ASCP FELLOWSHIP
& JOB MARKET SURVEYS
A REPORT ON THE 2022 RISE, FISE, FISHE, NPISE, PISE and TMISE Surveys

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INTRODUCTION

ASCP responds to the interests and needs of residents, fellows, and program directors by conducting an annual survey on residency, 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), the 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 2545 residents participated in the Spring 2022 RISE and survey in the following training levels: 674 PGY-1, 652 PGY-2, 665 PGY-3, and 554 PGY-4.

Of residents, 82% are in AP/CP training, while 12% and 5% are in AP only and CP only tracks respectively. 1% and <0.2% indicated that they were AP/NP and Other respectively. For PGY 1-4 trainees, 51% have Medical Degrees from North America.

A total of 304 fellows participated in the five Spring 2022 Fellowship In-Service Examinations and surveys.
Indicate your residency training track. *(All residents)*

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

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

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

North America
Middle East
Caribbean
India
Other Asia
China
Pakistan
Latin/South America
European Union
Africa
United Kingdom/Ireland
Australia, NZ, Oceania

0% 10% 20% 30% 40% 50% 60%
What other advanced degree, in addition to MD, DO, or MBBS do you hold? (All residents)

- None: 15%
- Masters (MS): 66.5%
- Doctoral (PhD): 14%
- Other: 4.5%

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

- Yes: 93%
- No: 7%

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

- Intern: 10%
- Fellow: 6%
- Practice: 80%
- Resident: 1%
- No: 3%
- I don't know: 1%

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

- Yes: 84%
- No: 10%
- I don't know: 6%

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. Over a quarter of pathology residents hold an 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)*

26% of residents felt that their medical school education prepared them moderately to very well for pathology residency training.

[Graph showing the distribution of responses: Poorly 6%, Modestly well 30%, Somewhat well 20%, Very well 44%]

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

Medical school preparation for pathology residency training is problematic with two thirds of residents citing either minimal exposure to pathology and/or no first-hand pathology experience during medical school outside of labs or lectures.

[Graph showing the distribution of responses: Minimal exposure to pathology 30%, Minimal exposure to pathology through labs or lecturers but no first-hand experience 35%, First-hand experience in pathology (e.g. clinical rotations) 35%]

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

26% of residents felt that their medical school education prepared them moderately to very well for pathology residency training.

[Graph showing the distribution of responses: My medical school had a pathology department with an in-house clerkship 25%, My medical school did not offer a pathology rotation; I arranged a clerkship with another institution/hospital 13%, My medical school did not offer a pathology rotation; I was not able to arrange a clerkship 62%]
What was/is your general range of student loans when you exited medical school?
*(All residents)*

![Student Loans Distribution](image)

- 49% No student loans
- 15.5% Less than $99,999
- 14% $100,000 - $149,999
- 4.5% $150,000 - $199,999
- 6% $200,000 - $300,000
- 11% Greater than $300,000

Has or will your amount of student debt influence your job choice?
*(All residents)*

![Job Choice Influence](image)

- 46% No influence
- 27% Influence on the type of practice setting I prefer (e.g. private practice, academic practice, reference laboratory, etc.)
- 4% Influence on both the type of practice setting and specialty area
- 23% Influence on the subspecialty area I choose

Summary

30% of first year residents noted that medical school did not adequately train them for pathology residency. Only about a third of residents stated that their medical school included first-hand experience in pathology.

49% of pathology residents have no student loans at the time of medical school graduation. About 35% have more than $150,000 in debt, and about 29% 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 setting and subspecialty of pathology.
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)
- Hospital system (without an affiliated medical school)
- Local/community hospital
- Military or government hospital (e.g. the NIH)
- Other

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

- Very satisfied
- Satisfied
- Dissatisfied
- Very dissatisfied
Rate the quality of your pathology education program:
(All residents)

<table>
<thead>
<tr>
<th>Quality</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>4</td>
</tr>
<tr>
<td>Fair</td>
<td>20</td>
</tr>
<tr>
<td>Good</td>
<td>47</td>
</tr>
<tr>
<td>Excellent</td>
<td>29</td>
</tr>
</tbody>
</table>

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

For each set of three choices, please select the one that most accurately describes AP and CP educational experiences in your residency program? (PGY-3/4 residents)

**Quality**
- The quality of the AP curriculum is better than the quality of the CP curriculum: 10.5%
- The quality of the CP curriculum is better than the quality of the AP curriculum: 38.5%
- The quality of the AP curriculum is the same as the quality of the CP curriculum: 51%

**Time**
- Residents spend more time rotating on AP than on CP: 40%
- Residents spend more time rotating on CP than on AP: 3%
- Residents spend the same amount of time rotating on AP as they do on CP: 57%

**Emphasis**
- More emphasis is placed on the AP curriculum than on the CP curriculum: 4.5%
- More emphasis is placed on the CP curriculum than on the AP curriculum: 62%
- The same amount of emphasis is placed on the AP curriculum as on the CP curriculum: 33.5%

**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: 22%
- Residents spend the same amount of time reading/studying on AP as they do on CP rotations: 31%
How often are you pulled from CP rotations to cover AP service?
(All residents)

- Frequently: 20%
- Sometimes: 24%
- Rarely: 15%
- Never: 24%
- Not applicable (I am an AP-only or CP-only trainee): 36%

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

- Frequently: 18%
- Sometimes: 61%
- Rarely: 1%
- Never: 5%
- Not applicable (I am an AP-only or CP-only trainee): 15%

Do your CP rotations incorporate graduated responsibilities?

Do your AP rotations incorporate graduated responsibilities?

1 = Never, 2 = Sometimes, 3 = Often
How prepared do you feel for the following business aspects of pathology practice?  
(PGY-4 residents only)

Management, Meetings, and Budgets

Do you attend management meetings with laboratory personnel?  

Have you had experience during training with budgets or finance?

PGY-4 Residents Only
What type of practice environment do you plan to seek or are currently seeking?

*(PGY 1-3 vs. PGY-4)*

![Bar chart showing the percentage of residents interested in different practice environments.](chart)

How confident are you about finding the pathology job you desire?

*(All residents)*

![Bar chart showing the confidence levels of all residents.](chart)

Approximately 57% of PGY-4 trainees are somewhat to very confident that they can find their desired pathology job position.
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 quarter of residents are clearly interested in community practice. Approximately 57% of PGY-4 residents express confidence that they can find their desired pathology position which represents approximately a 13% increase in confidence from last year.
- 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. Information in this section reflects responses for residents who formally applied for a job starting immediately after residency.

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

<table>
<thead>
<tr>
<th>Number of Residents</th>
<th>PGY-3/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>1-3</td>
<td>20</td>
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<tr>
<td>4-6</td>
<td>30</td>
</tr>
<tr>
<td>7-10</td>
<td>40</td>
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<tr>
<td>&gt;10</td>
<td>50</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Number of Residents</th>
<th>PGY-3/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>1-3</td>
<td>20</td>
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<td>4-6</td>
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<td>7-10</td>
<td>40</td>
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<tr>
<td>&gt;10</td>
<td>50</td>
</tr>
</tbody>
</table>

How many job offers have you received this year? *(PGY-3 vs. PGY-4 residents)*

<table>
<thead>
<tr>
<th>Number of Residents</th>
<th>PGY-3</th>
<th>PGY-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>&gt;3</td>
<td>50</td>
<td>40</td>
</tr>
</tbody>
</table>

A REPORT ON THE 2022 RISE, FISE, FISHE, NPISE, PISE and TMISE Surveys
On average, what was the starting salary offered (excluding benefits)? (PGY-3/4 residents only)

- $100,000/year - <$150,000/year: 30%
- $150,000/year - <$200,000/year: 21.5%
- $200,000/year - <$250,000/year: 13%
- >$250,000/year: 11.5%
- A starting salary was not discussed: 24%

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

- Yes: 50%
- No: 50%

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

- Very dissatisfied: 13%
- Dissatisfied: 5.5%
- Satisfied: 15.5%
- Very satisfied: 33%
- Not applicable: 33%

Conclusions

- 96 PGY-3/4 residents formally applied for a job starting immediately after residency. In 2022, 65 of these residents seeking an immediate job received a job offer (42 PGY-4s and 23 PGY-3s). The majority of residents were satisfied with the help/support that departments provided in their job search.
Applying For Pathology Fellowships

As part of the 2022 RISE, 1219 PGY-3/4 residents were surveyed about their experience in the fellowship process and residents’ attitudes towards fellowship training.

From the 2022 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)

![Pie chart showing the level of interest in applying for a fellowship.]

- 81.5% I have already accepted a fellowship
- 6% I have applied for a fellowship this year
- 3.5% I intend to apply for a fellowship this year
- 4% I intend to apply for a fellowship in the future
- 5% I do not intend to apply for a fellowship this year

Principal Reason for Pursuing a Fellowship  
(All residents)

![Bar chart showing the principal reasons for pursuing a fellowship.]

1 = Not applicable/not a consideration
2 = Not very important
3 = Minor importance
4 = Somewhat important
5 = Extremely important

- I have not identified an employer who will sponsor my visa: 13%
- Desired job not immediately available after residency: 12%
- Enhance pathology skills that were not taught during residency: 12%
- To obtain additional sign-out experience prior to employment: 8%
- Specific subspecialty training (and ABP subspecialty certification) is required for my desired job: 8%
- Employers expect fellowship training and are not likely to hire candidates without it: 1%

Number of Fellowships Intended to Complete  
(All residents)

About half of the residents plan to complete one fellowship, and 42% 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.

![Pie chart showing the number of fellowships intended to complete.]

- 42% 1
- 1% 2
- 4% 3 or more
- 0 0
- 1 1

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

49% of the residents applied to 1-3 fellowship programs, 18% applied to 4-6 fellowships, and 25% applied for 7 or more fellowships.

![Pie chart showing the number of fellowship programs applied to.]

- 49% 1-3
- 18% 4-6
- 12% More than 10
- 8% 0
- 1% 1-3
- 5% 7-10
How many fellowship interviews have you had (including in-person, by telephone, Skype, etc.)? (PGY-3/4 residents only)

About 70% of residents 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)

48% of residents received a single fellowship offer; only 2% of PGY3/4 had not received any offers at time of survey. 49% 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% of residents. 43% choose to pursue two or more fellowships.

- 48% of PGY-3/4 residents received one fellowship offer; 49% received multiple offers. <1% 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 AP/CP resident would still have another year to find a position.
- Surgical Pathology and Hematopathology are the top fellowships of choice; Cytopathology, GI/Hepatic Pathology, Dermatopathology, Gynecologic Pathology, and Forensic Pathology round out the top seven fellowship specialties.
The following questions were designed to assess resident exposure to and use of digital pathology during residency.

Have you had any specific training in the use of digital pathology (whole slide imaging) during residency? (All residents)

By the end of residency training 49% of residents have received some specific training in the use of digital pathology.

Please describe your exposure to digital pathology (whole slide imaging) during residency. (Select all that apply) (All residents)
Conclusions

Resident exposure to digital pathology is primarily centered around educational activities. Only 26% of residents report feeling moderately or very comfortable using whole slide imaging.
ASCP offered five Fellowship in-service examinations in Spring of 2022: the Fellow Forensic In-Service Examination (FISE), the Fellow In-Service Hematopathology Examination (FISHE), the Fellow Neuropathology In-Service Examination (NPISE), the Fellow Pediatric Pathology In-Service Examination (PISE), and the Fellow Transfusion Medicine In-Service Examination (TMISE).

Fellow in-service examinations were taken by 304 individuals: post-exam surveys offered the chance to query fellows in Forensics (n=57), Hematopathology (n=128), Neuropathology (n=50), Pediatric Pathology (n=21), and Transfusion Medicine (n=48) 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 the respective fellow in-service examination.

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

75% of surveyed fellows are already diplomates of the American Board of Pathology.
In which areas are you a diplomate of the ABP?

How long is your current fellowship program?
Which year of your current fellowship program are you in?

- FP: Two years (100%)
- HP: One year (100%)
- NP: Two years (60%) Other (40%)
- PP: One year (100%)
- TM: Other (100%)
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?

- **Forensic Pathology**
  - 0: 14%
  - 2: 25%
  - 4: 23%
  - >5: 12%
  - 1: 5%
  - 3: 5%
  - 5: 21%

- **Hematopathology**
  - 0: 19%
  - 2: 40%
  - 4: 8%
  - >5: 13%
  - 1: 9%
  - 3: 10%
  - 5: 1%

- **Neuropathology**
  - 0: 20%
  - 2: 10%
  - 4: 6%
  - >5: 8%
  - 1: 4%
  - 3: 4%
  - 5: 13%

- **Pediatric Pathology**
  - 0: 52%
  - 2: 15%
  - 4: 5%
  - >5: 15%
  - 1: 9%
  - 3: 5%
  - 5: 5%

- **Transfusion Medicine**
  - 0: 46%
  - 2: 15%
  - 4: 8%
  - >5: 10%
  - 1: 4%
  - 3: 15%
  - 5: 2%
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) specific subspecialty training (and ABP subspecialty certification) is required for desired job, 2) employers expect fellowship training and are not likely to hire candidates without it, 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?

How much has each of the following factors influenced your decision to pursue multiple fellowships?
Have you already completed a fellowship in a different subspecialty other than your current fellowship?

- FP
- HP
- NP
- PP
- TM

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

- FP
- HP
- NP
- PP
- TM
Conclusions

Approximately 72% of Forensic and 73% of Transfusion Medicine pathology fellows will only complete one fellowship. 57% of Pediatric Pathology, 51% of Hematopathology and 46% of Neuropathology fellows are planning to complete or have already completed, a second fellowship. Very few are planning more than two fellowships.

45% of fellows have indicated that they are considering completing more than 1 fellowship with Surgical Pathology, Molecular Genetic Pathology, Forensic Pathology, Pediatric Pathology, and Cytopathology topping the list.
Applying For Pathology Jobs After Fellowship

Please select which description most accurately describes your plan for fellowships and/or jobs:

- **I am applying for both jobs and fellowships**
- **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**
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 (45 of 57) fellows applied for 1 to 3 jobs. In contrast, 25% of Hematopathology (30 of 121), 20% Transfusion Medicine (9 of 46), and 10% Pediatric Pathology (2 of 20) fellows applied for 7 or more jobs.

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

In 2022, at the time of the survey (April 18 – 29, 2022) of the fellows who submitted resumes and had a formal interview, about 11% had not yet received an offer.

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

Summary

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?

- Academic institution
- Community group practice
- Reference Laboratory
- Corporate
- Government/Military
- Other

What is your expected employment status?

- Hourly Employee
- Partner/Partner Track
- Salaried Employee
- Locum Tenens

Number of Fellows

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

Most job offers included a proposed starting salary between $200,001 and $250,000.

Does the offer include a signing or moving bonus?

Moving and signing bonuses in offers varied across subspecialties.
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 3 months of formal applications.

From the time you started applying for jobs, how much time passed before you received a firm offer?

The majority of fellows who did find jobs received a job offer within 3 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?

- Spouse’s job
- Lifestyle considerations (weather, activities, etc.)
- Personal connection to the location or area
- Professional contacts in area
- Family considerations
66% of the fellows restricted their job search to a specific geographic region. Personal, family, and lifestyle considerations were cited as important factors. About 13% 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?
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Anna Owczarczyk, MD, PhD
Dana Razzano, MD

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Please address comments or questions about this survey to
Jay Wagner at Jay.Wagner@ascp.org.