

Standard Setting Proposal

Dear ACPV Board of Governors,

Thank you for your interest in my consulting services for standard setting the annual Certifying Examination of the American College of Poultry Veterinarians. During the Angoff process, each multiple choice and image recognition item in the question bank is evaluated by multiple subject matter experts (SMEs) and they are asked to determine how many of 100 minimally competent candidates (not experts) will answer the item correctly. I recommend having 5-6 SMEs evaluate each question. Comments about each question are also collected during this time. I utilize Qualtrics, a web-based survey system, to collect this data. Ideally, the question bank is divided into portions of 50-60 questions to avoid overwhelming the SMEs.

Once each portion has been evaluated, a live session is conducted to discuss any questions where there is more than a 20-point difference between SMEs. I typically use Zoom, a popular web conferencing solution, to conduct these live sessions. During the discussions, each SMEs has the opportunity to adjust their score to better align with the group mean, if they so choose. They can also keep their score as-is if they feel strongly about the question. Comments about the questions are also discussed during this time. This is a great opportunity to discover grammar and spelling issues in the items, or remove items that the group feels are no longer relevant.

Once the Angoff scores have been finalized, the data is transferred to Examsoft and become part of each question. For future exams, the calculated exam cut score will be determined by the mean of the Angoff scores for the questions that are included on the exam. This means that the cut score could be different each year, depending on which questions are selected. Each year, all new questions will need to be Angoff scored before they are officially added to the Examsoft question bank. Any questions that underwent major edits will need to be re-scored.

For the Practical exam, the cut score will be calculated using a different approach called the Hofstee method. Subject matter experts are presented with the entire Practical exam, using Qualtrics, and are asked to indicate the lowest acceptable cut score, the highest acceptable cut score, the minimum acceptable passing rate, and the maximum acceptable passing rate. I

recommend utilizing the Hofstee method for the multiple choice and image recognition exams each cycle as well for redundancy.

I propose providing the following services for the Angoff process:

- Formatting and adding/importing remaining exam questions (“Form B”) into Examsoft
- Webinar presentation/discussion with the committee to give an overview of the process
- Creation of Qualtrics web-based surveys to collect Angoff scores and comments for each multiple choice and image recognition question from subject matter experts
- Analysis of collected data and identification of discrepant items
- Scheduling and facilitation of web-based discussion sessions for discrepant items
- Addition of finalized Angoff data into the Examsoft question bank

I estimate this phase will require 70-80 hours of my time, at \$85/hour, for a total cost of \$5,950 - \$6,800. This process will determine Angoff scores for all existing Multiple Choice and Image Recognition items in the question bank.

Each year, the finalized exams (Multiple Choice, Image Recognition and Practical) will need to be Hofstee scored, via Qualtrics. Any new, or heavily edited, multiple choice and image recognition items will also need to be re-scored. At the end of each exam, I will analyze the candidate scores, calculate the cut scores, and make a passing recommendation to the exam committee based on the Angoff data, Hofstee data and candidate score distributions. I estimate this annually repeating portion will require 35-45 hours of my time, for a total cost of \$2,975 - \$3,825.

Please let me know if you have any questions or need additional information. I look forward to the opportunity to work with you. Thank you for your time and consideration.

Sincerely,

A handwritten signature in cursive script that reads "Robert Malinowski".

Robert Malinowski, DVM, MA, PhD

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