

Building an Internal Pathology Technician Certification Program at MPI Research

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INTRODUCTION

Technicians within pathology departments play key roles in the success of pathology investigations.^{1,2} The complexity of scientific, regulatory, and high-throughput requirements in industry settings augments the need for developing and retaining such high-quality technical staff.

In addition to qualifications from available national certification programs (e.g., AALAS, ASCP), much of clinical and pathology technicians' specialized training is acquired during work.^{2,3,4} On-the-job training establishes direct correlations between information and practice, and limits interference with workers' primary responsibilities. Such training increases technicians' skills, quality, and relevance, and the value of institutional management and fostering the progress of technician learning and career development are increasingly recognized.^{3,4}

Recommendations for training programs involving clinical veterinary technicians in animal research programs include: tailoring training to the roles individuals play in supporting the program, aiming to both expand skills and provide professional development opportunities, and ensuring programs are dynamic and allow for refinement.^{3,4} Furthermore, it is important that staff perceive themselves as pursuing meaningful work and having opportunities for career advancement.^{3,4} The productivity and quality of service professions is bolstered by maintaining an effective staff and preventing the direct and indirect losses to productivity and morale that are associated with turnover.⁴ These guiding observations are equally relevant to nonclinical programs, such as pathology, and the associated technical staff.

In the absence of, or as a supplement to national certification programs, institutional training/certification programs are poised to build and sustain staff quality. In an effort to better recognize abilities of technical staff, promote technician advancement, and contribute to departmental and individual improvement, technician leaders and pathologists at MPI Research designed an internal certification program for technicians in necropsy, trimming, and histology sections in 2014. Additional anticipated benefits were to increase technician-pathologist interaction and boost exploration of scientific and/or procedural questions through focused projects.

PROGRAM OVERVIEW

Technicians in necropsy, trimming, and histology sections are eligible for participation in the certification program. Required program components are:

- I. ≥15 college credit hours to include: ≥ 4 credit hours biology, ≥ 4 credit hours chemistry, and ≥ 3 credit hours mathematics
 - Depending on employment longevity, a company educational assistance program is available to ameliorate educational costs
- II. Work experience in relevant laboratory section(s) (necropsy, trimming, or histology)
 - ≥6 years if no prior college degree
 - ≥4 years if prior associate degree
 - ≥2 years if prior bachelor degree
- III. ≥1 month cross-training in a relevant laboratory section (necropsy, trimming, or histology)
- IV. Participation in a project and presentation of the project (e.g., poster or presentation)
 - Collaboration with a pathologist is recommended
- V. Completion of a 120-question certification examination with performance ≥75%
 - The exam questions are multiple-choice and short-answer, and are compiled by a supervisor from a bank of approximately 400 questions vetted by a pathologist
 - The exam is offered quarterly, and exam questions and a set of study resources are made available upon confirmed eligibility to sit the exam

Entry into the program is available at any time: eligible individuals complete an application and compile a project plan in conjunction with their supervisor and a pathologist (recommended).

To successfully finish the certification, all required components must be submitted to the supervisor before the examination, which is offered quarterly. Final program completion is dependent on approval by the applicant's supervisor and a pathologist. Upon completion, the individual receives increased wage compensation.

RESULTS

Projects Completed in the First Year of the Internal Pathology Technician Certification Program at MPI Research

| Participant | Employment Section | Project | Impacted Section |
|-------------|--------------------|--|------------------|
| 1 | Histology | Methods of modifying tissue orientation for frozen sections | Histology |
| 2 | Trimming | Procedure for eye dissection in rabbit biodistribution studies | Necropsy |
| 3 | Necropsy | Communication bulletin on clinical pathology and necropsy setups | Necropsy |
| 4 | Trimming | Methods for collection of intramuscular injection sites in rabbits | Necropsy |
| 5 | Trimming | Scheme for tissue submission to trimming | Trimming |
| 6 | Necropsy | Procedure for fixation of tissue by systemic perfusion | Necropsy |
| 7 | Necropsy | Necropsy Guide for quick perfusion pump programming | Necropsy |

- All participants had prior bachelor degrees
- All participants passed the exam with an average exam score of 89.9%

Examples of tangible project outcomes available for routine use, presentation, marketing, and/or dissemination

The image shows several posters and a table. One poster is titled 'Improving the Collection Accuracy of Common Intramuscular Injection Sites for Histopathology in Rabbits'. Another is 'Rabbit Eye Dissection Procedure Following Ocular Administration For Biodistribution Studies'. A central graphic asks 'What Happens After a CSU Submission?'. Below these is a table comparing 'At Necropsy' and 'At Trimming' procedures for a 'Rat'.

| Rat | |
|---|-----------------------|
| At Necropsy | At Trimming |
| • Mandible (cut off) | • Right Ear |
| • Olfactory bulbs (when damaged) | • Mandible (cut) |
| • Brain | • Brain |
| • Bladder (left) | • Bladder (left) |
| • Uterus (if present) | • Uterus |
| • Left Kidney (if not clipped to cassette) | • Kidney (left) |
| • Right Kidney (if not clipped to cassette) | • Kidney (right) |
| • Prostate (if present) | • Prostate |
| • Testes (if present) | • Testes |
| • Epididymus (if present) | • Epididymus |
| • Seminal Vesicles | • Seminal Vesicles |
| • Rectum (if present) | • Rectum (if present) |
| • Bladder | • Bladder |
| • Uterus | • Uterus |
| • Vagina | • Vagina |
| • Cervix | • Cervix |
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