ASCP Fellowship
& Job Market Surveys

A REPORT ON THE 2018 RISE, FISE, FISHE, NPISE, PISE and TMISE Surveys

www.ascp.org/residents
ASCP responds to the interests and needs of residents, fellows, and program directors by directing an annual survey on residency and fellowships and the job market for pathologists in training.

The surveys are conducted as part of the Resident In-Service Examination (RISE), and the Fellow Forensic In-Service Examination (FISE), Fellow In-Service Hematopathology Examination (FISHE), Fellow Neuropathology In-Service Examination (NPISE), Fellow Pediatric Pathology In-Service Examination (PISE), and the Fellow Transfusion Medicine In-Service Examination (TMISE). These data are compiled by ASCP to provide information useful to all pathology trainees, residency and fellowship program directors, and prospective employers.

A total of 2519 residents participated in the Spring 2018 RISE and survey in the following training levels: 684 PGY-1, 642 PGY-2, 652 PGY-3, and 541 PGY-4.

Of these residents, 84 percent are in AP/CP training, while 11 percent and 3 percent are in AP only and CP only tracks respectively. 1.5% and 0.5% indicated that they were AP/NP and Other respectively. For PGY 1-4 trainees, 55 percent have Medical Degrees from North America.

A total of 294 fellows participated in the five Spring 2018 Fellowship In-Service Examinations and surveys.
Indicate your residency training track *(All residents)*

- **AP/CP**
- **AP/NP**
- **CP Only**
- **AP Only**
- **Other**

I am a graduate of a US or Canadian allopathic (MD) medical school.
*(All residents)*

- **48% Yes**
- **52% No**

I am a graduate of a medical school from the following region
*(All residents)*

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>84%</td>
</tr>
<tr>
<td>Middle East</td>
<td>11%</td>
</tr>
<tr>
<td>Caribbean</td>
<td>1.5%</td>
</tr>
<tr>
<td>China</td>
<td>0.5%</td>
</tr>
<tr>
<td>India</td>
<td>3%</td>
</tr>
<tr>
<td>Other Asia</td>
<td>84%</td>
</tr>
<tr>
<td>European Union</td>
<td>5%</td>
</tr>
<tr>
<td>Latin/South America</td>
<td>5%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>9%</td>
</tr>
<tr>
<td>Africa</td>
<td>9%</td>
</tr>
<tr>
<td>Australia, NZ, Oceania</td>
<td>5%</td>
</tr>
<tr>
<td>United Kingdom/Ireland</td>
<td>5%</td>
</tr>
</tbody>
</table>

I am a graduate of a US or Canadian osteopathic (DO) medical school.
*(All residents)*

- **9% Yes**
- **91% No**
What other advanced degree, in addition to MD/DO, or MBBS do you hold? (All residents)

Have you previously completed a pathology residency training program outside the United States or Canada? (All residents)

Have you had formal postgraduate medical experience in an area other than pathology? If yes, please pick highest level achieved. (All residents)

Are you currently in or planning to be in a physician-scientist track as part of your training program? (All residents)

Conclusions

The vast majority of pathology residents are in AP/CP training programs. The majority of pathology residents attended either an allopathic (MD) or osteopathic (DO) medical school in the United States or Canada. A quarter of pathology residents hold on additional advanced degree.
Preparation For Residency

The ASCP Resident Council responded to requests from residents interested in learning about national trends regarding medical education prior to residency.

**How well did your medical school training prepare you for your pathology residency? (PGY-1 residents only)**

- **Poorly:** 6%
- **Moderately well:** 26%
- **Somewhat well:** 44%
- **Very well:** 24%

**How much training or exposure to pathology did your medical school provide? (PGY-1 residents only)**

- **Minimal exposure to pathology:** 33%
- **Exposure to pathology through labs or lecturers but no first-hand experience:** 35%
- **First-hand experience in pathology (e.g. clinical rotations):** 32%

Medical school preparation for pathology residency training is problematic with 67 percent of residents citing minimal exposure to pathology and/or no first-hand pathology experience during medical school.

**Please select the option which best describes pathology rotation availability at your medical school. (PGY-1 residents only)**

- **My medical school did not offer a pathology rotation; I arranged a clerkship with another institution/hospital:** 20%
- **My medical school did not offer a pathology rotation; I was not able to arrange a clerkship:** 14%
- **My medical school had a pathology department with an in-house clerkship:** 66%
What was/is your general range of student loans when you exited medical school?

(All residents)

- 45% No student loans
- 17% Less than $99,999
- 13% $100,000 - $149,999
- 10% $150,000 - $199,999
- 8% $200,000 - $300,000
- 7% Greater than $300,000

Has or will your amount of student debt influence your job choice?

(All residents)

- 47% No influence
- 27% Influence on the type of practice setting I prefer
- 22% Influence on the subspecialty area I choose
- 4% Influence on both the type of practice setting and specialty area

Summary

A quarter of first year residents noted that medical school did not adequately train them for pathology residency. Only a third of residents stated that their medical school included first-hand experience in pathology.

45 percent of pathology residents have no student loans at the time of medical school graduation. About 40 percent have more than $150,000 in debt, and about 30% of all residents have $200,000 or more in debt. For residents who had student loans, about half felt that debt would affect their choice of practice setting and/or subspecialty.

Medical school debt is significant for many residents and it appears to play a role in their choice of practice and their subspecialty of pathology practice.
Residents’ Perceptions On Training And Health Care

Which of the following best describes the primary location of your residency training program? (PGY-3/4 residents only)

- University hospital system (with an affiliated medical school) - 86%
- Hospital system (without an affiliated medical school) - 3%
- Local/community hospital - 4%
- Military or government hospital (e.g. the NIH) - 1%
- Other - 6%

Overall how satisfied are you with your current residency training program? (All residents)

- Very satisfied - 58%
- Satisfied - 28%
- Dissatisfied - 4%
- Very dissatisfied - 3%
Rate the quality of your pathology education program.

*(All residents)*

<table>
<thead>
<tr>
<th>Quality</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>10%</td>
</tr>
<tr>
<td>Fair</td>
<td>20%</td>
</tr>
<tr>
<td>Good</td>
<td>40%</td>
</tr>
<tr>
<td>Excellent</td>
<td>50%</td>
</tr>
</tbody>
</table>

Was there a large discrepancy between AP and CP educational experiences? *(PGY-3/4 residents)*

**Quality**
- The quality of the AP curriculum is better than the quality of the CP curriculum: 52%
- The quality of the CP curriculum is better than the quality of the AP curriculum: 35%
- The quality of the AP curriculum is the same as the quality of the CP curriculum: 13%

**Time**
- Residents spend more time rotating on AP than on CP: 59%
- Residents spend more time rotating on CP than on AP: 39%
- Residents spend the same amount of time rotating on AP as they do on CP: 2%

**Emphasis**
- More emphasis is placed on the AP curriculum than on the CP curriculum: 62%
- More emphasis is placed on the CP curriculum than on the AP curriculum: 6%
- The same amount of emphasis is placed on the AP curriculum as on the CP curriculum: 32%

**Studying**
- Residents spend more time reading/studying on AP than on CP rotations: 47%
- Residents spend more time reading/studying on CP than on AP rotations: 33%
- Residents spend the same amount of time reading/studying on AP as they do on CP rotations: 20%
How often are you pulled from CP rotation to cover AP service?
*(All residents)*

- **Sometimes**: 14%
- **Frequently**: 7%
- **Rarely**: 19%
- **Never**: 33%
- **Not applicable (I am an AP-only or CP-only trainee)**: 27%

How often are you pulled from AP rotation to cover CP service?
*(All residents)*

- **Sometimes**: 14%
- **Frequently**: 4%
- **Rarely**: 1%
- **Never**: 61%
- **Very frequently**: 1%
- **Not applicable (I am an AP-only or CP-only trainee)**: 2%

Do your CP rotations incorporate graduated responsibilities?

- Score: 2.6

Do your AP rotations incorporate graduated responsibilities?

- Score: 2.7
How prepared do you feel for the following business aspects of pathology practice? (PGY-4 residents only)

<table>
<thead>
<tr>
<th>Business Aspect</th>
<th>Not at all</th>
<th>Minimal</th>
<th>Moderately</th>
<th>Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPT Coding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Billing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract Negotiations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel Issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspections and Accreditation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician Quality Reporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you attend management meetings with laboratory personnel?

- PGY-4 Residents: 2.3

Have you had experience during training with budgets or finance?

- PGY-4 Residents: 1.8

Management, Meetings, and Budgets
What type of practice environment do you plan to seek or are currently seeking? (PGY 1-3 vs. PGY-4)

How confident are you about finding the pathology job you desire? (All residents)

83% of trainees at all levels are somewhat to very confident that they can find their desired pathology job position.
PGY-1 residents had a more favorable impression of the utility of Pathology Milestones in preparation for pathology practice. This may reflect the more recent incorporation of Pathology Milestones into the ACGME Next Accreditation System, versus more senior residents who began training prior to their implementation in pathology training programs.

Conclusions

- The vast majority of pathology residents are satisfied with their residency training program and view the quality of their program favorably.
- Residents responded that in general, AP training receives more focus than CP training as noted by questions regarding quality, time, and emphasis in these disciplines.
- Programs are incorporating graduated responsibilities in both AP and CP rotations.
- Residency training in the business and management aspects of practice remains an area where improvement is needed.
- About a third of residents are clearly interested in community practice, and most residents are confident that they can find their desired pathology position.
- The Pathology Milestones are viewed to be useful by most residents.
Applying For Pathology Jobs Immediately After Residency

Although a minority of pathology residents choose to go directly from training into the job market, both the ASCP Resident Council and the RiSE Committee thought it would be useful to report relevant information for future trainees.

How many jobs have you applied for this year (i.e. have submitted or sent your CV/resume)? (PGY-3/4 residents only)

In 2018, 90 PGY-3/4 residents applied for jobs. This is similar to the number observed in 2017 (n=99).

How many formal job interviews have you had this year (including in-person, by telephone, Skype, etc.)? (PGY-3/4 residents only)

How many job offers have you received this year? (PGY-3/4 residents only)
On average, what was the starting salary offered (excluding benefits)? (PGY-3/4 residents only)

<table>
<thead>
<tr>
<th>Salary Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$100,000/year</td>
<td>17%</td>
</tr>
<tr>
<td>$100,000/year - &lt;$150,000/year</td>
<td>30%</td>
</tr>
<tr>
<td>$150,000/year - &lt;$200,000/year</td>
<td>13%</td>
</tr>
<tr>
<td>$200,000/year - &lt;$250,000/year</td>
<td>7%</td>
</tr>
<tr>
<td>&gt;$250,000/year</td>
<td>2%</td>
</tr>
<tr>
<td>A starting salary was not discussed</td>
<td>31%</td>
</tr>
</tbody>
</table>

Did you receive a signing bonus/moving allowance? (PGY-3/4 residents only)

- Yes: 62%
- No: 38%

How satisfied are you with the help/support that your department has provided to help you obtain a job? (PGY-3/4 residents only)

<table>
<thead>
<tr>
<th>Satisfaction Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very satisfied</td>
<td>17%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>28%</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>35%</td>
</tr>
<tr>
<td>Very satisfied</td>
<td>7%</td>
</tr>
<tr>
<td>Not applicable</td>
<td>13%</td>
</tr>
</tbody>
</table>

Conclusions

90 PGY-3/4 residents formally applied for a job starting immediately after residency. In 2018, 60 of these residents seeking an immediate job received a job offer (42 PGY-4s and 18 PGY-3s). The majority of residents were satisfied with the help/support that departments provided in their job search.
As part of the 2018 RISE, 1193 PGY-3/4 residents were surveyed about their experience in the fellowship process and residents’ attitudes toward fellowship training.

From the 2018 survey, the fellowships that PGY-3/4 residents have already applied for or intend to apply for are listed in order of preference:
Level of Interest in Applying for a Fellowship (PGY-3/4 residents only)

- I have already accepted a fellowship: 5%
- I have applied for a fellowship this year: 3%
- I intend to apply for a fellowship this year: 5%
- I intend to apply for a fellowship in the future: 43%
- I do not intend to apply for a fellowship: 83%

Principal Reason for Pursuing a Fellowship (All residents)

1. Employers expect fellowship training and are not likely to hire candidates without it.
   - 4.2

2. Specific subspecialty training (and ABP subspecialty certification) is required for my desired job.
   - 4.0

3. Enhance pathology skills that were not taught during residency.
   - 3.8

4. To obtain additional sign-out experience prior to employment.
   - 3.8

5. Desired job not immediately available after residency.
   - 2.9

6. I have not identified an employer who will sponsor my visa.
   - 1.6

Number of Fellowships Intended to Complete (All residents)

- 0: 7%
- 1: 43%
- 2: 17%
- 3 or more: 14%
- 4 or more: 20%
- More than 10: 42%

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.

To how many fellowship programs did you formally apply? (PGY-3/4 residents only)

- 0: 7%
- 1-3: 17%
- 4-6: 42%
- 7-10: 20%
- More than 10: 14%

42% of the residents applied to 1-3 fellowship programs, 20% applied to 4-6 fellowships, and 31% applied for 7 or more fellowships.
How many fellowship interviews have you had (including in-person, by telephone, Skype, etc.)? (PGY-3/4 residents only)

About 70% have 3 or fewer interviews for fellowships. Only a small number of residents interview for seven or more fellowship positions.

Number of Fellowship Offers Received (PGY-3/4 residents only)

About a half of residents received a single fellowship offer; only 3 percent of PGY3/4 had not received any offers at time of survey. 47 percent of residents had positive responses from two or more fellowship programs, suggesting that there is competition among fellowship programs for strong applicants.

Conclusions

Fellowship training in pathology is planned by 96 percent of residents. 45 percent choose to pursue two or more fellowships.

- 49 percent of PGY-3/4 residents received only a single fellowship offer; 47 percent received multiple offers. Only 2 percent of PGY-4 residents had not yet received a fellowship offer, suggesting that only a small number of residents are not finding immediate fellowship opportunities. A PGY-3 resident would still have another year to find a position.

- Surgical Pathology is the top fellowship of choice; Hematopathology, Cytopathology, GI/Hepatic Pathology and Forensic Pathology round out the top five fellowship specialties.
ASCP offered five fellowship in-service examinations for the Spring of 2018: the Fellow Forensic In-Service Examination (FISE), the Fellow In-Service Hematopathology Examination (FISHE), the Fellow Neuropathology In-Service Examination (NPSE), the Fellow Pediatric Pathology In-Service Examination (PISE), and the Fellow Transfusion Medicine In-Service Examination (TMISE).

Fellow in-service examinations were taken by 294 individuals: post-exam surveys offered the chance to query fellows in Forensics (n=44), Hematopathology (n=138), Neuropathology (n=40), Pediatric Pathology (n=20), and Transfusion Medicine (n=52) about their experience entering the job market and any plans for additional specialty training. Nearly all fellows responded that they were in a fellowship directly related to their respective fellow in-service examination.

Are you a diplomate of the American Board of Pathology (ABP)?

76% of surveyed fellows are already diplomates of the American Board of Pathology.
In which areas are you a diplomate of the ABP?

![Bar chart showing diplomate areas]

How long is your current fellowship program?

![Bar chart showing fellowship lengths]
Which year of your current fellowship program are you in?

- FP: Third year
- HP: Second year
- NP: First year
- PP: Other
- TM: Other
For your current fellowship area, how many fellowship programs did you formally apply to (i.e., have submitted or sent your CV/resume), including your current program?

- 0: 34%
- 1: 9%
- 2: 11%
- 3: 16%
- 4: 11%
- >5: 19%

**Forensic Pathology**

- 0: 19%
- 1: 9%
- 2: 11%
- 3: 16%
- 4: 11%
- >5: 19%

**Hematopathology**

- 0: 31%
- 1: 6%
- 2: 14%
- 3: 14%
- 4: 21%
- >5: 10%

**Neuropathology**

- 0: 40%
- 1: 3%
- 2: 17%
- 3: 3%
- 4: 17%
- >5: 10%

**Pediatric Pathology**

- 0: 25%
- 1: 15%
- 2: 35%
- 3: 20%
- 4: 5%
- >5: 10%

**Transfusion Medicine**

- 0: 48%
- 1: 4%
- 2: 6%
- 3: 4%
- 4: 4%
- >5: 17%
How many fellowship program interviews have you had, including interviews for your current program?

For your current fellowship area, how many total fellowship offers did you receive?
To what extent has each of the following factors influenced your decision to pursue fellowship training?

Fellows from all five subspecialties indicated that the top three factors that influenced their decision to pursue fellowship training were that 1) employers expect fellowship training and are not likely to hire candidates without it, 2) specific subspecialty training (and ABP subspecialty certification) is required for desired job, and 3) to enhance pathology skills that were not taught during residency. Obtaining additional sign-out experience prior to employment was another important motivator.
Additional Subspecialty Fellowships

How many fellowships do you intend to complete?

- FP
- HP
- NP
- PP
- TM

How much has each of the following factors influenced your decision to pursue multiple fellowships?

1. Career goals include advanced specialization in more than one field
2. Desire to strengthen specific areas of my training
3. Desire to be more competitive in the job market
4. Desired job not available after the completion of first fellowship
5. Family priorities

[Graph showing distribution of responses]
Have you already completed a fellowship in a different subspecialty other than current fellowship?

- FP: 0% Yes, 100% No
- HP: 20% Yes, 80% No
- NP: 0% Yes, 100% No
- PP: 40% Yes, 60% No
- TM: 20% Yes, 80% No

Are you going to do an additional fellowship after your current fellowship training?

- FP: 0% Yes, 100% No
- HP: 20% Yes, 80% No
- NP: 20% Yes, 80% No
- PP: 40% Yes, 60% No
- TM: 0% Yes, 100% No
Conclusion

73% of forensic pathology fellows will only complete one fellowship. Between 38-55% of fellows in other subspecialties are planning to complete a second fellowship. Very few are planning more than two fellowships.

49% of fellows have indicated that they are considering completing more than 1 fellowship with Surgical Pathology, Cytopathology and Molecular Genetic Pathology topping the list.
Please select which description most accurately describes your plan for fellowships and/or jobs:

- I plan to apply for a job position (no more fellowships) or have already accepted a job
- I plan to apply for additional fellowships (not applying for jobs yet)
- I am applying for both jobs and fellowships?

[Bar chart with percentage distribution for FP, HP, NP, PP, and TM categories]
How many jobs have you applied for this year (i.e., have submitted or sent your CV/resume)?

The number of job applications varies widely by specialty. 79% of Forensic Pathology (33 of 42) fellows applied for 1 to 3 jobs. In contrast, 28% of the Hematopathology (35 of 123) and Pediatric Pathology (5 of 18) fellows applied for 7 or more jobs.

How many formal job interviews have you had this year (including in-person, by telephone, Skype, etc.)?

The number of job applications varies widely by specialty. 79% of Forensic Pathology (33 of 42) fellows applied for 1 to 3 jobs. In contrast, 28% of the Hematopathology (35 of 123) and Pediatric Pathology (5 of 18) fellows applied for 7 or more jobs.
How many job offers have you received this year?

In 2018, at the time of the survey (April 16 – 27, 2018) of residents who had submitted resumes and had a formal interview, 2 of 41 forensic pathology, 3 of 18 neuropathology, 1 of 14 pediatric pathology and 6 of 37 transfusion medicine fellows had not yet received job offers. In contrast 17 of 74 or 23% of hematopathology fellows had not yet received an offer.

Has it taken longer than you expected to find a job?

Summary

A significant number of fellows had not yet received job offers at the time of the survey. Fellows across subspecialty programs report differences in their experiences in applying for and ultimately receiving job offers.
Have you applied for a job at the institution where you completed either your residency or fellowship programs?

Have you received a job offer at your own residency or fellowship training program?

Have you already accepted (or plan to accept) a job offer?
What type of setting best describes the setting of the job offer?

![Bar chart showing the number of fellows in different settings.]

- **Academic institution**: 15 fellows
- **Community group practice**: 30 fellows
- **Reference Laboratory**: 5 fellows
- **Corporate**: 0 fellows
- **Government/Military**: 0 fellows
- **Other**: 0 fellows

What is your expected employment status?

![Bar chart showing the number of fellows in different employment statuses.]

- **FP**: 30 fellows
- **HP**: 25 fellows
- **NP**: 15 fellows
- **PP**: 10 fellows
- **TM**: 5 fellows

Legend:
- FP: Partner/Partner Track
- HP: Salaried Employee
- NP: Hourly Employee
- PP: Locum Tenens

A REPORT ON THE 2018 RISE, FISE, FISHE, NPISE, PISE and TMISE Surveys

www.ascp.org/residents | 30
Starting annual salaries ranged widely among fellowship groups. The range of $150,001 - $200,000 was the most frequent in forensic pathology with $200,001 - $250,000 the most frequent in hematopathology. There was a fairly even split between $150,001 - $200,000 and $200,001 - $250,000 in neuropathology, pediatric pathology and transfusion medicine.

If you received a job offer, on average, what was the starting salary offered (excluding benefits)?

The majority of fellows received no signing or moving bonus or just a moving bonus. Very few receive a signing bonus.
From the time you started applying for jobs, how long have you been looking for a job?

The majority of fellows who did find jobs received a job offer within 6 months of formal applications.
Did you restrict or plan to restrict your job search to a specific geographic region?

How much has each of the following factors influenced restricting the search?
58% of the fellows restricted their job search to a specific geographic region. Family, personal connection and lifestyle (weather, activities, etc.) were all cited as important factors. About 12% of fellows restrict their job search based on their visa status.
Based on your experience, indicate the availability of positions in the following categories related to your fellowship area.

How important are the following issues to you in searching for a job?
2017-18 ASCP Resident Council

Jennifer Kasten, MD, MSc (Oxon), MSc (London)  Chair
Alexander Feldman, MD  Chair-Elect
Sounak Gupta, MBBS, PhD  AMA-RFS Delegate
Kendall Brewer, MD
Anne Chen, MD
Yekaterina “Kate” Eichel, MD
Jeffrey Mohlman, MD, MPH
Kelly Mooney, MD
Rugvedita Parakh, MBBS, MD
Stephanie Skala, MD
Melissa Straub, MD
Jennifer Woo, MD
ACKNOWLEDGMENTS

The ASCP RISE Committee wishes to thank the members of the ASCP Resident Council for their dedicated input into these surveys. Moreover, this survey would not be possible without the cooperation of all pathology residency program directors and the participation of all residents and fellows who take these in-service exams and the associated surveys. We are very grateful for their assistance. Please address comments or questions about this survey to Jay Wagner at Jay.Wagner@ascp.org.

COVER IMAGERY:

Stephanie Skala, MD
Jeffrey Mohlman, MD, MPH
Jennifer Woo, MD