ASCP FELLOWSHIP & JOB MARKET SURVEYS: A REPORT ON THE 2012 RISE, FISE, FISHE, NPISE, PISE AND TMISE SURVEYS

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The American Society for Clinical Pathology continues to respond to the interests and needs of residents, fellows, and program directors by directing an annual survey on fellowships and the job market for pathologists in training, including residents and fellows.

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 Exam (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 2,602 individuals participated in the Spring 2012 RISE, including 2,540 residents (658 PGY-1, 648 PGY-2, 650 PGY-3, and 584 PGY-4) and 63 individuals who cited training status as other than PGY 1-4, e.g. fellows.

A total of 279 fellows participated in the 5 Spring 2012 Fellowship In-Service Examinations.
APPLYING FOR PATHOLOGY FELLOWSHIPS

As part of the 2012 RISE, 1,218 PGY-3/4 residents were surveyed about their experience in the fellowship application process and residents’ attitudes towards fellowship training.

From the 2012 survey, the fellowships that most PGY-3/4 residents had already applied for or intend to apply for are listed in order of preference:

- Surgical Pathology
- Cytopathology
- Hematopathology
- Gastrointestinal/Hepatic Pathology
- Dermatopathology
- Blood Banking/Transfusion Medicine
- Genitourinary Pathology
- Breast Pathology
- Molecular Genetic Pathology
- Forensic Pathology
- Gynecologic Pathology
- Molecular Pathology
- Pediatric Pathology
- Neuropathology
Nearly half of residents cited enhancement of their pathology skills as the main reason for pursuing a fellowship, while one-third were planning their career in pathology to be based on their fellowship specialty. The third group of residents chose a fellowship to enhance their employability, and only a small number of residents chose a fellowship because of job unavailability. The vast majority of residents finalized their fellowship plans during their PGY-3 year, while much smaller numbers made their decisions earlier in their training; still, 8% did not decide on fellowship pathways until their 4th year of residency training.
The trend towards multiple fellowships appears to have stabilized, with 35% of residents reporting interest in doing 2 or more fellowships compared with 40% in 2011. Specialization in several fields as a career goal was the main reason for doing multiple fellowships, cited by more than half of residents. The main secondary reasons for multiple fellowships included biding time until a job became available, achieving specialty experience that would be required in anticipated jobs, and filling in residency training gaps. One in 20 residents do not plan to pursue a fellowship.

### Level of Interest in Applying for a Fellowship

<table>
<thead>
<tr>
<th>Level of Interest</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Already accepted a fellowship</td>
<td>81%</td>
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<tr>
<td>Already applied</td>
<td>8%</td>
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<tr>
<td>Intend to apply</td>
<td>6%</td>
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<tr>
<td>I do not intend to apply</td>
<td>5%</td>
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### Reasons for Pursuing Multiple Fellowships

- Improve “weak” areas of residency training (11%)
- Multiple subspecialties needed for job (15%)
- Job not available (17%)
- Career goals include specialization in multiple fields (54%)
- Family/location/timing of training (3%)
- Improve “weak” areas of residency training (11%)
To how many fellowship programs did you formally apply?

The largest group of residents applied to 3 or fewer fellowship programs, but one-fifth of residents applied to more than 10 programs.

Number of Fellowship Program Interviews Received

Nearly 85% of residents had between 1-6 interviews, with the vast majority having 3 or fewer interviews.
Number of Fellowship Offers Received

The reported results for fellowship offers in 2012 were remarkably similar to those reported in 2009, 2010, and 2011. Slightly more than half of residents received a single fellowship offer; in 2012, 10% of applicants (down from 12% in 2011) did not receive any offers, confirming that pathology fellowship opportunities still remain somewhat tight compared to the number of graduating residents. About one-third of residents had positive responses from two or more fellowship programs, certainly suggesting that there is competition among fellowship programs for strong applicants.

Did you accept more than one offer?

Only a small group of residents (6%) admitted to accepting multiple fellowship offers.
**CONCLUSIONS:**

Fellowship training in pathology is sought after by 95% of residents; about one-third of residents plan on multiple fellowships. Enhancing pathology skills, developing specialty-specific expertise for future employment, and filling training gaps were the prime considerations cited by residents for choosing to pursue one or more fellowships.

- Decisions on fellowship specialties were mostly made during the PGY-3 training year, but a small number of residents postponed fellowship choices until their 4th year of training.

- The majority of residents received only a single fellowship offer; about one-third, similar to previous years, received multiple offers. One in ten had not yet received a fellowship offer, only slightly fewer than in 2011 and suggesting that fellowship opportunities are still tight compared with total resident numbers.

- Surgical pathology remains the top fellowship choice; cytopathology has moved into the #2 fellowship spot above hematopathology, while GI/hepatic pathology, dermatopathology, and a new entry, transfusion medicine round out the top 6 fellowship specialties.
Survey on Sign-Out: 2012

The ASCP Resident Council received requests from residents interested in learning about national trends regarding sign-out procedure and to discern PGY-3 and -4 attitudes about sign-out and their level of confidence.
What type of sign-out experience does your program have?

- Morning or day-of preview time, sign-out with attending (51%)
- Overnight preview time, sign-out with attending (43%)
- No preview time, sign-out with attending (1%)
- Other (5%)

Do you believe that your sign-out experience would benefit from:

- More preview time (49%)
- No change (49%)
- Less preview time (2%)

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Do you feel ready to sign-out general pathology cases upon graduation from residency?

- Yes (12%)
- Yes, but with back-up if needed (49%)
- Yes, but with a transitional period where all cases are reviewed (25%)
- No (14%)
- Need fellowship training to feel confident (65%)
- Not enough graduated responsibility in training program (11%)

Why don’t you anticipate feeling ready to sign-out cases upon graduation from residency?

- Not prepared - educational deficiency (14%)
- Did not see enough variety of cases in residency (3%)
- Did not see enough volume of cases in residency (7%)
- Not enough graduated responsibility in training program (11%)
- Need fellowship training to feel confident (65%)
CONCLUSIONS:

About half of residency programs utilize previewing on the day of sign-out, while a slightly smaller number preview cases the night before sign-out with the attending. Half of residents polled stated that they would prefer more preview time, while an equal number were satisfied that their preview time was adequate.

The vast majority of PGY-3 & -4 residents felt that they were ready to sign out general pathology cases after completing their training but only a small percentage felt immediately capable of independence, without backup or a transitional period.

A small but significant group (14%) did not feel ready for general pathology sign-out after graduation; two-thirds of these residents felt that fellowship training would overcome that training gap. The remainder cited several program deficits including lack of: education, graduated responsibility, case volume, and case variety.

Nearly one-quarter of residents do not have graduated sign-out available to them during training, but nearly all residents desire this capability. Tellingly, fewer than 20% of senior residents sign out frozen sections on their own.
Although relatively few pathology residents opt to go directly from training into the job market, both the ASCP Resident Council and the RISE Committee deem it critical to survey residents in this situation and report relevant information for future trainees.

**Number of Jobs Formally Applied For**

In 2012, 475 PGY-3 and PGY-4 residents noted that they were seriously considering entering the job market; however, only 139 actually applied for a specific job. Slightly more than two-thirds applied for between 1-3 jobs, but a small subset applied for at least 10 positions.
Perception As to Where Jobs are Most Available

Community jobs are perceived to be most readily available for trainees coming directly out of residency, but academic positions were close behind, and these two accounted for 80% of jobs sought immediately after residency training.

Helpful Employment Resources

Residents learned of jobs through a variety of venues but, as noted previously, hearing of jobs from faculty and by word-of-mouth is always the most important resource for the job search. Rounding out the top 4 best venues were (2) contacting potential employers directly; (3) job boards at conferences and meetings; and (4) using pathology-outlines.com for job opportunities.
Job Search: Geographic Restrictions

Geography always plays an important but not overwhelming role in job selection; 42% of residents in 2012 stated that their job search was limited to certain parts of the country.

Job Search: Other Restrictions

Perhaps related to the current economic situation, the spouse’s job and lifestyle/family issues play equally significant roles in geographic job considerations. The spouse’s job continues to rise in importance: 38% in 2012, compared with 34% in 2011 and only 18% in 2010. Being native to the area of desired employment is still a consideration, but the influence of nearby professional contacts is negligible.
Did you receive a job offer at your own residency or fellowship training program?

- Yes, accepted and plan to stay (24%)
- Yes, accepted but will keep looking in the future (10%)
- Yes, but declined for another offer (14%)
- No, not offered (52%)
- Other (39%)
- >3 (2%)
- 3 (4%)
- 2 (12%)
- 1 (39%)
- 0 (43%)
As noted previously, 139 residents formally applied for job openings in 2012. A significant number (39%) received a single employment offer, but 43% failed to receive any offer. About one-fifth of residents received multiple offerings (see related pie chart).

In the 2012 survey, 51 of the 139 residents who were actively seeking jobs did receive offers to become an attending at their current training program.
Factors in Job Choices

Residents who found employment immediately after residency were asked to rank factors in their job choice. Long-term security and the working environment remained at the top of the list, similar to 2011, while family and geographic considerations were next most important.

1. Long-term job security: 4.1
2. Job availability in a specific geographic region: 3.9
3. Salary considerations: 3.8
4. Opportunities for career advancement: 3.8
5. Research opportunities: 2.7
6. Teaching opportunities: 3.1
7. Opportunities to practice a subspecialty interest: 3.7
8. Family factors (e.g. spouse's job/children's school): 3.9
9. Fiscal pressures (loan repayments etc.): 3.3
10. Your perception of staff and institution at interview: 4.1

Scale: 5=extremely important, 4=somewhat important, 3=minor importance, 2=not very important, and 1=not a consideration.)
The ASCP Resident Council was also interested in how residents perceive the US healthcare system and pathology's future.

Would you want access to a centralized database of private practice and academic institutions and the types of pathologists they employ?

Yes (89%)
No (11%)

Resident feelings about U.S. healthcare in general

Optimistic (29%)
I do not practice or live in US (6%)
Pessimistic (65%)

Resident feelings about future compensation for Pathologists

Optimistic (24%)
I do not practice or live in US (6%)
Pessimistic (70%)
How confident are you about finding the pathology job you desire?

When all PGY-3 & -4 residents were surveyed, two-thirds were somewhat or very confident that they would be able to attain their desired pathology job.

How many fellowships do you intend to complete? (Residents who are pessimistic about finding a desirable pathology job)

Pessimism regarding available jobs did not affect the decision to pursue a fellowship nor the number of fellowships they planned to complete when compared with optimistic residents.
CONCLUSIONS:

• A minority of residents seriously consider taking jobs immediately following their general pathology training, but only a fraction of these residents actually proceed to formally apply for positions. Opportunities do exist for such residents in both community and academic practice, but 40% of applicants did not receive any employment offer; a significant proportion of available positions are at the academic institution where the individual trained.
• Faculty contacts and word-of-mouth are the best sources for job contacts.
• Family issues have joined long-term job security and the staff-based working environment as strong factors in job choice.
• Although residents are somewhat pessimistic about health care, most feel that they can find desirable jobs; applying for fellowships is essential regardless of resident outlook.
APPLYING FOR PATHOLOGY JOBS AFTER FELLOWSHIP

ASCP offered five Fellowship in-service examinations for the Spring of 2012: 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 Exam (TMISE). Fellow in-service examinations were taken by 279 individuals; post-exam surveys offered the chance to query fellows in Forensics (n=37), Hematopathology (n=135), Neuropathology (n=41), Pediatric Pathology (n=19), and Transfusion Medicine (n=47) about their experience entering the job market and any plans for additional specialty training.
Indicate your residency training track

The majority of fellows in Forensics, Hematopathology, and Pediatric Pathology came from a background of AP/CP residency training; as expected, about half of Neuropathology and Transfusion Medicine fellows did their residency training in AP-only and CP-only tracks, respectively.

For how many jobs did you formally apply?

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How many job offers did you receive?

Although the majority of fellows in all 5 specialties applied for modest numbers (<7) of employment positions, a significant proportion (30% or more) of hematopathology, pediatric, and transfusion medicine fellows had 7 or more applications. This trend may be related to greater competition for available jobs since at least 30% of fellows in each of these subspecialties did not receive any job offer. Interestingly, nearly half of neuropathology fellows similarly did not receive offers but sent out far fewer applications; it is possible that the absolute number of open jobs in this field is sparse.

For those fellows who did receive employment offers, the majority had only a single position made available, but a good percentage (12-31% depending on the specialty) received 2 offerings. Only transfusion medicine fellows had a significant number of fellows (19%) receiving more than 2 job offers; by contrast, none of the pediatric or neuropathology fellows received more than 2 offers. These data are of concern, indicating an imbalance between the number of pathology fellows seeking employment versus the number of job openings.
How long did it take you to find a job?

The majority of fellows who did find jobs did so within 6 months, but a significant percentage had to continue searching for up to 12 months or even longer in a few instances (see related chart).

Additional Subspecialty Fellowship (Total Number of Fellowships Planned)

Are you going to do an additional fellowship in a subspecialty other than your current fellowship?

A significant percentage of fellows are planning to complete an additional fellowship besides the one they had just finished (see the following chart). Only a small proportion (one-quarter) of forensics fellows planned additional training, while at least one-third to more than one-half of other pathology fellows are seeking added fellowship training. Overall, 40% of all fellows surveyed plan to complete 2 or more fellowships, consistent with surveys of residents from the RISE.
Indicate your principal reason for pursuing fellowship training.

Only for forensic fellows did a majority of respondents cite fellowship training as a necessity for their desired employment; transfusion medicine fellows cited similar rationales but to a lesser extent. The largest percentage of hematopathology, pediatric, and neuropathology fellows cited enhancement of pathology skills as their impetus for added training.

Career goals requiring enhanced specialization in more than one field of pathology was the number one reason for completing multiple fellowships for all fellows queried, regardless of subspecialty training (see following graph). For the majority of fellows surveyed, their current fellowship was their last as they anticipated entering the job market.
For what reason(s) are you interested in completing multiple fellowships?

1. Desired job not available after the completion of 1st fellowship
2. Career goals include advanced specialization in more than one field
3. Need to improve "weak" areas of residency training to feel comfortable to practice
4. Family/location/timing of training
5. Believe that multiple areas of subspecialty are needed to compete in a sparse job market

Are you (or do you plan to)

1. Only applying for a job (not applying for fellowship)?
2. Only applying for fellowships (not applying for jobs)?
3. Applying for both jobs and fellowships?

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Geography was only modestly important in job selection for all fellows in the 2012 survey except for forensics; the reasons for geographic restriction were very similar to those for residents: family (especially spousal employment), lifestyle, and being native to the area (see related graph). The East Coast continues to be attractive but nearly all areas of North America are represented, depending on the fellowship specialty.

Did you restrict your job search to a specific geographic region?

Indicate your principal reason for such a restriction.
Indicate the area to which you restricted your job search.

1-Northeast US
- Forensic: 32%
- Hematopathology: 22%
- Neuropathology: 20%
- Pediatric Pathology: 33%
- Transfusion Medicine: 29%

2-Southeast US
- Forensic: 5%
- Hematopathology: 20%
- Neuropathology: 21%
- Pediatric Pathology: 27%
- Transfusion Medicine: 37%

3-Midwest US
- Forensic: 20%
- Hematopathology: 16%
- Neuropathology: 13%
- Pediatric Pathology: 11%
- Transfusion Medicine: 37%

4-Northwest US
- Forensic: 0%
- Hematopathology: 4%
- Neuropathology: 13%
- Pediatric Pathology: 16%
- Transfusion Medicine: 37%

5-Southwest US
- Forensic: 8%
- Hematopathology: 7%
- Neuropathology: 11%
- Pediatric Pathology: 22%
- Transfusion Medicine: 37%

6-Canada
- Forensic: 4%
- Hematopathology: 3%
- Neuropathology: 13%
- Pediatric Pathology: 0%
- Transfusion Medicine: 0%

7-Other
- Forensic: 16%
- Hematopathology: 7%
- Neuropathology: 15%
- Pediatric Pathology: 11%
- Transfusion Medicine: 0%
Starting annual salaries were quite disparate among fellowship groups (see related chart). Only 15% of forensics fellows and 8% of transfusion medicine fellows reported starting annual salaries of $200,000 or more; about one-quarter of neuropathology fellows were in that range. Nearly 50% of Hematopathology and Pediatric pathology fellows received offers in the $200,000 or greater salary range. For only 5% of fellows overall was a starting salary not known.
Reasons For Specific Job Selections In Order of Importance

1. Long-term job security
2. Job availability in a specific geographic region
3. Salary considerations
4. Opportunities for career advancement
5. Research opportunities
6. Teaching opportunities
7. Opportunity to practice a subspecialty interest
8. Family factors (e.g. spouse's job, children's school)
9. Fiscal pressures (loan repayments, etc.)
10. Your perception of staff and institution at interview
There was also disparity among fellow specialties in bonuses. About one-half to two-thirds of transfusion medicine, pediatric pathology, and hematopathology fellows received a signing and/or moving bonus for their new job. Only one-third of forensics fellows and very few neuropathology fellows received a bonus.

Did you receive a bonus?

Based on your experience, where are most available specialty pathology positions at this time?

The majority of forensics fellows have consistently found jobs with governmental entities, which may be one reason why they were not offered higher starting salaries or bonuses. By contrast, nearly 80% or more of all other fellows surveyed found jobs in either academic or community practice. The vast majority of neuropathology, pediatric pathology, and transfusion medicine jobs are in the academic sector.
FELLOWS SURVEYED ABOUT ANTICIPATED JOB RESPONSIBILITIES

Fellows were also surveyed about their anticipated job responsibilities. As expected from both their training and job locales, fellows who were completing training in forensics were overwhelmingly entering positions with primary medicolegal responsibilities. Similarly, nearly 80% of pediatric pathology fellows and more than half of transfusion medicine fellows expected that their practice would be limited to this pathology specialty, possibly because of their overwhelmingly academic settings.

By contrast, the majority of fellows completing their training in hematopathology were expecting to be handling additional non-specialty responsibilities, with the largest group having an anticipated job description that encompasses all aspects of anatomic and clinical pathology practice. Not unexpectedly, since a large proportion of neuropathology fellows were trained in AP/NP, nearly three-quarters were expecting their job responsibilities to be limited to neuropathology and surgical pathology.
Forensic Pathology: What types of cases will make up the majority of your workload?

Hematopathology: What types of cases will make up the majority of your workload?
Neuropathology: What types of cases will make up the majority of your workload?

- 1-Neuropathology only (12%)
- 2-Neuropathology and surgical pathology (58%)
- Other (12%)
- 4-Neuropathology, surgical pathology, and clinical pathology (18%)

Pediatric Pathology: What types of cases will make up the majority of your workload?

- 1-Pediatric pathology only (78%)
- 4-Pediatric pathology, surgical pathology, and clinical pathology (22%)
CONCLUSIONS:

- A substantial percentage (40%) of fellows plan to complete additional fellowship training, defined as 2 or more pathology fellowships before entering the job market. For those fellows who were seeking jobs, most applied for modest numbers of available positions (<6 opportunities).

- The job situation for pathology fellows is still mixed; most fellows receive 1-2 offers, but a substantial minority is not finding employment right away. This latter circumstance may weigh on fellows’ decisions to pursue additional fellowship training. Most fellows receive a job offer within the first 6 months, but some need up to a year or more for a positive response.

- There is some disparity in starting salaries (and bonuses) between fellows coming out of training. This could be related to the variability in employment locales, e.g. forensics fellows entering governmental entities. Fellows coming from forensics, pediatric pathology, and transfusion medicine largely expect that their job responsibilities will mirror their fellowship specialty, but a significant percentage will shoulder additional general pathology practice duties. By contrast, most fellows completing their training in neuropathology or hematopathology anticipate positions that encompass an additional general pathology workload.
ACKNOWLEDGEMENTS

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