

Examination Passing Standard

Castle understands that the American College of Poultry Veterinarians (ACPV) requests a proposal to establish a new passing standard for the ACPV Certification Examination. Castle would be pleased to provide this service to ACPV.

The following proposal contains a generic timeline, which provides ACPV with an estimated amount of time required for each task, as well as a cost proposal.

1. Passing Standards

A valid credentialing examination must have a defensible passing standard. These performance standards are designed to provide evidence that candidates taking an examination meet the competencies required for the credential. Methods were developed from the 1950's to establish the 'cut scores' of an exam, that is, the score required by a candidate to pass an exam. These techniques are typically referred to as standard setting.

Criterion-referenced procedures are the accepted technique for establishing passing standards. Criterion-referenced procedures provide a demonstrable linkage between the performance standard and the acceptable knowledge and skill required for credentialing. The majority of criterion performance standards are established using a Modified Angoff technique, though other accepted techniques, such as Bookmarking, are available.

Using an agreed upon method, a recommended performance standard will be presented to ACPV for consideration and decision making. ACPV will have final determination of the standard for the examination.

Standard Setting Workshop

Prior to the standard setting workshop, Castle's psychometrician will assist ACPV in the selection of subject matter experts (10 to 12 subject matter experts recommended) and will prepare the appropriate meeting materials.

During the two-day, in-person standard setting workshop, Castle will follow an agenda appropriate to the selected method and will ensure that the following steps are implemented:

- Conduct an overview of the meeting, its purpose, rationale, and activities.
- Train panelists to use the selected method.
- Provide the panelists with opportunities to practice the required decision making process.
- Review key definitions such as minimal competency and/or other performance standards.
- Implement the method.
- Conduct a preliminary review of decision making for first-round data collection.
- Implement the method a second time.
- Conduct a preliminary review of decision making for second-round data collection.
- If needed (and if time available), conduct a third round of data collection.
- Collect evaluation feedback from the panelists about their understanding of the method, its implementation, and their satisfaction with the recommended score.

Recommendation and Final Report

Castle will employ statistical devices consistent with the agreed upon standard setting method to formulate a recommended passing standard and associated range.

A standard setting report will be prepared for that will include elements necessary that meet the test development standards such as: the purpose and methodology; participant qualifications; summary results of the rounds; and the recommended standard.

Sample Timeline

For informational purposes, a sample timeline is provided below. Castle will work with ACPV to develop a mutually agreeable schedule.

| Task | Estimated Time |
|--|----------------|
| Castle's psychometrician assists ACPV as needed with the selection of approximately 10 to 12 workshop participants. ACPV sends the current form of the examination to Castle | Beginning |
| Castle prepares appropriate meeting materials for the standard setting workshop | 2 days |
| Castle psychometrician facilitates a 1.5-day, in-person standard setting panel meeting with the ACPV-appointed panel to determine a fair and defensible passing point. | 1 day |
| Castle enters, compiles, and calculates standard setting data and prepares a recommendation for the examination passing point. | 5 days |
| Castle submits the final standard setting study report to ACPV. | end |

Standard Setting Workshop:

- Castle will assist ACPV with the selection of 10 to 12 workshop participants.
- ACPV will send the current examination form to Castle in electronic format. ACPV also will send all images associated with the current examination form and the scoring criteria for the open-ended questions. Castle understands the current examination contains 200 multiple-choice questions, 100 images, and 10 written questions.
- Castle will prepare appropriate meeting materials for the standard setting workshop, working with ACPV to prepare a description of the competent candidate for the examination, and formatting the examination items for subject matter expert review.*
- Castle will conduct a 1.5-day, in-person standard setting workshop, with participants identified by ACPV, during which the participants will use the agreed upon standard setting method to establish the performance standard for the examination form.
- Castle will provide a final report on the standard setting study consistent with test development standards and provide a recommendation for the passing point.

◆◆◆Total:

| | |
|---|--------------------|
| Standard Setting Workshop and Report | \$8,600 |
| Travel and other expenses | as invoiced |

*If a description of the competent candidate for the examination does not exist, Castle recommends an additional meeting day and/or a web-based meeting (not to exceed 4 hours) in order to develop a target audience statement. An additional fee will apply.

Additional Notes:

The above fee assumes one form of the examination. If the cut-score must be determined for more than one exam form, an additional fee will apply.

ACPV will determine the location of the standard setting workshop, and will be responsible for meeting facility expenses and reasonable travel-related expenses for Castle’s psychometrician and all workshop participants. If the participants are to be compensated for their efforts, ACPV will be responsible for any honoraria. If additional meeting days are required to complete the scope of work, Castle will invoice ACPV \$2,500 per staff member per day plus travel-related expenses.

Castle will invoice ACPV half of the total amount upon completion of the one-day standard setting workshop and the final half of the total amount upon submission of the final report. Travel-related expenses for Castle staff will be submitted with the first invoice.



Summary Sheet

Title: Proposal to Conduct a Job Analysis Study
for the American College of Poultry Veterinarians (ACPV)

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**Please Direct
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The cost quotation contained in this proposal will remain valid for a period of 90 days following the submission date (March 27, 2012).

Name: Jeffrey T. LaRiche

Title: Chairman and Chief Executive Officer

Signature: 

Firm: Castle Worldwide, Inc.

Table of Contents

- I. Statement of Work 1
 - A. Job Analysis Study 1
 - 1. Preliminary Analysis and Panel Recruitment 1
 - 2. Domain and Task Analysis 1
 - 3. Validation of the Job Analysis..... 2
 - a. Developing the Survey 2
 - b. Determining the Sample Size and Population 3
 - c. Distributing the Validation Survey 3
 - d. Analyzing Validation Survey Results 4
 - e. Constructing the Test Specifications..... 5
 - f. Preparing the Final Report..... 5
- II. Proposed Project Timeline 7
- III. Corporate Qualifications 9
 - A. Experience..... 9
 - B. Sample Client List..... 10
 - C. Project Staff 12
 - D. References 13
 - E. Philosophy and Unique Strengths..... 14
- IV. Cost Proposal 16

Appendices:

- A. Sample Examination Blueprint
- B. Personnel Résumés

I. Statement of Work

A. Job Analysis Study

Castle Worldwide, Inc. (Castle) is pleased to present this proposal to the American College of Poultry Veterinarians (ACPV) to conduct a job analysis study.

The job analysis study that Castle will conduct for ACPV will provide a clear definition of the primary domains, specific task statements, and related knowledge and skills required for competent performance as a poultry veterinarian. In addition, the study will provide explicit test specifications for use during the examination development and assembly processes. Castle's proposed job analysis methodology adheres to all requirements provided in the *Standards for Educational and Psychological Testing* (1999) and the *Standards for Accreditation of National Certification Organizations* (NCCA) and has strong legal defensibility.

1. Preliminary Analysis and Panel Recruitment

Castle's senior psychometrician will conduct a preliminary analysis of the poultry veterinarian profession using existing materials such as job descriptions and literature reviews. In addition, as necessary, Castle will facilitate discussions with key ACPV personnel to evaluate trends in the profession and clarify the expectations and goals of the study. The purpose of the preliminary analysis is to acquaint the psychometrician with the job of a poultry veterinarian. Information gathered during this analysis assists the psychometrician with preparing instructional materials and facilitating the job analysis meeting.

During this preliminary analysis phase, Castle's assigned project manager will provide ACPV with consultation concerning the identification and selection of subject matter experts to serve on the job analysis panel. Generally, a panel of 8 to 12 individuals provides adequate representation of the profession. While the number of panelists is flexible, all panelists should be thoroughly knowledgeable of the profession and should represent the profession in such areas as job setting, job title, geographical region, and gender. Castle's consultation during this period is designed to ensure that ACPV's recruitment efforts achieve the desired composition for the panel.

2. Domain and Task Analysis

Castle will prepare and distribute instructional materials to the job analysis panel members. The materials will assist the panelists with outlining the major performance domains, tasks, and related knowledge and skills of the minimally-competent poultry veterinarian. The materials will instruct the panelists in writing measurable task statements and applying appropriate validation ratings.

The job analysis panel will meet for three days under the leadership of a Castle psychometrician to outline the primary responsibilities of poultry veterinarians. During the meeting, the panel will first generate the major performance domains underlying the profession. These performance domains will constitute the primary areas of responsibility for poultry veterinarians. Once the major performance domains have been delineated, panelists will outline the specific responsibilities or tasks associated with each performance domain. The panel then will proceed to identify the knowledge and skills associated with the successful performance of each task.

Castle applies a modified nominal group technique when delineating the components of the job analysis study. This process ensures that each member of the panel has equal input into the generation of the study. Thus, the opinions and judgments of the diverse group of experts are collated in an equitable and efficient manner.

The panel then will validate the domains and task statements associated with competent performance. The panel will evaluate the statements according to their importance, criticality (degree to which inability to perform the task could cause harm), and frequency of performance. The rating scales range from zero (0) to four (4) and are defined below. Detailed definitions of each rating will be provided to the panel and to survey respondents participating in the validation study.

| Importance: | Criticality: | Frequency: |
|------------------------|---------------------|-------------------|
| 0. Not Essential | 0. No Harm | 0. Never |
| 1. Somewhat Essential | 1. Minimal Harm | 1. Rarely |
| 2. Essential | 2. Moderate Harm | 2. Frequently |
| 3. Very Essential | 3. Significant Harm | 3. Often |
| 4. Extremely Essential | 4. Extreme Harm | 4. Constantly |

Following the meeting, Castle will compile and calculate the validation data provided by the job analysis panel and will prepare a preliminary examination blueprint based on the data. The examination blueprint is created by calculating relative weights for each domain and task using the importance, criticality, and frequency scale ratings.

At this time, key ACPV personnel will have an opportunity to review and comment on the preliminary examination blueprint and the proposed test design. Castle will work with ACPV to incorporate any recommended revisions that are deemed appropriate. Castle then will compile the delineation of domains, tasks, knowledge, and skills into a document referred to as a classification system. The classification system is a grouping and numerical coding of the domains, task statements, and related knowledge and skills by content area. Castle staff members will provide psychometric editing of the domain, task, knowledge, and skill statements provided in the classification system.

3. Validation of the Job Analysis

The next stage of the project is the validation study, which Castle will conduct to determine whether the job analysis, as developed by the panel of experts, sufficiently describes the role of poultry veterinarians. The validation study involves surveying a sample of practitioners who represent the full range of job settings, job titles, educational backgrounds, geographical regions, experience levels, etc. Castle will consult with ACPV to define parameters for identifying a representative sample of practitioners. Survey participants will be asked to review and rate the performance domains and task statements developed by the job analysis panel, thus yielding crucial content validity evidence for the examination.

a. Developing the Survey

Using the classification system developed from the job analysis meeting, Castle will prepare a validation questionnaire. The survey will enable respondents to evaluate, provide feedback, and validate the domains of job and the task statements.

The questionnaire will open with an explanation of the purpose and importance of the survey and will provide clear instructions for its completion and submission. The second section of the questionnaire will be used to collect confidential demographic information about the individual respondent. This information will document the survey respondents' qualifications. Castle will request input from ACPV and the job analysis panel concerning the demographic variables to be included in this important section of the validation survey.

A section providing the definitions for key terms used in the survey will follow the demographic section. This section will clarify professional nomenclature and ensure that all respondents interpret the survey in the same manner. The questionnaire then will list the domains and task statements for evaluation by the respondents. Clear definitions of the rating scales will be provided on each page. Respondents also will be encouraged to provide their own task statements as well as any comments or additional information.

Castle's project manager will evaluate all items carefully to ensure that they adhere to accepted research methodology. The project manager will review the survey for the correct application of job analysis survey design. Experienced editors will conduct a thorough review of the survey for grammar, proper layout, and clarity. Clear, easily understood instructions on completing the survey will be provided to the participants.

Castle will prepare a preliminary draft of the survey for ACPV's review following completion of the job analysis meeting. Following review and revision, a final draft of the survey will be submitted to ACPV for approval. Upon approval, Castle will prepare the survey for online access.

b. Determining the Sample Size and Population

Selecting an appropriate sample of survey participants is critical to the validation study. The selected sample should represent a variety of organizational settings, years of experience, and geographical regions. Castle understands that ACPV currently has approximately 300 diplomates. Approximately 8 to 12 diplomates will participate in the job analysis meeting. Castle recommends surveying the remaining diplomates (approximately 275).

c. Distributing the Validation Survey

Castle will prepare the survey instrument for web-based access. Respondents may complete the survey at any time from any computer with Internet access. The survey will be accessed through a specific URL address provided to the selected survey participants via email. For verification purposes, Castle will provide the selected survey participants with a unique identification number, which must be entered to complete the survey.

Castle will request from ACPV a list of the names and email addresses of the professionals who will participate in the online survey. Castle will email identified participants regarding the survey and will provide a link to the survey page within the email message. The email message will originate from Castle, but the sender information will be recognizable to participants (e.g., ACPV@castleworldwide.com). An identification code also will be provided, ensuring that participants submit only one response, and that all participants are valid respondents selected by ACPV. Participants

will be asked to respond within approximately four weeks. Castle will monitor the online response and will follow up electronically with participants who have not responded.

Participants in the online survey either will click on the link within the email message or log onto the Internet and type in the URL address to reach the survey. The survey is designed for ease of use by the participants, and operates as follows:

- **Step One:** A login screen with instructions will appear, and participants will enter their individual user name and password exactly as provided in the email message.
- **Step Two:** Participants will complete the demographic information, providing Castle with the information necessary to ensure that professionals working in various settings with differing backgrounds are represented in the data collection.
- **Step Three:** Participants may review a section containing definitions for terms used throughout the survey.
- **Step Four:** Participants will review the domains that define the duties of poultry veterinarians. Respondents will rate each domain according to the validation scales used by the job analysis panel, and participants will be made aware that their ratings must pertain to a minimally-competent professional.
- **Step Five:** Participants will be asked to review the task statements for competent performance in each domain, and will rate each task statement according to the validation scales provided.

Participants will be able to click on a “Help” section at any time during completion of the survey. The “Help” text provides assistance with user issues, technical issues, and definition of terms. In addition, Castle’s customer support staff is available weekdays between 8:30 a.m. to 5:30 p.m. Eastern Time, excluding holidays, if participants need assistance with the survey.

As surveys are completed, Castle will compile and analyze the results. At this time, Castle will assess the response rate and report results to ACPV. If the survey response rate is too low, Castle will discuss solutions to the problem with ACPV. Depending on the response rate, Castle may recommend mailing paper surveys, conducting follow-up telephone calls, or sending reminder emails or postcards to the participants who have not responded. At the close of the response deadline, Castle will begin analyzing the survey data. Castle will conduct a full analysis of the survey data, as described below.

d. Analyzing Validation Survey Results

While members of the job analysis panel are considered subject matter experts, it is possible that their perception of the field is different from many practitioners. For this reason, it is important that survey respondents validate the panel's delineation of competencies. In order to validate the competencies, Castle will analyze survey results to determine whether survey respondents evaluate the task statements in the same manner as the job analysis panel.

The data analysis will begin with a summary of the demographic information in order to provide an accurate description of the respondent population. This descriptive analysis will separate the respondent population according to such variables as job setting, years of experience, education level, region, ethnicity, and gender. Castle will calculate the common measures of central tendency and dispersion to describe the distributions obtained for each variable of the study as a whole and for a variety of groupings.

Castle then will compare the respondents' evaluations of the major performance domains and task statements to those obtained from the job analysis panel. This analysis will compare the average ratings from the different groups and subgroups, as defined in the demographic survey, for all domains and task statements. If the respondents' and the panel's evaluations are roughly parallel, then one can assume that the job analysis as prepared by the panel is a valid assessment of the profession. Castle generally considers views to be comparable if the average response of the panel is within plus or minus one scale unit of the average response of survey respondents. During this phase of analysis, test specifications will be derived from a combination of the respondents' importance, frequency, and criticality ratings (see Constructing the Test Specifications below). Castle then will provide tables of inter-correlations for all domains and task statements (on all scales utilized) for the survey sample as a whole.

Next, Castle will analyze responses to determine whether the respondents' status on a demographic variable affected their response. Castle will analyze any differences that exist among respondents according to such factors as experience, education level, geographical region, etc. Castle will conduct an analysis to detect any differences in task evaluation. Castle will rank tasks according to their ability to discriminate between experience levels, educational backgrounds, and other variables of interest, and will recommend decision trees by which tasks may be evaluated for possible elimination.

Castle will summarize the data with tables, graphs, and other appropriate devices, offering conservative interpretations for ACPV's consideration. The analyses will be organized by domain and task to facilitate examination development activities. After a complete analysis of the survey results, Castle will prepare a full report for ACPV. Castle then will work with ACPV and the job analysis panel to incorporate any changes recommended as a result of the survey.

e. Constructing the Test Specifications

The test specifications (or examination blueprint) are created by converting the scale ratings for each domain and task into percentages. Combining these ratings provides a practical method of taking into account the summative judgments that these values represent and ensures that tasks are weighted appropriately on the examination. These percentages then can be used to determine the exact number of questions that should appear on the examination for each domain and task. This technique ensures a strong link between the test specifications and the job analysis study and provides content validity evidence for the examination. A sample examination blueprint can be found in Appendix A.

During the analysis of survey results, Castle will evaluate the knowledge and skills identified in the job analysis to determine the most appropriate testing format(s). Castle is experienced in developing a wide variety of examination formats including written multiple-choice, focused testlet multiple-choice, written simulation, design, oral, and practical examinations.

f. Preparing the Final Report

After a complete analysis of the survey results, Castle will work with ACPV to incorporate any changes recommended as a result of the survey. Castle then will prepare a draft report for ACPV's review. Following ACPV's review, Castle will incorporate any modifications and will prepare the final job analysis report.

The final job analysis report will include a detailed description of the methodology used in conducting the study and developing the test specifications. The final report will provide demographic summary information in order to accurately describe the respondent population. A comprehensive interpretation of the survey results will be provided in the text of the report, and summary statistics will be depicted graphically in a clear and concise format. Castle will summarize the data with tables, graphs, and other appropriate devices, offering conservative interpretations for ACPV's consideration. The analyses will be organized by domain and task to facilitate examination development activities. The full classification system and the test specifications will be contained in the final job analysis report.

II. Proposed Project Timeline

Castle will enforce strict quality control of the job analysis through our Enterprise Project Management System, which integrates all departmental responsibilities and project deliverables. The EPM system allows Castle to communicate project objectives, key milestones, billing information, and project phase deliverables clearly and effectively to ACPV.

Upon contract award, Castle will confer with ACPV to finalize the project schedule. ACPV will receive the Project Management Summary, which provides detailed information regarding the planned tasks, outputs, projected start and finish dates, project team, and billing for all project work. The Project Management Summary annotates the project plan and provides an across-the-board summary of the project’s scope by organizing project phases, task outputs, and project milestones in levels of descending order. The EPM system measures and tracks all project deliverables effectively and allows both Castle and ACPV to identify potential issues proactively, make informed decisions, and improve operational efficiencies.

The following timeline is merely suggested, and Castle will work with ACPV to develop the final project work plan through the Enterprise Project Management system upon contract award. Responsibilities of ACPV are designated in italics. Castle’s ability to meet the following timeline is contingent upon ACPV’s ability to comply with the deadlines.

| Task | Date |
|--|-----------------------|
| Contract awarded | by April 30, 2012 |
| Contract signed | by May 14, 2012 |
| Castle confers with ACPV to outline the specific meeting dates and schedule associated with the job analysis..... | late May 2012 |
| Job Analysis Study: | |
| Castle psychometrician provides ACPV with consultation regarding the selection of subject matter experts for the Job Analysis Panel..... | early June 2012 |
| <i>ACPV provides Castle with background information on the profession.</i> | mid June 2012 |
| <i>ACPV recruits 8-12 subject matter experts to serve on the Job Analysis Panel</i> | mid June 2012 |
| Castle psychometrician conducts a preliminary review of the profession | mid to late June 2012 |
| Castle prepares and distributes instructional materials to the Job Analysis Panel | mid July 2012 |
| Castle facilitates a three-day meeting with the Job Analysis Panel to delineate and validate the primary domains, task statements, and related knowledge and skills of poultry veterinarians | late July 2012 |
| Castle prepares the classification system of domains, task statements, and related knowledge and skills and submits the document to ACPV for review and approval..... | early August 2012 |
| <i>ACPV reviews the classification system and provides Castle with any revisions.</i> | mid August 2012 |

| | |
|---|---------------------------|
| Castle prepares and submits the survey content to ACPV for review and approval..... | late August 2012 |
| <i>ACPV provides any revisions to the survey content and provides email addresses for validation survey participants.</i> | early September 2012 |
| Castle loads the survey for online access. | mid September 2012 |
| <i>ACPV reviews the online survey and provides Castle with any revisions.</i> | late September 2012 |
| Castle makes final revisions to the online survey. | early October 2012 |
| Castle issues an email notice to survey participants with a link to the survey..... | mid October 2012 |
| Castle sends a reminder electronic message to participants who have not responded | late October 2012 |
| Online validation survey response deadline | mid November 2012 |
| Castle compiles, verifies, and analyzes survey results..... | mid to late November 2012 |
| Castle submits the preliminary survey results and proposed test specifications to ACPV for review/approval..... | early December 2012 |
| <i>ACPV provides approval of the test specifications.</i> | mid December 2012 |
| Castle submits the final Job Analysis report with the full classification system and test specifications..... | late December 2012 |

Note: Based on availability, Castle is pleased to offer ACPV the use of our on-site training/classroom at no charge to conduct the job analysis meeting. Castle is located in Morrisville, North Carolina, in the center of the nationally-recognized research and development community of the Research Triangle Park (RTP). Also known as the Triangle, RTP is made up of the cities of Raleigh, Durham, and Chapel Hill. Castle’s offices are conveniently located off Interstate-40, within minutes of Raleigh-Durham International Airport (RDU) and a variety of hotels. Many of the local hotels provide free shuttle service to Castle’s offices. Recently, Raleigh was voted the “best place to do business” by Forbes magazine, and business costs in Raleigh are 13% below the national average.

III. Corporate Qualifications

A. Experience

Castle Worldwide was incorporated in the state of North Carolina in 1987, and has earned a national reputation for excellence in job analysis, examination development, and test administration services. Castle has developed hundreds of content-valid, reliable examinations since our founding. We develop and administer certification and licensure examinations for highly-respected national and international clients, and Castle assists many of our clients in achieving and maintaining NCCA, ANSI, and ABSNC accreditation. Castle offers ACPV more than 25 years of experience in developing, successfully launching, and managing large high-stakes credentialing programs. Castle is well known for our quality high-stakes testing programs, flexible technological solutions, and superior customer service.

As a full-service testing company, Castle offers a broad array of products and services designed to meet the varied needs of business, educational, government, and professional organizations. Some of our specialized products and services include:

- Psychometric consultation.
- Job/practice analysis and role delineation studies.
- Item writer training and workshops, both in-person and through Castle's secure online test development system.
 - Written multiple-choice test development
 - Written simulation test development
 - Oral and practical test development
- Test administration. Castle maintains a national and international network of comfortable, consistent testing facilities and trained proctors for both Internet-based and paper-based administrations.
 - Secure Internet-based test delivery to Castle's facilities.
 - Secure Internet-based test delivery to client's facilities or third parties.
 - Paper-based delivery.
- Application/candidate handbook development.
- Application processing and eligibility determination.
- Candidate registration and scheduling, both online and paper-based.
- Examination scoring and diagnostic score reporting.
- Examination equating and statistical analysis of examination results.
- Candidate diagnostic reports and certificates.
- Membership services such as newsletters, study guides, and online job tests.
- Continuing education services such as renewal notices, application processing, and online training courses.
- Credentialing management systems, which are custom-developed, secure online access systems that manage the certification process from initial application through certification renewal.

Castle distinguishes itself from competitors through our merger of psychometric expertise and technological capabilities. Castle continually monitors the advancements made in the testing profession in order to provide our clients with the best products and services available to meet their individual needs. Castle's psychometric and information technology staff members stay abreast of trends in the testing environment through journals, conferences, personal research, and participation in professional

associations. Castle is committed to maintaining the psychometric integrity of the examination program while applying cost-effective technological solutions to the development and delivery processes. For example, Castle offers our clients the following fully integrated web-based system, which enhances convenience and accessibility while reducing costs associated with test development and delivery:

- Online item development (I-DEV). I-DEV allows subject matter experts to write, review, validate, and enter passing point determination data for new examination items using secure online access from the convenience of their home or office.
- Item banking (I-BANK). Castle's item banking system is used to assemble examinations according to the test blueprint and statistical performance data. The system maintains all validation data, references, history of use, and statistical data on each item.
- Online registration/scheduling (I-REG). Candidates may complete applications and request testing sessions through Castle's online registration and scheduling system. Automatic eligibility determination may be incorporated when supporting documentation is not required.
- Secure online (Internet-based) test delivery through Castle's Proctored Assessment System (PASS). PASS is a secure and extremely flexible system that can deliver examinations to virtually any proctored facility, including our client's education and training partners.
- Scoring/statistical analysis systems. Scoring and registration are integrated for accurate score reporting, and item performance data are maintained on each uniquely identified examination item.

Castle's offices are located in the center of the nationally recognized research and development community of the Research Triangle Park. Our proximity to Duke University, the University of North Carolina at Chapel Hill, North Carolina State University, Thurstone Psychometric Lab, and SAS Institute gives us access to experts on virtually any topic in tests and measurement as well as hardware and software support.

B. Sample Client List

Castle has provided psychometric services (job analysis/role delineation, test development, test administration, scoring, reporting, or statistical analysis) for the following sample of clients. Organizations accredited by NCCA, ANSI, and/or ABNS are denoted with an asterisk (*).

- American Board of Certification for Gastroenterology Nurses (ABCGN)*
- American Academy of HIV Medicine (AAHIVM)
- American Board of Industrial Hygiene (ABIH)*
- American Board of Ophthalmology (ABO)
- American Clinical Board of Nutrition (ACBN)*
- American Council on Exercise (ACE)*
- American Healthcare Radiology Administrators (AHRA)
- American Land Title Association/Land Title Institute (ALTA/LTI)
- American Nurses Credentialing Center (ANCC)*
- American Registry for Diagnostic Medical Sonography (ARDMS)*
- Associated Locksmiths of America (ALOA)
- Association of Image Consultants International (AICI)
- Athletic Equipment Managers' Association (AEMA)
- Board of Certification for the Athletic Trainer (BOC)*
- Board of Certified Safety Professionals (BCSP)*
- Board of Laser Safety (BLS)
- Building Security Council (BSC)

- California Council for Interior Design Certification (CCIDC)
- Certification Commission for Healthcare Interpreters (CCHI)
- Certification Commission of the National Association Medical Staff Services (CCN)*
- Certification of Disability Management Specialists Commission (CDMSC)*
- Certified Fund Raising Executives (CFRE)*
- Child Life Council (CLC)
- Clinical Nutrition Certification Board (CNCB)
- College of Healthcare Information Management Executives (CHIME)
- Connecticut Department of Environmental Protection (CT DEP)
- Corporate Housing Providers Association (CHPA)
- Council on Certification of Health, Environmental and Safety Technologies (CCHEST)*
- Federal Seminars
- The Instrumentation, Systems, and Automation Society (ISA)
- International Association of Forensic Nurses (IAFN)
- International Association of Information and Data Quality (IAIDQ)
- International Society of Mine Safety Professionals (ISMSP)
- Licensing Executives Society (LES)
- Medical Representatives Certification Commission (MRCC)
- Ministry of Community Safety and Correctional Services – Ontario (MCSCS)
- National Apartment Association Education Institute (NAAEI)
- National Association of Boards of Pharmacy (NABP)
- National Association for Practical Nurse Education and Service, Inc. (NAPNES)
- National Board for Certification in Occupational Therapy (NBCOT)*
- National Board of Certification and Recertification of Nurse Anesthetists (NBCRNA)*
- National Concrete Masonry Association (NCMA)
- National Council of Examiners for Engineering and Surveying (NCEES)
- National Council on Interpreting/Registry of Interpreters for the Deaf (NCI/RID)
- National Examining Board for Ocularists (NEBO)*
- National Indian Child Welfare Association (NICWA)
- National Kitchen and Bath Association (NKBA)
- National Pork Board (NPB)
- National Propane Gas Association (NPGA)
- National Retail Federation Foundation (NRFF)
- National Work Readiness Council (NWRC)
- New York State Education Department (NYSED)
- North Carolina Community College System (NCCCS)
- North Carolina Speech, Hearing, and Language Association (NCSHLA)
- Pilates Method Alliance (PMA)
- Regulatory Affairs Professionals Society (RAPS)
- Rehabilitative Nurses Credentialing Board (RNCB)*
- Security Traders Association (STA)
- Stewart Title Guaranty Company (STGC)
- Tire Industry Association (TIA)
- Transportation Professionals Certification Board (TPCB)*
- Travel Goods Association (TGA)
- U.S. Navy Office of Alcoholism and Other Drug Abuse (US NAODA)
- Wound, Ostomy and Continence Nursing Certification Board (WOCNCB)*

C. Project Staff

The specific staff members dedicated to the job analysis study will be determined upon contract award; however, the following project staff members are proposed. Castle responds to our clients' needs with a full team effort, and the combined experience and expertise of the entire Castle staff is available to meet our clients' current as well as future needs. Complete personnel résumés can be found in Appendix B.

Stephen B. Johnson, Ph.D. – Senior Psychometrician

Dr. Stephen Johnson is as a senior psychometrician with many years of experience and strong skills in quantitative and qualitative data collection, analysis, and reporting. He is a talented facilitator of job analysis/role delineation studies and is experienced in conducting standard setting workshops, using a variety of established methods. Dr. Johnson has conducted job analysis studies for a variety of professions, including personal trainers, group fitness instructors, medical services professionals, and control systems engineers.

Dr. Johnson is particularly skilled at bringing together disparate datasets to undertake in-depth and complex analysis for both educational trends and program evaluations. He is very capable in the use of statistical modeling tools such as IRT, Classical Test Theory, Structural Equation Modeling, and Hierarchical Linear Modeling. His strong evaluation skills focus on the development of validity evidence through both quantitative methods and qualitative techniques, such as content analysis. In addition, Dr. Johnson is skilled in thematic mapping, grounded theory, equating, and other psychometric studies.

During Dr. Johnson's professional career, he has gained extensive experience in research design, testing, statistics, measurement, and computer networks. He has worked in business, government, K-12, and tertiary education, in the U.S., U.K., and Australia. Dr. Johnson holds a Ph.D. from the University of Western Australia, where his studies focused on a variety of skills including tests and measurement, advanced statistical methods, and research design. He earned a Bachelor's degree in Psychology, an Honor's degree in Education, and a teaching diploma. He has worked in the field of educational psychology and measurement since 1992.

Meredith Kuny, B.A. – Senior Editor

Ms. Meredith Kuny and her editorial staff will assist in preparing the classification system, the validation survey, and the final job analysis report. Ms. Kuny is an educated and experienced writer, who has taught Honors English courses in several high schools. Ms. Kuny is highly skilled in writing and has several years of experience in academic editing and tutoring. Ms. Kuny received her bachelor's degree in English from Elon University in North Carolina.

D. References

The following clients are provided as references; however, we encourage ACPV to contact any of our clients to evaluate Castle's experience in providing sound psychometric consultation and exceptional customer service, while meeting the project schedule within budget.

▪ **Canadian Council of Human Resources Associations (CCHRA)**

- Contract period: 2009 to present
- Conducted a comprehensive Practice Analysis Study of the Canadian Human Resources Professional

Reference:

William Palamar
Executive Director
Canadian Council of Human Resources Associations
150 Metcalfe Street, Suite 603
Ottawa, Ontario K2P 1P1
(613) 567-2477 x 223 (telephone)
b.palamar@cchra-ccarh.ca (electronic mail)

Note: The practice analysis was conducted under Cheryl D. Lamerson, who is now retired.

▪ **Electronic Transactions Association (ETA)**

- Contract period: 2009 to present
- Conducted job analysis study for electronic transactions professionals
- Provide psychometric consultation and leadership

Reference:

Ms. Rori Ferensic
Director, Education and Professional Development
Electronic Transactions Association
1101 16th Street, NW, Suite 402
Washington, D.C. 20036301-628-5000
(202) 828-2635 x 205 (telephone)
rori.ferensic@electran.org (electronic mail)

▪ **National Apartment Association Education Institute**

- Contract period – 2007 to present
- Conduct needs assessment of the Certified Apartment Property Supervisor
- Conduct job analysis study and skill standards of the Certified Apartment Maintenance Technician
- Conduct job analysis and skill standards development for the Certified Apartment Manager
- Curriculum content design and development of skill standards for the National Apartment Leasing Professional course
- Develop examinations for the CAPS and CAMT programs
- Internet-based delivery of the NAAEI examinations

Reference:

Ms. Shana Treger
Director, Instructional Design
National Apartment Association Education Institute
4300 Wilson Boulevard, Suite 400
Arlington VA 22203
(703) 797-0608 (telephone)
shana@naahq.org (electronic mail)

E. Philosophy and Unique Strengths

Improving lives through creative solutions. Castle approaches our relationship with client organizations as a close partnership, offering friendly, competent service to both candidates and the certifying organizations' staff and board members. Castle genuinely believes that this partnership benefits the lives of many individuals. Castle's staff members are committed to providing quality products and services because we recognize that our work impacts the credentialing organization, the certification candidates, and the greater public that they serve.

While many testing companies apply the same psychometric methodologies to developing and maintaining high-stakes examination programs, Castle offers ACPV the following unique strengths.

- ***Psychometric Expertise.*** Castle offers ACPV the experience gained through years of service in leadership positions with the American National Standards Institute (ANSI); the Institute for Credentialing Excellence (ICE), formerly the National Organization for Competency Assurance (NOCA); the National Commission for Certifying Agencies (NCCA); and the Council on Licensure, Enforcement, and Regulation (CLEAR). Castle's psychometric expertise is widely recognized and has been solicited for leading publications such as *Certification: The ICE Handbook* and the revised *Joint Technical Standards for Educational and Psychological Testing* (AERA, APA, NCME 1999).
- ***Flexibility.*** Castle tailors our services to meet the specific needs of each client and is extremely responsive. We continually evaluate our clients' programs to ensure that the most efficient and cost-effective solutions are provided.
- ***Customer Service.*** Castle is exceptionally attentive to both client organizations and their candidates. We believe our strength in this area can be attested to by the long-term relationships Castle has maintained with our existing clients.
- ***Test Delivery.*** Castle offers more than 490 computer-based testing locations throughout the United States and Canada and more than 400 international sites. The testing centers are located in training classrooms, universities, and community colleges. Castle has built one of the most diversified networks in the industry, which protects our clients from any disruption in service that may occur in the event of site closure by a single channel of test sites.
- ***Highly Qualified and Friendly Staff.*** Castle recruits and retains highly qualified staff in psychometrics, information technology, test administration and scoring, publications/editing, account management, and financial management. Castle's outstanding staff members are

committed to the objectives of certification testing and offer unparalleled customer service. Castle's staff members are dedicated to maintaining the psychometric integrity of the examination program while applying cost-effective solutions to the development and delivery processes. Most Castle staff members have been with the company for many years. The staff members are courteous and helpful because we believe our clients are partners. We value the trust that our clients have placed in us.

We believe our psychometric expertise and strong customer service are the most compelling reasons for ACPV to partner with Castle on the job analysis of poultry veterinarians. However, since our clients are the ultimate judges of our abilities, we would like to provide a sample of testimonials that we have received over the years.

"The NRF Foundation is widely recognized as the provider of professional standards in customer service, and we believe that the level of customer service which Castle provides to the Foundation and its candidates strongly affirms these professional standards. We have found our interaction with all Castle employees to be exceptionally responsive, courteous, and knowledgeable." *Katherine Mance – Executive Director, NRF Foundation*

"Instead of selling us an 'off-the-shelf' solution, Castle works hard with us to develop a certification program that is right for our particular needs." *Denise Fandel, MS, ATC – Executive Director, Board of Certification for the Athletic Trainer*

"Castle reviewed, clarified, and streamlined our forms and processes while serving as a professional, confident, and complete partner in their analysis and support of our transition to a new vendor and new examination administration method." *Dana McInturff, CPA, CFE - Executive Director, Washington State Board of Accountancy*

"When we were looking for an online testing service three years ago, we investigated several companies. We found something far better with Castle. We are a satisfied client of Castle and rely on the solid expertise and skill of the Castle staff. Castle is much more like a partner, than just a testing vendor." *Helen M. Larson – Executive Director, National Association for Practical Nurse Education and Service, Inc.*

"We accomplished more in one year with Castle than in 13 years with our old testing vendor." *Iris Rush, CAE – Vice President of Administration, Regulatory Affairs Professionals Society*

IV. Cost Proposal

A. Job Analysis Study

- Castle provides consultation and leadership to ACPV in selecting appropriate subject matter experts to serve on the job analysis panel (8 to 12 subject matter experts anticipated).
- Castle conducts a preliminary analysis of the profession including a review of job descriptions and job-related literature.
- Castle develops and distributes instructional materials to the ACPV-appointed job analysis panel.
- Castle facilitates a three-day meeting with the ACPV-appointed job analysis panel in order to define the target audience and to delineate and validate the primary domains, tasks, and related knowledge and skills required of poultry veterinarians.
- Castle prepares a classification system of the domains, tasks, knowledge and skills of poultry veterinarians.
- Castle prepares the online survey instrument.
- Castle loads the survey for online access.
- Castle issues an email notice regarding the validation survey to survey participants.
- Castle sends a reminder electronic message to survey participants.
- Castle collects, compiles, and analyzes the survey response data.
- Castle develops proposed test specifications for the examination based on the validation data provided by the survey respondents and submits the preliminary results to ACPV for review/approval.
- Castle prepares a comprehensive job analysis report, which includes a description of the methodology, an analysis and interpretation of the survey results, the examination blueprint and test format recommendations, and the full classification system of domains, tasks, knowledge, and skills of poultry veterinarians.

◆◆◆**Total A:**..... **\$25,500**

Notes:

- For all in-person meetings, ACPV will be responsible for the meeting facility (if the meeting is not held at Castle's headquarters), any honoraria, and reasonable travel-related expenses for Castle's staff and ACPV-appointed subject matter experts.
- If additional in-person meeting days are required to complete the scope of work, the cost will be \$2,500 per staff member per day plus reasonable travel expenses. If follow-up web-based meetings are required, an additional fee will apply of \$275 per hour, billed in hourly increments. ACPV will be responsible for all telephone fees associated with any web-based meetings.
- Based on availability, Castle is pleased to offer ACPV the use of our on-site training/classroom at no charge to conduct the job analysis meeting (ACPV is responsible for providing any refreshments/catering).
- If ACPV changes the scope of work, Castle reserves the right to adjust the above fees.

Appendix A:

Sample Examination Blueprint

Sample Examination Blueprint

| Domain I: Human Resource Management | Classification 01000 | Test Specifications 35 |
|--|-------------------------|---------------------------|
| <i>Task 1: Employ the necessary level of staff by developing an effective recruitment and staffing program to support the mission of the organization.</i> | 010100 | 14 |
| Knowledge of: | | |
| a. Staff recruitment techniques | 010101 | |
| b. Current laws relating to hiring practices (including immigration) | 010102 | |
| c. Scope of practice and competencies needed to perform various jobs | 010103 | |
| d. Market data relating to compensation and benefits | 010104 | |
| e. Interviewing procedures | 010105 | |
| f. Oral communication technologies | 010106 | |
| g. Organization's needs, patient volumes, principles of human resource management techniques | 010107 | |
| Skill in: | | |
| a. Communicating using interpersonal skills | 010114 | |
| b. Communicating using written documents | 010115 | |
| c. Selecting appropriate trade journals, Web sites, and other places to advertise for personnel | 010116 | |
| d. Selling the organization to prospective staff | 010117 | |
| e. Negotiating | 010118 | |
| f. Assessing potential job candidates in comparison to job requirements | 010119 | |
| g. Practicing diversity and non-discrimination | 010120 | |
| <i>Task 2: Implement a retention program using proactive interviews and surveys to understand employee needs.</i> | 010200 | 11 |
| Knowledge of: | | |
| a. Motivation techniques relating to employment | 010201 | |
| b. Employee professional and personal needs and desires | 010202 | |
| Skill in: | | |
| a. Perceiving employee morale | 010203 | |
| b. Developing a complete library of relevant books and motivational tapes | 010204 | |
| <i>Task 3: Promote interaction among team members and other stakeholders in a professional and cooperative manner by respecting personal, and cultural differences in order to ensure a collaborative environment.</i> | 010300 | 10 |
| Knowledge of: | | |
| a. Motivation techniques relating to employment | 010301 | |

Appendix B:

Personnel Résumés



STEPHEN B. JOHNSON, Ph.D.

Castle Worldwide, Inc. ❖ 900 Perimeter Park Drive, Suite G ❖
Morrisville, North Carolina 27560
919.572.6880 *telephone* ❖ 919.361.2426 *fax* ❖
sjohnson@castleworldwide.com *email*

EDUCATION

University of Western Australia ❖ Perth, Western Australia

Degree: Doctorate ❖ Dissertation Title: *Adolescent decision-making about education, training and work*

University of Western Australia ❖ Perth, Western Australia

Degree: Bachelor of Education (1st Class Honors) ❖ Dissertation Title: *Self-verification, self-enhancement: The effects of evaluative feedback.*

University of Western Australia ❖ Perth, Western Australia

Graduate Diploma of Education

University of Western Australia ❖ Perth, Western Australia

Degree: Bachelor of Psychology

EMPLOYMENT HISTORY

Castle Worldwide, Inc. ❖ Morrisville, North Carolina

Senior Psychometrician

Serve as project manager for clients' certification and licensure testing accounts. Determine project work flow, train staff, write reports, and prepare professional presentations. Perform job analysis/role delineation activities. Lead item development activities for clients. Perform statistical analyses after examination administrations. Counsel clients on the continued maintenance and reliability of their certification program.

RPM Data ❖ Greensboro, North Carolina

Principal

RPM Data provides research, evaluation, and analysis services in education, psychology, science and technology, including the development and preparation of business and industry analyses. Developed, managed, and analyzed databases of different sizes and complexity; conducted projects involving interviews, surveys, and focus groups; conducted standard setting panels; and wrote research plans, technical reports, letters, memos and final reports for public review. Principal Investigator for *Student to Workforce*, a project to assess the characteristics of community college trained biotechnology students, the challenges they face in their programs, and the economic gains they, and the community, achieve as a result of attending a community college. Data collected and analyzed for the *Student to Workforce* project include student and employer interviews and surveys, and information collected by the community college system.

Federation of State Boards of Physical Therapy ❖ Alexandria, Virginia

Psychometrician III

Responsible for validity and reliability research for the National Physical Therapy Licensure Examination and other exams provided by the FSBPT. Responsible for identifying and initiating improvements in all phases of exam development and internal reporting. Led exam and item development teams. Undertook analysis of test bias, test speededness and other issues of concern to the FSBPT. Developed and delivered psychometric-related presentations and training and worked with item and test development panels.

Guilford County Schools, North Carolina ❖ Greensboro, North Carolina

Program Specialist, Office of Assessment and Evaluation

Managed and analyzed data for a 60,000-student district and for the 114 individual schools in the district. Supported schools in implementing evaluation programs. Managed, planned, conducted, and reported research and evaluation studies of interest to schools and central administration. Directed graduate students in the planning, implementation, analysis and reporting of research and evaluation studies. Initiated and supported the development and implementation of evaluation or research designs, data collection instruments, and analysis of data. Collected, analyzed and reported data from evaluation or research studies including conducting interviews; accessing local, state, national and international databases; administering surveys and other data collection techniques. Prepared evaluation plans, technical reports, letters, memos and final reports. Implemented requirements for the State accountability legislation (ABCs Program). Prepared datasets and information for the North Carolina Department of Public Instruction.

Queens University and the University of Ulster ❖ Belfast, Northern Ireland

Research Officer, Centre for Research on Higher Education

Managed and accessed local and national databases on Higher Education in the United Kingdom and Northern Ireland. Helped plan and organize a regional research symposium on school-to-work issues. Provided statistical and research advice to graduate students and faculty. Supported and implemented research projects as required. Developed independent research program on school-to-work.

The University of Western Australia ❖ Perth, Western Australia

Lecturer in Educational Psychology, School of Education

Developed course curricula, exams, seminar presentations, weekly lectures, and supervised student field exercises for a compulsory full year unit for the Diploma of Teaching that included: cognitive development; learning theories; language in the classroom; and, diversity in the classroom.

RESEARCH AND TECHNOLOGY SKILLS

Statistical analysis skills include Classical Testing Theory, Item Response Theory, Sampling Theory, General Linear Modeling, Structural Equation Modeling, Log-linear Analysis, Hierarchical Linear Modeling, Geographic Data Mapping, and Meta Analysis. Research skills include: interviewing; survey design and analysis; focus groups; standard setting panels; technical report writing; staff recruitment and training; policy analysis; and program evaluation.

Capable in the use and operation of: Information Communication Technology networks; network and desktop security; video, web, and audio conferencing; website design; Internet communications; web-based survey and research tools; statistical and reporting programs; and database design and management.

Proficient in the advanced use of SPSS, HLM, Amos, Remark, EndNote (bibliographic software), Microsoft Access, Excel, Word, ArcGIS (a Geographic Information System program) and PowerPoint. Also familiar with Winstep, SAS, BiLog, Multilog, Minitab, NUD*IST (qualitative analysis software), and web-based survey and research tools.

SELECTED RESEARCH AND PRESENTATIONS

- Haynie, G., Johnson, S., Scudder, D. (May 2003). *Graduation Rates: A Study of the 1995 9th Grade Cohort*. E&R Report 00.03.07. Available online at http://www.wcpss.net/evaluation-research/reports/2003/0307_grad_rates_ninthgrade.pdf
- Johnson, S, Dulaney, C. & Banks, K.. (February, 2000). Measurement error. E&R Report 00.15. Available online at http://www.wcpss.net/evaluation-research/reports/2000/mment_error.pdf
- Johnson, S. B. (1998, April). *Unintended consequences of School Improvement Plans*. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA. (ERIC Document Reproduction Service No. ED 421 782).
- Ward, M. S., & Johnson, S.B. (1998, April). *The Relationship Between Poverty and Status on the North Carolina ABCs School Accountability Program*. Paper presented at the annual meeting of the North Carolina Association for Research in Education, Greensboro, NC.
- Mackinnon-Lewis, C., Starnes, R., Volling, B., & Johnson, S. (1997). Perceptions of parenting as predictors of boys' sibling and peer relationships. *Developmental Psychology*, 33, 1024-1032.
- Johnson, S.B., Osborne, R.D. (1997) Citation analysis and Northern Ireland: A quality measure? *The Quarterly Journal of the International Association of Universities*, Vol. 10, Issue 3-4, 297-313.

PROFESSIONAL ASSOCIATIONS AND MEMBERSHIPS

- American Educational Research Association (AERA)
- American Psychological Association (APA)
- National Council on Measurement in Education.



MEREDITH KUNY

Castle Worldwide, Inc. ❖ 900 Perimeter Park Drive, Suite G ❖
Morrisville, North Carolina 27560
919.572.6880 *telephone* ❖ 919.361.2426 *fax* ❖
mkuny@castleworldwide.com *email*

EDUCATION

Elon University ❖ Elon, North Carolina

Degree: Bachelor of Arts ❖ Specialization in English with concentration in teaching licensure and a minor in theatre arts

EMPLOYMENT HISTORY

Castle Worldwide, Inc. ❖ Morrisville, North Carolina

Editor

Responsible for assembling and editing examinations, managing examination item banks, preparing survey instruments, assisting in writing and editing project reports and preparing a variety of national publications including newsletters, trade journals, and brochures.

Johnson Pond Learning Center ❖ Fuquay-Varina, North Carolina

Teacher

Taught class of two-year-olds.

Western Harnett High School ❖ Lillington, North Carolina

High School English/Theatre Arts Teacher

Taught English I, English II, and Theatre Arts I

Carachipampa Christian School ❖ Cochabamba, Bolivia

High School English Teacher

Taught English to all students in grades 8-12 (approx. 75 students) and responsible for 7th grade homeroom class.

Eastern Guilford High School ❖ Gibsonville, North Carolina

Student Teacher

Taught 4 classes of Honors Freshmen English and 1 class of College Prep Junior English

Burlington Christian Academy ❖ Burlington, North Carolina

Childcare Provider

Cared for and taught children in an after-school program. Served as a camp counselor for summer day camp. Worked with children varying in ages from 3-13.

Elon College Writing Center ❖ Elon, North Carolina

English Tutor

Assisted college students in writing and revising academic papers.