

# MENTORSHIP

