

# Understanding the Pathology Job Market: An Analysis of 2,330 Pathology Job Advertisements from 2013-2017

Debra L. Zynger, MD  
Professor  
Director of Urologic Pathology  
Department of Pathology  
The Ohio State University Medical Center

Nat Pernick, MD  
President  
PathologyOutlines.com, Inc.



**THE OHIO STATE UNIVERSITY**  
WEXNER MEDICAL CENTER

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# Background

- There has been a downward trend in the number of pathology residency applicants

# Background

- 37% of pathology residency spots filled by US MDs
  - Lowest of any specialty
- Downward trend over the past 5 years
  - Only specialty with a downward trend

**Table 7** Positions Offered and Number

Specialty	2018	
	Offered	Filled
	#U.S.	#Tot
<b>PGY-1 Positions</b>		
Medicine-Emergency Med	20	22
Medicine-Family Medicine	2	2
Medicine-Medical Genetics	1	1
Medicine-Neurology	0	0
Medicine-Pediatrics	382	306
Medicine-Preliminary (PGY-1 Only)	1,883	1,370
Medicine-Preventive Med	6	4
▲ Medicine-Primary	374	229
▲ Medicine-Psychiatry	24	20
Interventional Radiology (Integrated)	35	34
Neurodevelopmental Disabilities	4	3
Neurological Surgery	225	203
▲ Neurology	552	280
▲ Obstetrics-Gynecology	1,336	1,051
OB/GYN-Preliminary (PGY-1 Only)	21	6
Orthopedic Surgery	742	691
Osteo Neuromusculoskeletal Med	2	0
Otolaryngology	315	284
▼ Pathology	601	220
Pediatrics (Categorical)	2,768	1,746
Pediatrics-Anesthesiology	7	6

**Table 13 Applicant Choices by Specialty, 2018**

Specialty	U.S. Seniors					Independent Applicants				Positions per All Applicants
	Total Positions	Preferred Choice		Not First Choice	Positions per U.S. Senior	Preferred Choice			Positions per IA	
		Only Choice	First Choice			Only Choice	First Choice	Not First Choice		
Anesthesiology	1,840	865	264	62	1.6	516	359	120	2.1	0.9
Child Neurology	168	84	19	11	1.6	25	38	32	2.7	1.0
Dermatology	472	77	374	12	1.0	157	43	8	2.4	0.7
Emergency Medicine	2,278	1,559	189	90	1.3	674	271	118	2.4	0.8
Family Medicine	3,629	1,512	123	308	2.2	2,033	734	1,719	1.3	0.8
Internal Medicine	7,916	3,220	186	340	2.3	4,675	1,951	1,659	1.2	0.8
Internal Medicine (Prelim)	1,883	73	157	1,259	8.2	46	76	1,165	15.4	5.3
Internal Medicine/Emergency Medicine	26	0	30	30	0.9	0	12	22	2.2	0.6
Internal Medicine/Pediatrics	382	233	89	52	1.2	38	79	89	3.3	0.9
Internal Medicine/Psychiatry	24	2	19	27	1.1	2	9	29	2.2	0.8
Interventional Radiology	136	2	204	80	0.7	4	43	49	2.9	0.5
Neurological Surgery	225	219	16	5	1.0	50	25	10	3.0	0.7
Neurology	859	374	113	19	1.8	315	268	193	1.5	0.8
Obstetrics and Gynecology	1,336	964	231	33	1.1	336	214	103	2.4	0.8
Obstetrics and Gynecology (Prelim)	21	0	0	158	0.0	3	4	82	3.0	3.0
Orthopaedic Surgery	742	755	84	10	0.9	91	57	20	5.0	0.8
Otolaryngology	315	279	18	2	1.1	19	13	2	9.8	1.0
Pathology-Anatomic and Clinical	601	218	6	13	2.7	397	71	162	1.3	0.9
Pediatrics	2,858									
Pediatrics/Medical Genetics	20									
Pediatrics/Psychiatry/Child and Adolescent Psychiatry	21									
Physical Medicine and Rehabilitation	421									
Plastic Surgery	168									
Psychiatry	1,556									
Radiation Oncology	194									
Radiology-Diagnostic	1,099									
Surgery-General	1,319									
Surgery-General (Prelim)	1,363									
Thoracic Surgery	36									
Vascular Surgery	60	20	33	8	1.1	5	19	6	2.5	0.8
<b>TOTAL *</b>	<b>33,167</b>	<b>15,262</b>	<b>3,555</b>	<b>4,668</b>		<b>12,334</b>	<b>5,950</b>	<b>8,130</b>		

20% of pathology applicants: pathology is not their 1<sup>st</sup> choice of specialty

1<sup>st</sup> choice for 95% of US MD applicants

1<sup>st</sup> choice for 74% of nonUS MD applicants

83% of matched applicants into pathology applied to only pathology

JAMA | Original Investigation

# Association of Clinical Specialty With Symptoms of Burnout and Career Choice Regret Among US Resident Physicians

Liselotte N. Dyrbye, MD, MHPE; Sara E. Burke, PhD; Rachel R. Hardeman, PhD, MPH; Jeph Herrin, PhD; Natalie M. Wittlin, MS; Mark Yeazel, MD, MPH; John F. Dovidio, PhD; Brooke Cunningham, MD, PhD; Richard O. White, MD; Sean M. Phelan, PhD, MPH; Daniel V. Satele, BA; Tait D. Shanafelt, MD; Michelle van Ryn, PhD

Associated with a highest career choice regret during the 2<sup>nd</sup> year of residency:

Pathology	33%
Anesthesiology	21%

Dyrbye LN, Burke SE, Hardeman RR, Herrin J, Wittlin NM, Yeazel M, Dovidio JF, Cunningham B, White RO, Phelan SM, Satele DV, Shanafelt TD, van Ryn M. Association of Clinical Specialty With Symptoms of Burnout and Career Choice Regret Among US Resident Physicians. *JAMA*. 2018 Sep 18;320(11):1114-1130.

## Pathology Pipeline Development Council

By Karen Kaul, MD, PhD and Wesley Naritoku, MD, PhD – PDC Co-Chairs

According to figures from ERAS, the number of US medical graduate (USMG) applicants to the 2019 Match (349) is down from the previous year (376), but it was not as low as in 2017 (334). Looking over the past 10 years, there has been a downward trend (498 in 2010) with the largest decline in 2016 to 2017 (414 to 334). The **Pipeline Development Council (PDC) is working on solutions to reverse this trend by attracting the best and the brightest of USMG's.** Under the leadership of Karen Kaul, MD, PhD (NorthShore University HealthSystem) and Wesley Naritoku, MD, PhD (University of Southern California), the PDC has had additional meetings of the three curation groups:

The **Medical Education Working Group** includes Jennifer Baccon, MD, PhD

The **Published Literature Working Group** includes Kim Collins, MD (Medical University of South Carolina), Donald Karcher, MD (George Washington University), Daniel Remick, MD (Boston University), and Nadeem Zafar, MD (University of Washington). This group has compiled a resource of publicly available information about careers in pathology. Some examples of items that are available on the internet are career opportunities in pathology, precollege targets and models, job boards, and workforce trends. The group is systematically cataloging, tagging, and mapping the literature and to identify what, if any, gaps may exist.

The **Financial and Peer Support Working Group** includes Michael Cohen, MD (Wake Forest University); Asma Nusrat, MD (University of Michigan). Vera Tesic, MD

ACLPS, ADASP, AMP, APC/ Society of '67, API, ASCP, CAP, ICPI, ASIP, and others.

The **Communication Group** is the fourth group and includes David Gross, PhD (College of American Pathologists), Jeff Jacobs (American Society for Clinical Pathology), Priscilla Markwood (APC), and the following trainee representatives: Adam Booth, MD (University of Texas Medical Branch, Galveston), Sharon Song, MD (University of Pennsylvania), Katherine Scribner, DO (University of Southern California), and Rebecca Obeng, MD (Emory University). This group will be exploring ways that the information and resources from the other curation groups may be made publicly available to their target audience.

Each of the groups have held their second conference call,

# Background

- It has been suggested that decreased dedicated pathology courses in the 1<sup>st</sup> and 2<sup>nd</sup> years of medical school is a contributor to decreased recruitment
  - No correlation between pathology coursework time and choice of pathology
  - Fields with no dedicated courses such as Physical Medicine and Rehabilitation are increasing competitiveness and fields such as Dermatology, Radiation Oncology, Plastic Surgery, Urology and ENT remain competitive

# Background

- The United States pathology job market has been a source of concern, controversy and confusion which may be impacting recruitment into the field



# Supply/Demand in Radiology: A Historical Perspective and Comparison to other Labor Markets

Mark E. Sharafinski Jr, MD, David Nussbaum, MD, Saurabh Jha, MBBS, MRCS, MS

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Results: Radiology residency positions have increased since 1998 despite a downturn in the job market. This expansion coincides with a decreasing percentage of positions filled by domestic graduates. A similar trend has been seen in **pathology, a notoriously over-supplied specialty**. Conversely, other specialties have maintained their proportion of domestic graduates by way of limited supply or implicit demand.







## Oversupply of Pathologists

The saturation of labor in pathology has been chronicled since the 1990s. The NRMP trend in pathology resembles radiology. Post Graduate Year 1 (PGY-1) pathology positions increased by 17 per year between 2001 (363) and 2015 (605). USMGs matching in pathology remained below 65% during the same time period. Many trainees in pathology undertake two or more fellowships. The American Society for Clinical Pathology 2014 Fellowship Job Market Survey reported that fellowship was sought by 96% of residents, with 40% of residents and 45% of fellows planning multiple fellowships.



# Helping Students Become Doctors

Student Doctor Network is helping build a diverse doctor workforce by providing a wide range of free resources to help students in their educational journey.

	<p>Is pathology at an all time low?                  pathstudent · Mar 18, 2019 <a href="#">2</a> <a href="#">3</a></p>	<p>Replies: 113                  Views: 10K</p>	<p>May 6, 2019                  Schiff </p>
	<p>WOW NO JOBS IN PATHOLOGY                  pablo1992 · Jul 24, 2018 <a href="#">2</a> <a href="#">3</a></p>	<p>Replies: 134                  Views: 14K</p>	<p>Mar 26, 2019                  gbwillner </p>
	<p>Bad job market                  raider · Dec 7, 2009 <a href="#">2</a> <a href="#">3</a> <a href="#">4</a></p>	<p>Replies: 160                  Views: 25K</p>	<p>Jan 30, 2019                  y2k_free_radical </p>

# Background

- There is a paucity of data on the job market with information predominately from graduating trainee surveys

# Aim

- Investigate the pathology job market utilizing a large repository of pathology job advertisements

# Methods

- Job advertisements for pathologists posted at [www.PathologyOutlines.com](http://www.PathologyOutlines.com) from 2013 to 2017 were reviewed
- Locum tenens, residency, fellowship and non-pathologist positions were excluded

# Results

- 2013 to 2017:  
2330 job advertisements posted
- 92% within the United States
- 7% within Canada

# Results

- Job ads were posted throughout the year but most frequently in 4<sup>th</sup> quarter of the calendar year (October-December):  
Q4 (30%) > Q3 > Q2 > Q1 (22%)

# Results

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2013-2017

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Academic **53%** (1229/2330)

Private 47% (1101/2330)

- Gratzinger et al: **38%** of survey respondents accepted an academic position
- ASCP Survey: **40%** PGY4 plan on academia

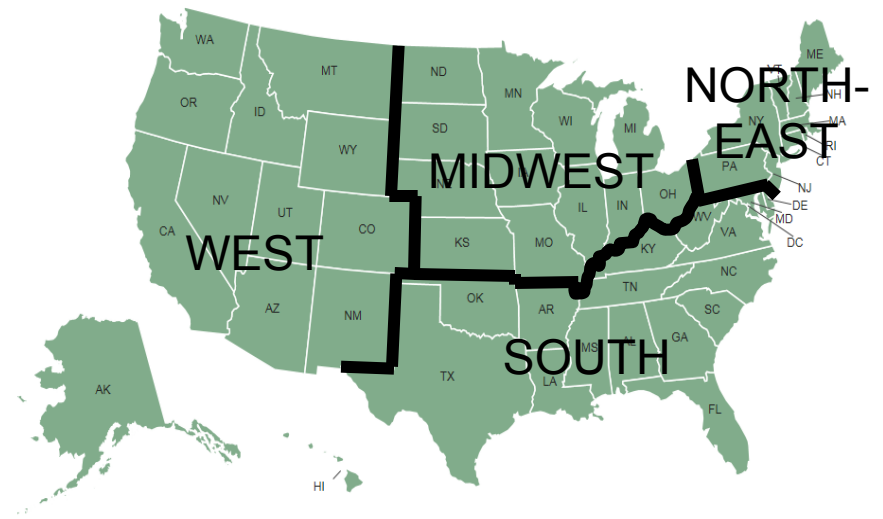
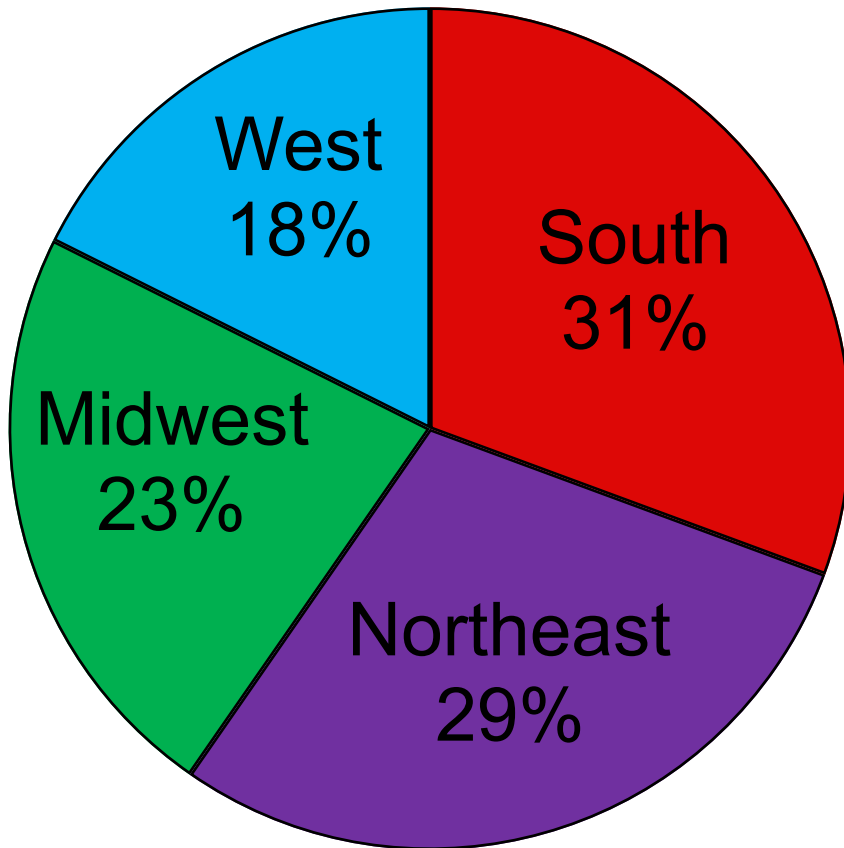
Zynger DL, Pernick N. Understanding the Pathology Job Market: An Analysis of 2330 Pathology Job Advertisements From 2013 Through 2017. Arch Pathol Lab Med. 2019 Jan;143(1):9-10.

Gratzinger D, Johnson KA, Brissette MD, et al. The Recent Pathology Residency Graduate Job Search Experience: A Synthesis of 5 Years of College of American Pathologists Job Market Surveys. Arch Pathol Lab Med. 2018 Apr;142(4):490-495.

ASCP 2018 Fellowship & Job Market Survey.



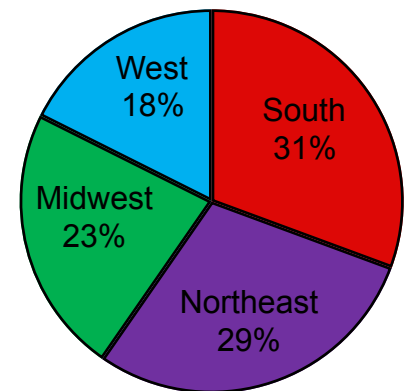
# Results



# Results

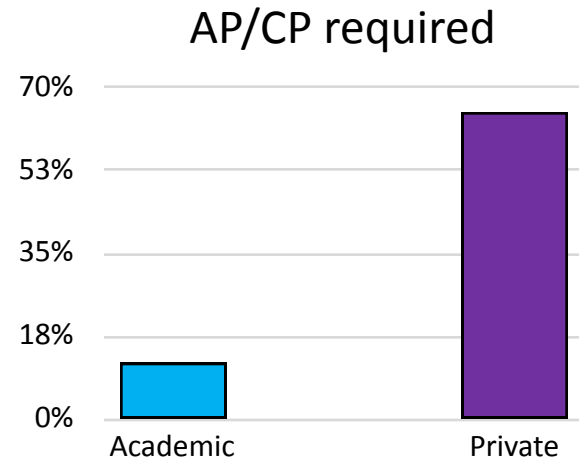
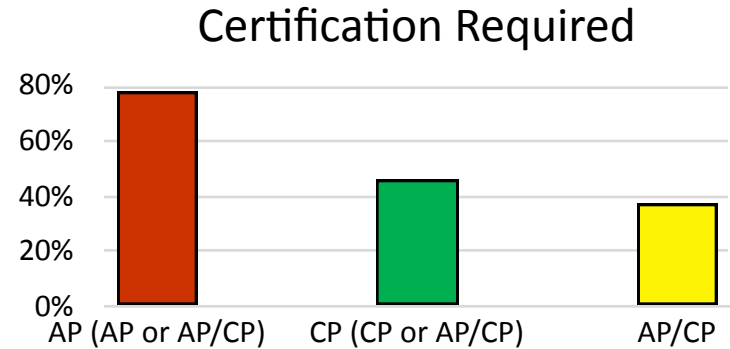
- Academic job ads were more common than private ads in Midwest and Northeast:

	academic	private
Midwest	26%	19%
Northeast	33%	24%
West	13%	23%
South	28%	33%



# Results

- 78% required AP
  - 46% required CP
  - 37% required AP/CP
- 
- Combined AP/CP required in 12% academic vs 65% private



AP=anatomic pathology certification, CP=clinical pathology certification

# Results

- 82% job ads required a subspecialty

## Principal Reason for Pursuing a Fellowship (All residents)

1 = Not applicable/not a consideration  
2 = Not very important  
3 = Minor importance

4 = Somewhat important  
5 = Extremely important

Employers expect fellowship training and are not likely to hire candidates without it.

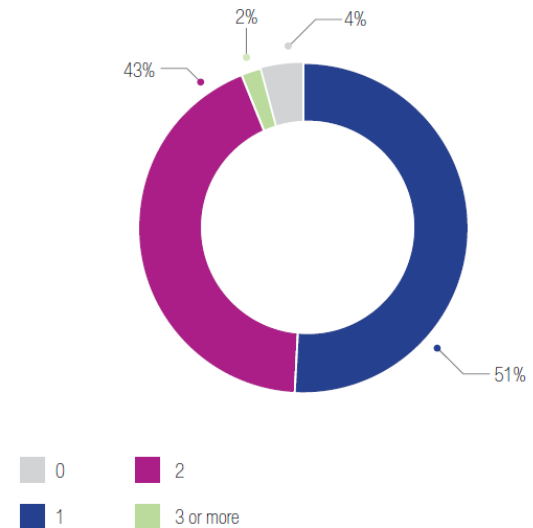
4.2

Specific subspecialty training (and ABP subspecialty certification) is required for my desired job

4.0

## Number of Fellowships Intended to Complete (All residents)

About half of the residents plan to complete one fellowship, and 43% report interest in training in two fellowships. A small minority do not plan to do a fellowship or plan to complete more than two fellowships.



# Results

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2013-2017

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## Required subspecialties

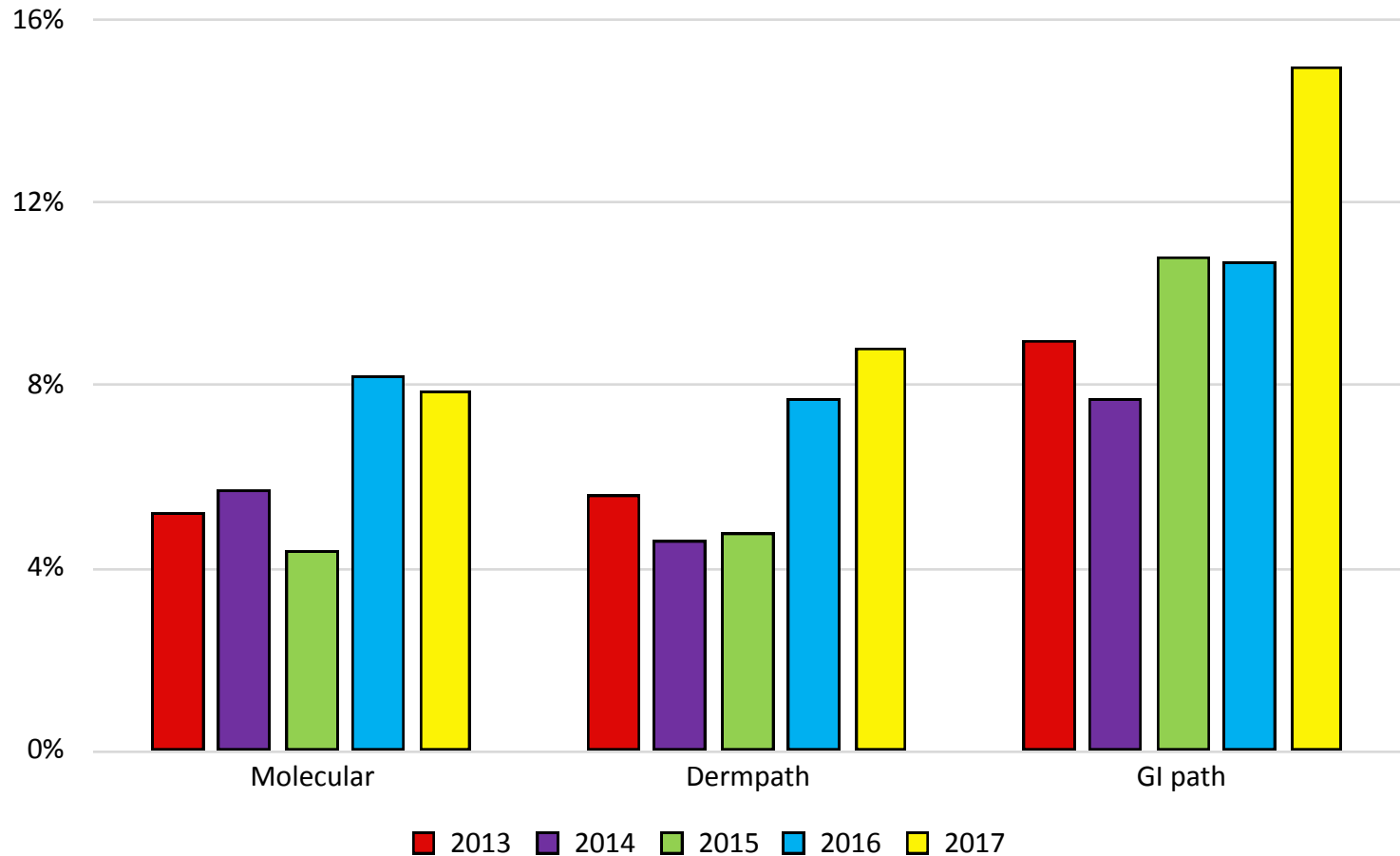
Cytopathology*	15%
Hematopathology*	14%
Gastrointestinal pathology*	11%
Dermatopathology	7%
Molecular pathology	7%
Breast pathology	6%
Gynecologic pathology	5%

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\*3 most common non-surgical pathology fellowships completed by trainees. (Gratzinger et al. Arch Pathol Lab Med. 2018 Apr;142(4):490-495.)

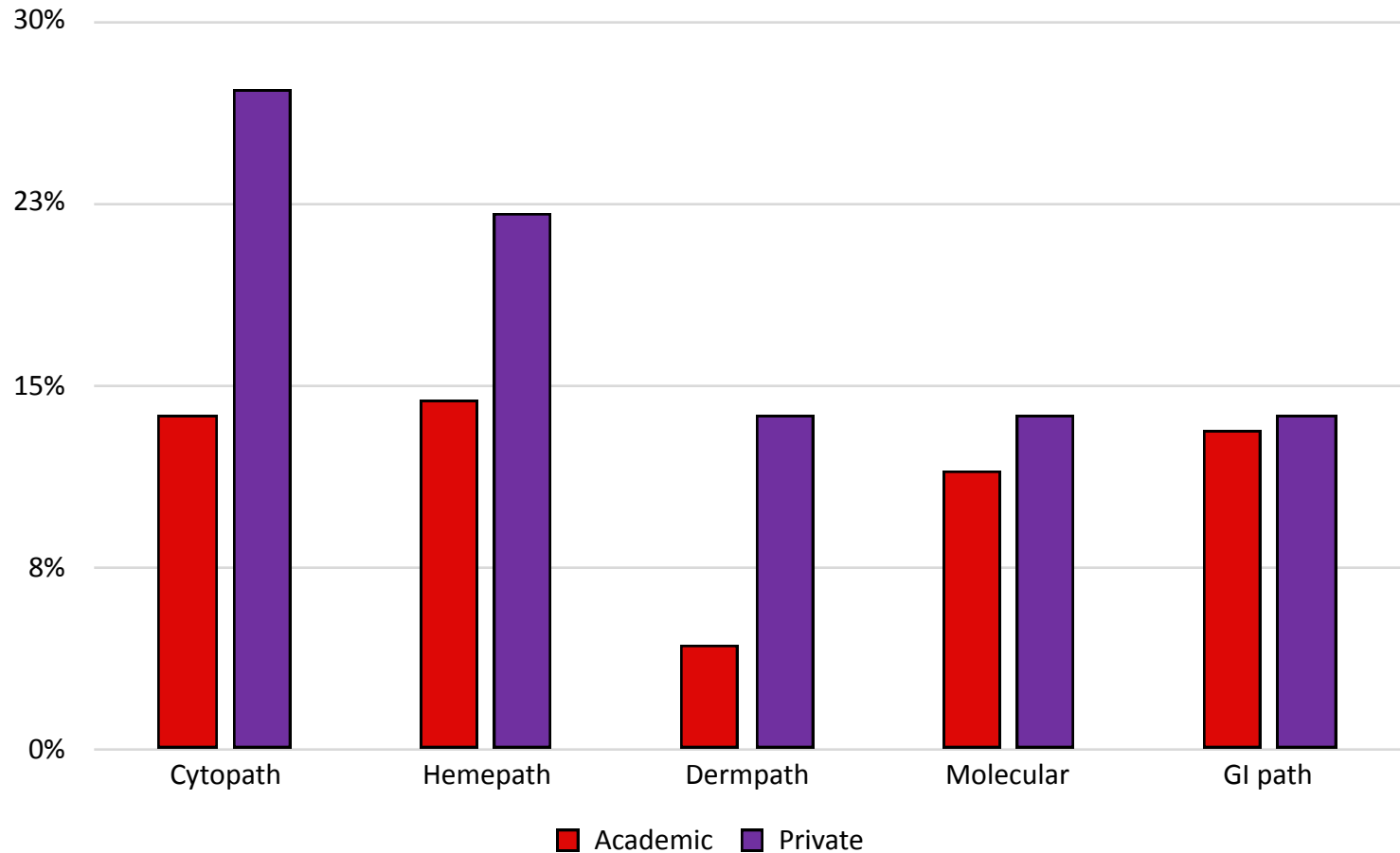
# Results

## Change in Subspecialty Requirements



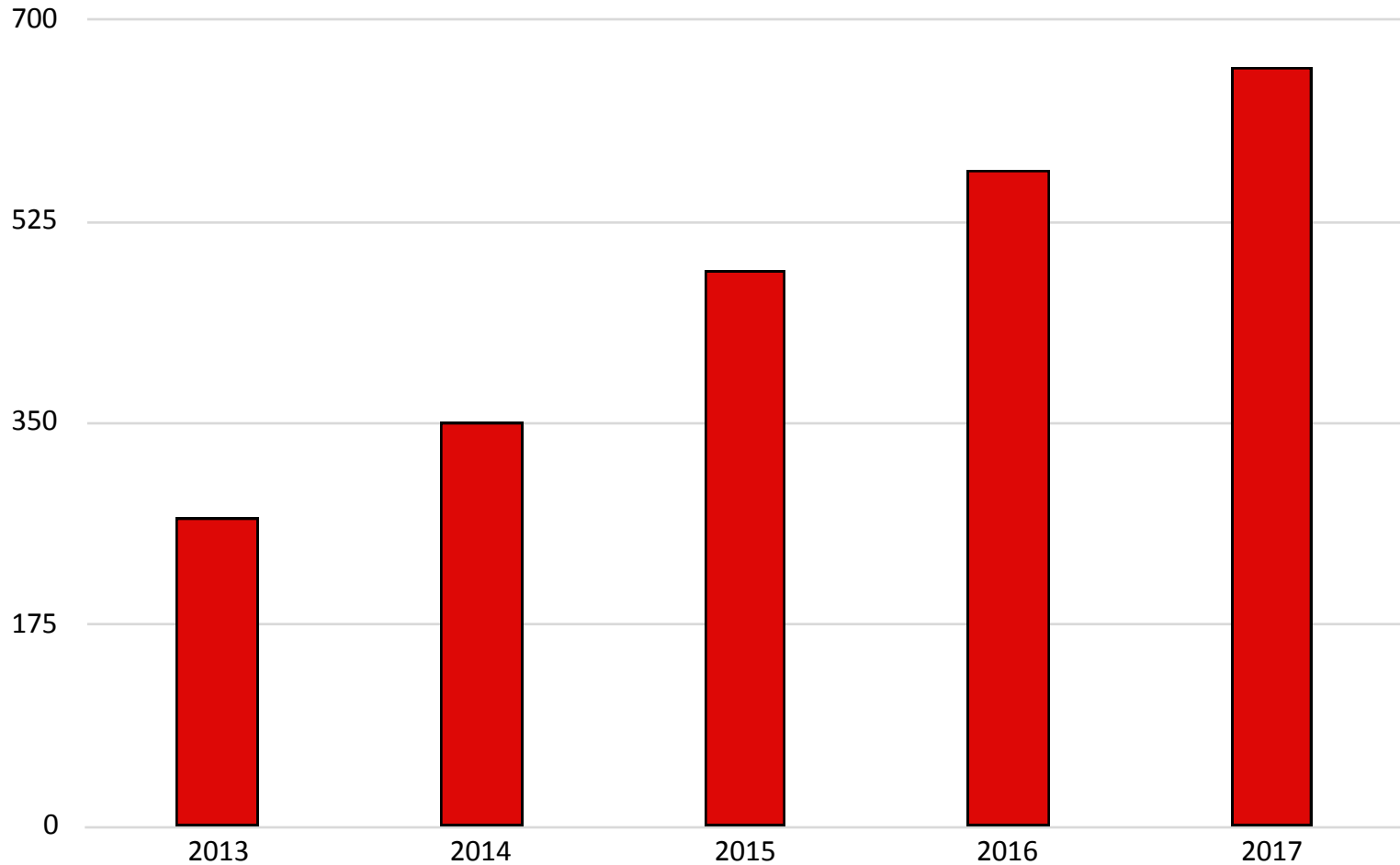
# Results

## Academic vs Private Requirements



# Results

Jobs Posted Per Year



Zynger DL, Pernick N. Understanding the Pathology Job Market: An Analysis of 2330 Pathology Job Advertisements From 2013 Through 2017. Arch Pathol Lab Med. 2019 Jan;143(1):9-10.



# Conclusion

- Our analysis supports a stable pathology job market during the past 5 year period within the United States
- There was no evidence of increasing “word-of-mouth” offerings that were not posted or of a shrinking job market
- There may be an imbalance between number of positions open in academia and number of candidates seeking academic positions
- Most jobs require subspecialty expertise
- There are notable differences in desired subspecialties between academia and private practice

*Thank you*



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