AAVMC FACULTY DEVELOPMENT NEEDS ASSESSMENT – 2019

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INTRODUCTION

During 2019, the Association of American Veterinary Medical Colleges (AAVMC) engaged in a strategic planning exercise with the intent of updating the existing strategic framework developed in 2008. Five major goals emerged from this process:

1. Serve as the thought leader and primary advocate for academic veterinary medicine.
2. Identify, inspire and recruit qualified and diverse applicants who will serve as the future veterinary medical workforce.
3. Build a robust pipeline of future scholars and academic leaders for academic veterinary medicine and support them throughout their careers.
4. Advance teaching and learning to prepare students, faculty and academic staff for professional success in a wide variety of careers.
5. Foster discovery to improve the health and wellbeing of people, animals and the environment.

In pursuit of building a robust pipeline, several strategies were adopted, including the following:

> Provide professional development opportunities to support faculty, academic staff, and administrators in their dual roles as scholars and leaders.

As an initial action step within this strategy, it was decided that the professional leadership development needs assessment survey conducted in 2009[1] should be repeated. As in 2009, to study faculty development needs in AAVMC member institutions, the Association partnered with the Academy for Academic Leadership (AAL) with the objectives of:

- Characterizing the degree of career satisfaction in academic veterinary medicine; and
- Identifying perceived developmental needs to support career growth.

METHODS

Questionnaire Design

Drawing from the 2009 study, a similar survey was developed in collaboration with the leadership team of the AAVMC. The questionnaire included a combination of selected-response items (Likert-type scale) and closed-ended items (yes/no, select one, or all that apply options) that were formatted and divided into nine (9) areas: demographic data, training, current position, job satisfaction, and level of interest in professional development related to teaching, research, career planning, administration, and leadership. In addition, there were several items relating to professional development through AAVMC. Content validity of the questionnaire was established through a review completed by a panel of leaders of the AAVMC.

Data Collection

This study targeted all faculty currently employed at AAVMC member institutions. Based on internal AAVMC data, the total surveyed population size was estimated at 4620.

The survey was created and distributed in electronic format (SurveyMonkey, 2019) during October of 2019. Although web-based surveys generally have lower response rates compared to face-to-face and/or paper surveys, web-based surveys are reportedly more accurate because respondents are less concerned about giving socially acceptable answers, thus providing more honest responses.[2] Additionally, researchers have found that web-based participant responses contain fewer random and systematic errors than other forms of survey responses.[3] A two-wave emailing across four (4) weeks was used to increase the survey response rate. Reminders were sent to those who began and had not completed the survey. A different reminder was sent to those who had not yet started the survey.

Statistical Analyses

Recorded responses were imported and summarized using SPSS, 26.0 (IBM, Inc: Armonk, New York). In this step, internal reliability of the questionnaire was assessed using Cronbach's Alpha and descriptive statistics were generated to compare frequencies/percentages of responses for variables of interest. In addition, Pearson's chi-squared test was used to assess potential differences by gender identity and tenure status 1) across the other demographic and employment variables, and 2) for each job satisfaction and professional development interest level factor of interest. The strong interest in gender identity and tenure status is based on ongoing trends where increasing proportions of faculty 1) identify as female, and 2) are appointed in non-tenure system positions. Although assessing potential differences by ethnicity and race were also of interest, insufficient numbers of respondents identified as Hispanic (ethnicity) and non-white/Caucasian (race) to support robust statistical analysis. Chi-squared statistics were calculated using Minitab 19.2 (Minitab, LLC: State College, Pennsylvania).

RESULTS

A total of 700 responses were received. Of these, 36 indicated they were not currently a faculty member teaching in one of the Veterinary Medicine programs. In addition, 15 did not provide any responses beyond the first item. The overall survey response rate was 14.0% (649/4620). Cronbach's Alpha to assess the internal reliability of the entire instrument was 0.76. The same statistic for each of the respective focus areas within the questionnaire can be found in Table 1.

Descriptive Statistics

1. **Demographics, Training, and Current Position** – Data that describe key characteristics of the respondent population are presented in Tables 2 and 3. Several dimensions warrant mention:

   - Respondent demographics (Table 2)
     - 56.8% identified as female.
     - 90.1% identified as non-Hispanic, and 89.3% as white/Caucasian
     - Nearly 70% were less than 55 years of age

   - Current position (Table 2)
     - Respondents represented 39 different institutions in 9 countries.
     - 28.0% reported more than one MAIN focus for their current position. The greatest single focus reported was clinical care/service (30.4%), followed by teaching (23.3%) and research (10.9%).
     - Approximately 60% reported a rank of associate professor or above.
     - Nearly 50% had been in a faculty role for 10 years or less, and almost 24% greater than 20 years.
     - 41.1% of respondents were in non-tenure track (NTT) positions. Of the remaining 58.9% in the tenure system, 44.9% were tenured (T) and 14.0% were on a tenure track (TT).
     - Over 95% indicated a current full time (>0.8 FTE) appointment, with 68.0% in a clinical department.

   - Training (Table 2)
     - Nearly 88% of respondents hold a DVM or equivalent, and over 44% have a PhD. Most respondents had earned multiple degrees.
     - Nearly 70% had completed specialty clinical training

- Factors impacting the decision to pursue an academic career (Table 3)
  - 88.5% were driven by intellectual curiosity
  - 52.2% were triggered by interest in research
  - 46.8% were influenced by mentoring or a role model
  - 31.8% were attracted by perceived life-style issues or work hours.

2. **Job Satisfaction** – When asked about possible plans to leave/retire, 15.5% (n=92) had contemplated leaving within the next year, 31.8% (n=189) within the next 5 years, and 19% (n=113) within the next 6-10 years (Table 3); 33.8% (n=201) had not contemplated leaving or had no plans to leave within the next 10 years. Of the 66.2% (n=394) that had seriously contemplated leaving/retiring, the main reasons for their consideration include pursuit of work-life balance (49.0%, n=193); retirement (38.8%, n=153); compensation (33.0%, n=130); new challenges (29.4%, n=116); better career advancement (29.3%, n=94); and lack of faculty development (21.8%, n=86).

   Overall satisfaction with current job was found to be quite high (nearly 90%) as 40.9% (n=243) of respondents reported that they were "Very Satisfied" and another 49.0% (n=291) responded that they were "Satisfied" (Table 4). Notably, several specific related factors emerged.

   - Those factors that ranked the highest in satisfaction, as determined by the sum of "Satisfied" and "Very Satisfied" responses that, when combined, included over 80% of respondents, were:
     - Intellectual challenge (91.4% total)
     - Quality of teaching by colleagues (89.5%)
     - Job security (89.3%)
     - Career options (88.9%)
     - Teaching assignments (88.6%)
     - Type of expected research (87.7%)
     - Geographic location (87.0%)
     - Faculty interactions (86.3%)
     - Quality of students (85.2%)
     - Professional growth (84.9%)
     - Quality of clinical practice program (84.9%)
     - Number of students supervised (83.8%)
     - Amount of expected research (81.9%)

   - Factors that were lowest in satisfaction where less than 60% of respondents indicated they were either "Satisfied" or "Very Satisfied", included:
     - Amount of time for service e.g. committee work (56.8%)
     - Amount of time for research (50.6%)
     - Amount of time to write papers/prepare presentations (47.3% total)

3. **Level of Interest in Professional Development for Teaching, Research, Career Planning, Administration, and Leadership** – Data that describe key characteristics related to respondents' interest in professional development for teaching, research, career planning, administration, and leadership are presented in Tables 5-9, respectively. Items in each table are listed in order of highest to lowest levels of interest as determined by the sum of "Moderate Interest" and "High Interest" responses.

   - Overall, professional development in teaching and leadership had the highest levels of interest. Across all items in level of interest in professional development for teaching, the combined moderate and high level of interest median was 78.25% with a range of 56.7%-91.5%. For all items related to professional development for leadership, the combined moderate and high level of interest median was 77.75% with a range of 69.7%-85.0%.

   - Lower levels of overall interest were noted for research, administration, and career planning. Across all items in level of interest in professional development for research, the combined moderate and high level of interest median was 59.8% with a range of 37.6%-75.9%. For all items in level of interest in professional development for administration, the combined moderate and high level of interest median was 61.95% with a range of 42.1%-86.9% and for all items in level of interest in professional development for career planning the combined moderate and high level of interest median was 62.0% with a range of 40.2%-87.0%.

   - The individual items within each professional development category that demonstrated the strongest interest, as determined by a sum of "Moderate Interest" and "High Interest" responses that was greater than 80%, included:
     - Professional development for teaching:
       - Giving feedback (91.5% total)
       - Asking effective questions (90.9%)
       - Fostering self-directed learning (87.2%)
       - Facilitating small group learning (84.5%)
       - Using case-based learning (83.4%)
       - Discovering principles of learning and innovation (83.3%)
       - Teaching in clinical settings (83.3%)
       - Advising students (82.7%)
       - Understanding learning styles (80.8%)
       - Instructional design and course planning (80.1%)
     - Professional development for career planning
       - Learning to negotiate (87.0% total)
       - Managing conflict (84.1%)
       - Providing mentoring (84.0%)
       - Learning to lead/work in teams (81.8%)

    - Working with challenging/difficult people (80.1%)
  - Professional development for administration
    - Fostering innovation and creativity (86.9% total)
    - Enhancing performance and productivity (82.9%)
    - Evaluating and improving the work environment (82.5%)
  - Professional development for leadership
    - Leading change (85.0% total)
    - Strategic thinking (84.9%)
    - Leading teams (82.8%)
    - Leading without authority (80.0%)

- None of the items in professional development for research had a sum of "Moderate Interest" and "High Interest" responses that was greater than 80%. Only two items, Fostering Interprofessional Research Collaboration and Using Tables, Charts, and Graphs to Display Data, had sums of 70% or greater.

- The individual items within each professional development category that demonstrated the lowest level of interest, as determined by a sum of "Moderate Interest" and "High Interest" responses that was less than 50% included:
  - Professional development for research
    - Understanding policies and procedures of the IRB (37.6% total)
    - Designing rating scales and checklists (45.8%)
    - Writing case reports (49.6%)
  - Professional development for career planning
    - Learning tenure-track and non-tenure-track options (40.2% total)
    - Writing career development grants (48.9%)
  - Professional development for administration
    - Leading new employee orientation (42.1% total)
    - Learning the employee grievance process (45.2%)

- None of the items in Professional development for teaching had a sum of "Moderate Interest" and "High Interest" responses that was less than 50%. The lowest items in this category were Managing Online Courses (56.7%), Teaching Psychomotor Skills (59.3%), and Designing Online Courses (59.5%).

4. **Professional Development through AAVMC** – Several questions were asked related to AAVMC professional development programs.

   - A total of 39 respondents (7.4%) had participated in the AAVMC Leadership Academy. Although there was no significant difference when participation was considered by gender identity, analysis by tenure status revealed that tenured faculty were significantly more likely (p=0.000) to have participated.

   - In addition to the AAVMC Leadership Academy, the open-ended question requesting a list of AAVMC professional development programs in which respondents had participated during the past five years included:
     - Primary Care Veterinary Educators (PCVE)
     - Veterinary Educator Collaborative (VEC)
     - Annual Conference
     - Public Policy Fellowship
     - Health and Wellness Summit
     - Competency-Based Veterinary Education (CBVE)
     - Diversity programs

   - When asked (open-ended) about additional suggestions for AAVMC as it considers the Association's role in providing professional development to its members, respondents provided the following:
     - Addressing the needs of clinical faculty (n=8), new faculty (n=7), residents (n=5), non-DVM faculty (n=4) and newly tenured faculty (n=2).
     - Specific topics that were mentioned included wellbeing (n=5), leadership (n=4), mentoring (n=4), research (n=3), and diversity and inclusion (n=3).
     - Comments on delivery of such programs included recommendations for online resources (n=8), reminders that individual institutions provide their own professional development programs (n=6), suggestions for collaboration with other institutions e.g. interprofessional programs (n=5), and suggestions to consider the needs of international institutions/global collaborations (n=4).
     - Challenges and barriers for professional development that were mentioned included lack of awareness of opportunities (n=10), limitations on discretionary faculty time based on workload/clinical caseload (n=8), AAVMC being perceived as too exclusive (n=5), respondents who didn't see the need for professional development (n=3), dissatisfaction with AAVMC (n=3), and structure of academic career pathway/promotion process (n=2).
     - Comments related to broader recruitment/retention challenges included academic salaries, compensation, and educational debt (n=10); competition with private practice and recruitment (n=5); changing trends in academia and society (n=5); concerns with working conditions in academic careers (n=7); work/life balance (n=5); and institutional budgets (n=3).

Chi-squared analysis

Results of Chi-squared analyses to evaluate potential gender- and tenure-based differences in key characteristics of the respondent population are presented in Tables 2 and 3. In overview, responding faculty members who identified as female were significantly:

- Younger
- More likely to be in a non-tenure track position; less likely to be tenured
- More likely to be appointed in a clinical department
- More likely to identify as non-Hispanic
- More likely to hold the rank of assistant professor; less likely to have achieved the rank of professor
- More likely to hold a DVM; less likely to hold a PhD
- More likely to hold specialty board certification
- More likely to have been impacted by a mentor/role model when deciding on an academic career pathway
- More likely to have considered leaving academia based on lifestyle issues/work hours
- Less likely to be considering retirement.

Responding faculty in non-tenure track positions were significantly:

- Less likely to identify as non-Hispanic
- More likely to have clinical care/service as the main focus of their current position
- More likely to hold the rank of assistant professor; less likely to have achieved the rank of professor
- More likely to be appointed in a clinical department
- Less likely to hold a PhD or other doctoral degree
- Less likely to have pursued an academic career based on research interests, but more likely to have been impacted in career choice by family or a friend
- More likely to have contemplated leaving academia within the next year, and more likely to cite educational debt, compensation, and lack of faculty development opportunities as reasons for contemplating leaving.

Results of analyses to assess possible gender- and tenure-based differences in job satisfaction and professional development interests are presented in Tables 10-15. In general, when a significant difference was identified, respondents who identified as female were less satisfied with their current employment situation and were more likely to be interested in professional development than their male counterparts. Tenured respondents were more satisfied with their current employment when a significant difference was detected, and they were generally less likely to be interested in professional development than their non-tenured and non-tenure track counterparts. In general, when significant differences were identified, non-tenure track respondents were more likely to be interested in professional development items for teaching, and tenure-track (non-tenured) respondents were more likely to be interested in professional development items for research.

DISCUSSION

The overall response rate of 14% includes AAVMC representation from 39 member, provisional member, or affiliate member institutions in nine different countries. Of these institutions, 35 are colleges of veterinary medicine accredited by the AVMA Council on Education. Although this is a respectable and informative sample, there is no absolute assurance that it fairly represents all faculty at AAVMC member institutions. Because there was a highly variable number of respondents per institution, the data may well reflect perceptions of need in some colleges and departments to a greater extent than in AAVMC as a whole. These potential limitations should be kept in mind when considering the outcomes of the survey.

The 2018-2019 Comparative Data Report (CDR) compiled by AAVMC[4] includes information on gender, race, and ethnic identities, along with tenure system appointments for faculty at member institutions. When compared to the respondent population via Chi-square goodness-of-fit, the current study was found to include a significant:

- Over-representation of faculty who identify their gender as female
- Over-representation of faculty who identify their ethnicity as Hispanic
- Over-representation of faculty who identify their race as White/Caucasian
- Under-representation of faculty who identify their race as Asian/Asian American
- Over-representation of faculty appointed in the tenure system.

Consequently, results from this study summarized across gender, ethnic, race, and tenure system subgroups should be considered as somewhat biased representations of the entire AAVMC faculty population. Underlying reasons for the disproportionate response rates are not entirely clear, however, interpretations should be accordingly couched as only reliably representative of the respondent population once again.

When compared to the 2009 study:

- A higher percentage of respondents identified as female (56.8%) vs 2009 (42%). Even though the percentage of female respondents is considerably higher than the percentage of female faculty across all AAVMC member institutions (48.9%, CDR[4]), it still lags the percentage of females in the US veterinary medical profession (61.7%, AVMA[5]).

- The percentage of respondents who identified as Hispanic (9.9%) was virtually the same as 2009, which is significantly higher than the

current percentage of Hispanic faculty across all AAVMC member institutions (4.3%, CDR[4]).

- Although the age question was asked a bit differently this time, respondents in the current study appear to be a younger cohort of faculty than in 2009. In the earlier work, 46% of respondents were under 50, while 69.6% of current respondents were under 55.
- Slightly lower multi-mission positions were found in the current study than in 2009 (28% vs. 31%), but a substantially lower proportion of respondents reported a primary focus on research (10.9% vs. 19%).
- In the present study, only 59% of respondents were in tenure-system (tenured or tenure-track) positions vs 64% in 2009.

Having such a strong representation of voices from relatively younger faculty who identify as female provides a solid basis for using the current study as a roadmap for the future.

Other noteworthy findings related to respondents' demographics and employment include (in no particular order):

- As AAVMC strives to enhance diversity, equity, and inclusion as an ongoing strategic priority, the over-representation of respondents to a professional development survey who identify as female or Hispanic is encouraging. However, the overall lack of ethnic and racial diversity among respondents indicates that much work remains.
- Although 52.2% of respondents indicated research interests as a factor influencing their academic career choice, respondents were much more likely to report a primary focus on clinical care/service or teaching than research in their current positions. The lower comparative focus on research may explain the respondents' relatively lower levels of interest in professional development for research.
- Although there was no significant difference based on gender identity in the likelihood of lifestyle/work hours being an important factor in deciding to pursue an academic career, a significantly larger proportion of female respondents has considered leaving their current position to pursue a better work/life balance. These findings might well suggest a critical mismatch between expectations and reality for faculty identifying as female.
- The specific items of job satisfaction where respondents identifying as female were noted to be less satisfied included teaching assignments, teaching workload, amount of research expected, type of expected research, amount of time for research, amount of time to write papers/presentations, amount of time for service e.g. committee work, and job security. The cohort of respondents identifying as female was noted to be significantly younger and over 95% of all respondents reported being full time (no significant differences based on gender identity). These findings highlight a timely opportunity to explore the issue of workload in academia and the differing experiences of those working full-time in academic careers by gender identity.
- The fact that a higher proportion of the non-tenure track (NTT) faculty cohort had considered leaving their position because of educational debt or compensation may signal a trade-off between the perceived value of job security generally associated with tenure and tenure-track positions and financial remuneration, including the ability to repay student loans.

Regarding respondents' satisfaction with their current job:

- Overall job satisfaction was very high, with leading factors being intellectual challenge, job security, professional caliber of colleagues, career options, and teaching. These are factors that institutions should heavily leverage in faculty recruitment and retention.
- Conversely, the primary factors related to dissatisfaction with the current job relate to the amount of time available to complete activities often deemed essential to academic and/or scholarly success: writing, preparing presentations, research, and committee work. Of note, these three time-related items of job satisfaction were also items where respondents identifying as female were more dissatisfied. Overall, a relative lack of support and recognition for quality teaching ranked high on the dissatisfaction list while quality of teaching by colleagues ranked highly in the job satisfaction. Time available to complete activities and recognition and support for teaching are areas where institutions should develop and implement improvement plans to further enhance faculty recruitment and retention.
- Respondents in non-tenure-system positions and those who identified as female were significantly less satisfied with their current job when a difference was present. These two general findings, along with the specific factors involved (Table 10) should provide vital information for institutions considering the aforementioned ongoing trends where steadily increasing proportions of AAVMC faculty 1) identify as female, and 2) are appointed in non-tenure system positions.

In considering expressed interests in professional development, several overall points warrant mention:

- Considerable overlap/similarity exists between the administration and leadership sections. In designing the study, the intent was to focus on the *tasks* that characterize leader *positions* in the administration section, and to emphasize the *skills*, *knowledge*, *aptitudes*, and *attitudes* that characterize leader *behaviors* in the leadership section.

- The relatively low interest in professional development related to research may be rooted in several factors.
  - As a MAIN focus of their current position, research ranked second-to-last with only 10.9% of respondents.
  - Tenure-track (non-tenured) respondents were the least common of all categories at 14.0%. It is these individuals who are most likely to be interested in enhancing their research skills and productivity with the tenure decision looming.
  - It is possible that strong interest does indeed exist, but just not in the choices offered in the questionnaire (i.e. perhaps the right questions weren't asked). It is worth noting that 52.2% of respondents identified an interest in research as a trigger for the decision to pursue an academic career.
  - In general terms, research is largely (but not exclusively) the responsibility of tenured faculty. However, in the current study tenured faculty expressed the lowest interest in professional development of any faculty group – across the board.

- It is likely that the MAIN focus of respondents' current position is a key driver of their professional development interests.
  - As mentioned above, the relatively low proportion of research-focus faculty could explain the relatively low level of interest expressed in research development topics. Similarly, the low prevalence of administration-focus faculty could underly the somewhat limited interest in administration topics.
  - Significant associations between tenure status and MAIN focus in the current position help to explain differences in professional development interests based on tenure status.

When significant differences were identified, interest in professional development across the various categories was generally greater among respondents identifying as female, non-tenure track respondents, and tenure-track (non-tenured) respondents. Specific items of note included:

- In professional development for teaching
  - The lowest level of interest was expressed related to managing and designing online courses. In an era where learner interest in, and technical capabilities for, online offerings seem to be increasing exponentially, this is a critical finding. This is even more true since the COVID-19 pandemic. Faculty interest is likely higher now as a consequence, and related professional development programs will be vital to the success of the new curricular delivery models that will be required in the future.
  - Respondents identifying as female expressed a significantly stronger interest in virtually every potential dimension of professional development for teaching. Recognition and support for teaching, which is identified as an overall area of decreased job satisfaction in this cohort, may be a mechanism for institutions to consider when addressing recruitment and retention of women into academic veterinary medicine.
  - Similarly, when a significant difference was identified based on tenure status, respondents in a non-tenure track position (NTT) were more likely to be interested. Tenured faculty were substantially less interested. Increased support for professional development for teaching may therefore be a mechanism for recruitment and retention of non-tenure track faculty.

- In professional development for research
  - The most commonly identified significant difference revealed stronger interest on the part of tenure-track (non-tenured) respondents.
  - The factor for which the lowest level of interest was expressed related to policies and procedures for institutional review. This finding reinforces the common practice across institutions where institutions employ well-trained staff whose responsibility is to assure IRB compliance.

- In professional development for career planning
  - Virtually the entire list of factors that demonstrated the strongest interest could also have been listed as professional development in leadership and can therefore inform content related leadership programming.
  - Providing mentorship ranked third highest and receiving mentorship ranked within the top ten items overall. Respondents who identify as female were more interested in mentoring, both providing and receiving, and were also more likely to list mentor/role model as a factor impacting their academic career decision. Because mentoring is such a broad topic, it would be helpful to investigate this further *while* working with experts in the field to develop and test some innovative model programs.
  - Interestingly, learning tenure-track and non-tenure track career options, understanding the promotion and tenure policies and standards, creating a career

development plan, serving as residency director and serving as an academic administrator were all found to be of lower interest. These findings signal a strong need to positively recruit faculty into academic leadership positions and present a timely opportunity for AAVMC member institutions.
    - Of note, tenured faculty were less interested in almost half of the career planning items listed, though there was no significant difference noted by tenure status among the top five items in this category. This may provide guidance for institutions interested in programs with appeal across non-tenure track, tenure track (non-tenured) and tenured faculty.

- Regarding professional development for administration
    - As with career planning, the items with the strongest interest included many topics that could also be considered under the umbrella of leadership development.
    - For the most part, the topics that were of lower interest would be appropriately delegated to well-trained non-academic staff.
    - Interestingly, not a single significant difference was detected in this category.

- When considering the results related to professional development for leadership
    - As with teaching, respondents who identified as female expressed a significantly stronger interest in virtually every potential dimension of leadership development. Like a number of items discussed above, this finding presents a timely opportunity for AAVMC member institutions considering the critical need to increase the prevalence of women in leadership roles and positions.
    - The topics on the "lowest interest" list each represent a competency that is indeed vital to leader success. As such, it is clear that helping potential future academic leaders to understand the importance of the items on this list presents a development opportunity in itself.

In general, it is important to note that respondents' *level of interest* in particular development topics may not always exactly follow the *level of importance* of enhancing particular knowledge, skills, and/or competencies to their institution. Clearly, the level of importance can vary both over time and from institution-to-institution, a prime example of which can be found in skills related to distance learning and online courses. As mentioned above, the importance of these skills has increased exponentially since the COVID-19 pandemic began. In this context, the need for development may well be more acute at some institutions than others, because some institutions may already have a complement of faculty with the necessary skills.

Recommendations for AAVMC from the 2009 study included creation of a comprehensive plan to address areas of greatest faculty professional development need along a career continuum. In addition to tailoring existing meetings to concentrate on specific areas, it was suggested that new AAVMC stand-alone programs be explored. Although a comprehensive plan was not ultimately created, a number of other recommendations have been successfully implemented.

Probably the most notable impact on existing meetings has been the consistent emphasis on diversity, inclusion, and equity in conjunction with the biennial Iverson Bell Symposium. Also, the Association's annual conference has included an increasingly strong portfolio of topics related to teaching and learning, and the annual dean's conference has had a regular leadership development session.

As for new, stand-alone programs, the most broad-based has been the AAVMC Leadership Academy, whose emphasis has been on enhancing the leadership skills, knowledge, aptitudes, and attitudes of emerging leaders at AAVMC member institutions. A number of additional, special-focus programs have also been initiated – consistent with, if not a direct result of, the 2009 recommendations – including the Veterinary Educator Collaborative (VEC), the Primary Care Veterinary Educators (PCVE), Competency-Based Veterinary Education (CBVE), and the Public Policy Faculty Fellows program.

Based on results of the current study, creation of a comprehensive faculty development plan for AAVMC would again be recommended. The initiatives created since the 2009 study should definitely be continued. However, greater visibility for these programs among AAVMC faculty would be recommended, along with consideration of potential barriers to engagement/access. Additional new programs and/or refined focus of existing programs based on the current study's results should also be considered, with special recognition for the findings based on gender identity and tenure system/status. Finally, as with the 2009 study, individual member institutions should consider the current study's findings as they create and implement faculty development programs locally.

SUMMARY

This study was designed to explore career satisfaction and perceived development needs for current faculty in academic veterinary medicine. Career satisfaction was found to be quite high, with nearly 90% of respondents indicating that, overall, they were either satisfied or very satisfied with their job. In considering the potential for variation in results along several dimensions of diversity across the faculty population, significant differences were identified both in overall satisfaction and in satisfaction with several specific aspects of the job based on respondents' gender identity and tenure status. When significant differences were identified, respondents identifying as female and non-tenure track respondents were generally more likely to report lower job satisfaction. Unfortunately, representation across ethnic and racial identities was insufficient to support robust statistical analysis.

Professional development interests were found to be highest in teaching and leadership, followed by research, administration, and career planning, respectively. As with job satisfaction, interests in professional development were frequently found to differ significantly based on respondents' gender identity and tenure status. Where significant differences were identified, interest in professional development across the various categories was generally greater among respondents identifying as female, non-tenure track respondents, and tenure-track (non-tenured) respondents.

Results of this study should provide invaluable information for leaders in academic veterinary medicine to use both in building/maintaining academic program strength and in enhancing faculty recruitment and retention. This is particularly true when considering both the recent trend of increasing proportion of female faculty and the ongoing increase in prevalence of non-tenure system appointments.

Future studies of faculty satisfaction and development needs/interests should certainly monitor progress in the realms of gender identity and tenure status. In addition, as AAVMC member institutions achieve success in diversity, equity, and inclusion initiatives, future studies should actively consider the possibility of unique interests/needs that might emerge among heretofore under-represented faculty groups across a scope of multiple identities, including (but not limited to) race, ethnicity, gender, sexual orientation, ability, and religion. Considering the reality that it may actually take a while to achieve sufficient representation across these groups to conduct robust quantitative analysis as was completed in the current study, qualitative research methods should be employed in the meantime – the results of which will no doubt be invaluable to inform and guide the aforementioned diversity, equity, and inclusion initiatives.

REFERENCES

1. Haden, N.K., H.M. Chaddock, G.F. Hoffsis, J.W. Lloyd, W.M. Reed, R.R. Ranney, and G.J. Weinstein. Preparing faculty for the future: AAVMC members' perceptions of professional development needs, Journ Vet Med Ed, 37(3):220-232, 2010.

2. Heervang E, Goodman R. Advantages and limitations of web-based surveys, evidence from a child mental health survey. *Soc Psychiat Epidemiol* 2011: 46:69-76.

3. Chang JA, Krosnick L. National Surveys via Rdd Telephone Interviewing Versus the Internet Comparing Sample Representativeness and Response Quality. *Public Opinion Quarterly*, 2009; 73(4):641-678.

4. 2018-2019 Comparative Data Report (CDR). Association of American Veterinary Medical Colleges (AAVMC), *Internal Document*, Washington, DC, 2018.

5. American Veterinary Medical Association (AVMA), https://www.avma.org/resources-tools/reports-statistics/market-research-statistics-us-veterinarians-2018, accessed April 30, 2020.

Table 1: Internal Reliability of Survey

Survey Item	Cronbach's Alpha
Demographics	0.68
Information about Current Position	0.85
Information about Training	0.74
Job Satisfaction	0.84
Level of Interest in Teaching	0.67
Level of Interest in Research	0.71
Level of Interest in Career Planning	0.69
Level of Interest in Administration	0.78
Level of Interest in Leadership	0.87
Professional Development through AAVMC	0.74

Table 2: Demographic, Current Position, and Training Information*

	Overall		Gender Identity		Tenure Status	
Item	**Freq.**	**%**	**p-value**	**Comment**	**p-value**	**Comment**
Gender Identity						
Male	223	40.6				
Female	312	56.8				
Ethnicity						
Hispanic	54	9.9	0.002	Males higher % Hispanic	0.020	TT higher, NTT lower % Hispanic
Non-Hispanic	492	90.1				
Race						
White/Caucasian	477	89.3	nsd		nsd	
Black/African American	15	2.8				
Amer. Indian/Alaska Native	2	0.4				
Asian/Asian American	15	2.8				
Two or more races	25	4.7				
Age Group						
25-34	49	9.0	0.000	Males older	nsd	
35-44	170	31.2				
45-54	160	29.4				
55-64	120	22.0				
65-74	42	7.7				
75+	4	0.7				
Current Position – MAIN Focus						
Teaching	151	23.3	0.125		0.000	T higher % admin, res, multiple; NTT higher % clinical
Research	71	10.9				
Clinical Care/Service	197	30.4				
Administration	48	7.4				
Multiple	182	28.0				
Current Rank						
Professor	228	35.2	0.000	Males higher % professor	0.000	T higher % prof; NTT, TT higher % asst. prof.
Associate Professor	161	24.8				
Assistant Professor	187	28.9				
Lecturer	18	2.8				
Instructor	22	3.4				
Other	32	4.9				

*nsd=not sufficient data; NTT=non-tenure track; TT=tenure track (non-tenured); T=tenured

Table 2: Demographic, Current Position, and Training Information (Continued)*

	Overall		Gender Identity		Tenure Status	
Item	**Freq.**	**%**	**p-value**	**Comment**	**p-value**	**Comment**
How long have you been in a faculty role?						
< 1 year	27	4.2	0.000	Males in faculty role longer	nsd	
1-5 years	173	26.7				
6-10 years	118	18.2				
11-15 years	102	15.9				
16-20 years	74	11.4				
> 20 years	152	23.7				
Tenure or Non-Tenure Track						
Tenured (T)	289	44.9	0.000	Males higher in T		
Tenure-track (TT)	90	14.0				
Non-tenure track (NTT)	265	41.1				
Full-Time or Part-Time						
Full-time (>0.8 FTE)	617	95.4	0.144		nsd	
Part-time (0.4-0.79 FTE)	18	2.8				
Part-Time (<0.4 FTE)	9	1.4				
Volunteer (0 FTE)	3	0.5				
Department						
Clinical	431	68.0	0.009	Males lower % clinical	0.000	NTT, TT higher % clinical
Non-clinical	203	32.0				
Degree Completed						
DVM (or equivalent)	541	86.7	0.004	Males lower	0.000	T lower
only	51	8.2	0.011	Males lower	0.000	NTT higher
+ specialization	117	18.8	0.010	Males lower	0.000	NTT higher
+ other degree(s)	79	12.7	0.007	Males higher	0.174	
+ other deg. + spec.	294	47.1	0.633		0.001	NTT lower
PhD	276	44.2	0.008	Males higher	0.000	NTT lower
without DVM	63	10.1	0.027	Males higher	0.000	T higher
Other Doctoral	34	5.4	0.796		0.042	NTT lower
Master's Degree	262	42.0	0.136		0.131	
Advanced Clinical Training						
Specialty Boarded	434	69.6	0.024	Males lower	0.066	

*nsd=not sufficient data; NTT=non-tenure track; TT=tenure track (non-tenured); T=tenured

Table 3: Employment: Factors impacting the decision to pursue an academic career and considerations for possibly leaving current position*

	Overall		Gender Identity		Tenure Status	
Item	**Freq.**	**%**	**p-value**	**Comment**	**p-value**	**Comment**
Factors impacting academic career decision						
Intellectual interest	529	88.5	0.245		0.825	
Research interests	312	52.2	0.060		0.000	NTT lower
Mentor/role model	280	46.8	0.009	Female higher	0.029	TT higher
Lifestyle issues/work hours	190	31.8	0.468		0.167	
Job market	65	10.9	0.091		0.397	
Family/friend	48	8.0	0.871		0.015	NTT higher
Income potential	43	7.2	0.542		0.085	
Experience with a client	19	3.2	0.856		0.791	
Have you seriously contemplated leaving/retiring?						
No, not in the next 10 years	201	33.8	0.411		0.002	T higher % no; NTT higher % in next year
Yes (total)	394	66.2				
• within the next year	92	15.5				
• within 5 years	189	31.8				
• within 6-10 years	113	19.0				
If yes (n=394), for which of the following reasons?						
Educational debt	19	4.8	0.297		0.001	NTT higher
Compensation	130	33.0	0.376		0.031	NTT higher
Work/life balance	193	49.0	0.006	Female higher	0.173	
New challenges	116	29.4	0.943		0.682	
Different interest	43	10.9	0.447		0.577	
Better career advancement opportunities	94	23.9	0.193		0.001	T lower
Lack of faculty development opportunities	86	21.8	0.661		0.043	NTT higher
Retirement	153	38.8	0.002	Male higher	0.000	T higher

*NTT=non-tenure track; TT=tenure track (non-tenured); T=tenured

Table 4: Job Satisfaction*

Item	Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied
Overall Job Satisfaction	12 (2.0)	48 (8.1)	291 (49.0)	243 (40.9)
Intellectual Challenge	8 (1.4)	42 (7.2)	309 (52.7)	227 (38.7)
Quality of Teaching by Colleagues	5 (0.9)	56 (9.6)	336 (57.6)	186 (31.9)
Job Security	15 (2.5)	48 (8.1)	252 (42.6)	276 (46.7)
Career Options	17 (2.9)	47 (8.0)	295 (50.1)	228 (38.8)
Teaching Assignments	7 (1.2)	60 (10.2)	305 (51.9)	216 (36.7)
Type of Expected Research	11 (2.0)	55 (10.2)	336 (62.3)	137 (25.4)
Geographic Location	14 (2.4)	63 (10.6)	268 (45.1)	249 (41.9)
Faculty Interactions	10 (1.7)	72 (12.1)	247 (41.4)	268 (44.9)
Quality of Students	10 (1.7)	78 (13.2)	333 (56.4)	170 (28.8)
Professional Growth	17 (2.9)	72 (12.2)	263 (44.5)	239 (40.4)
Quality of Clinical Practice Program	16 (3.3)	57 (11.8)	279 (57.6)	132 (27.3)
Number of Students Supervised	14 (2.5)	76 (13.7)	341 (61.6)	123 (22.2)
Amount of Expected Research	14 (2.5)	86 (15.6)	354 (64.3)	97 (17.6)
Teaching Workload	14 (2.4)	107 (18.2)	340 (57.8)	127 (21.6)
Opportunities to Work with Students	11 (1.9)	113 (19.2)	281 (47.8)	183 (31.1)
Annual Salary and Benefits	28 (4.7)	115 (19.2)	320 (53.5)	135 (22.6)
Support and Recognition for Quality Teaching	52 (8.9)	175 (29.9)	264 (45.1)	94 (16.1)
Amount of Time for Service e.g. committee work	55 (9.6)	194 (33.7)	282 (49.0)	45 (7.8)
Amount of Time for Research	73 (13.3)	199 (36.2)	216 (39.3)	62 (11.3)
Amount of Time to Write Papers/Prepare Presentations	80 (14.1)	219 (38.6)	213 (37.6)	55 (9.7)

* frequency of response per item (percent of responses per item)

Table 5: Level of Interest in Professional Development for Teaching*

Item	Not Interested	Low Interest	Moderate Interest	High Interest
Giving feedback	15 (2.6)	34 (5.9)	210 (36.2)	321 (55.3)
Asking effective questions	16 (2.8)	37 (6.4)	170 (29.4)	356 (61.5)
Fostering self-directed learning	22 (3.8)	52 (9.0)	210 (36.2)	296 (51.0)
Facilitating small-group learning	21 (3.6)	69 (11.9)	224 (38.7)	265 (45.8)
Using case-based learning (CBL)	27 (4.7)	69 (12.0)	200 (34.7)	281 (48.7)
Discovering principles of learning and motivation	26 (4.5)	71 (12.2)	200 (34.5)	283 (48.8)
Teaching in clinical settings	35 (6.5)	55 (10.2)	127 (23.6)	322 (59.7)
Advising students	22 (3.8)	78 (13.5)	225 (39.1)	251 (43.6)
Understanding learning styles	25 (4.3)	86 (14.9)	244 (42.2)	223 (38.6)
Instructional design and course planning	24 (4.2)	91 (15.7)	243 (42.0)	220 (38.1)
Principles of adult learning	29 (5.1)	92 (16.1)	233 (40.9)	216 (37.9)
Preparing/presenting lectures	27 (4.7)	102 (17.6)	227 (39.2)	223 (38.5)
Learning assessment theory, and practice	38 (6.6)	97 (16.8)	195 (33.8)	247 (42.8)
Exploring emotional intelligence	32 (5.5)	121 (20.8)	212 (36.5)	216 (37.2)
Developing competencies to guide curriculum	37 (6.5)	121 (21.1)	209 (36.4)	207 (36.1)
Creating multiple-choice exams	37 (6.4)	123 (21.3)	217 (37.5)	201 (34.8)
Working with challenging students	53 (9.1)	125 (21.5)	210 (36.1)	194 (33.3)
Writing educational objectives	38 (6.6)	151 (26.2)	246 (42.6)	142 (24.6)
Creating presentations	52 (9.0)	141 (24.4)	182 (31.5)	202 (35.0)
Designing online courses	77 (13.4)	156 (27.1)	189 (32.8)	154 (26.7)
Teaching psychomotor skills	65 (11.7)	162 (29.0)	187 (33.5)	144 (25.8)
Managing online courses	74 (12.8)	176 (30.1)	184 (31.8)	144 (24.9)

* frequency of response per item (percent of responses per item)

Table 6: Level of Interest in Professional Development for Research*

Item	Not Interested	Low Interest	Moderate Interest	High Interest
Fostering interprofessional research collaboration	50 (9.0)	84 (15.1)	164 (29.4)	259 (46.5)
Using tables, charts, and graphs to display data	66 (11.9)	99 (17.8)	189 (33.9)	203 (36.1)
Understanding qualitative research	65 (11.6)	118 (21.1)	186 (33.2)	191 (34.1)
Writing research articles	81 (14.7)	112 (20.3)	176 (31.9)	182 (33.0)
Mastering the fundamentals of research design	59 (10.7)	141 (25.5)	198 (35.9)	154 (27.9)
Mastering the principles of scientific writing	83 (14.9)	125 (22.4)	153 (27.4)	198 (35.4)
Selecting research topics	54 (9.8)	153 (27.6)	215 (38.8)	132 (23.8)
Multivariate statistical analysis	90 (16.3)	124 (22.5)	163 (29.6)	174 (31.6)
Writing research grants	62 (11.2)	153 (27.7)	168 (30.4)	169 (30.6)
Using non-parametric statistical analysis	91 (16.5)	125 (22.6)	179 (32.4)	157 (28.4)
Presenting at scientific meetings	83 (14.9)	138 (24.7)	162 (29.0)	175 (31.4)
Using parametric statistical analysis	91 (16.5)	130 (23.6)	181 (32.9)	149 (27.0)
Conducting survey-based research	86 (15.4)	139 (24.9)	198 (35.5)	135 (24.2)
Correlation statistics	91 (16.5)	135 (24.5)	167 (30.3)	158 (28.7)
Conducting evidentiary reviews	72 (13.3)	152 (28.2)	216 (40.0)	100 (18.5)
Writing training grants	82 (15.0)	146 (26.7)	174 (31.8)	145 (26.5)
Writing abstracts	88 (15.7)	156 (27.9)	195 (34.9)	120 (21.5)
Examining ethical issues in research	71 (12.8)	174 (31.2)	220 (39.5)	92 (16.5)
Writing infrastructure support grants	99 (18.0)	155 (28.2)	165 (30.0)	131 (23.8)
Understanding the review process for scientific journals	100 (17.9)	164 (29.3)	177 (31.7)	118 (21.1)
Developing posters	100 (18.0)	180 (32.3)	175 (31.4)	102 (18.3)
Writing case reports	104 (19.1)	171 (31.3)	158 (28.9)	113 (20.7)
Designing rating scales and checklists	108 (19.6)	190 (34.6)	170 (30.9)	82 (14.9)
Understanding policies and procedures of the IRB	105 (19.0)	240 (43.4)	149 (26.9)	59 (10.7)

* frequency of response per item (percent of responses per item)

Table 7: Level of Interest in Professional Development for Career Planning*

Item	Not Interested	Low Interest	Moderate Interest	High Interest
Learning to negotiate	21 (3.7)	52 (9.3)	202 (36.0)	286 (51.0)
Managing conflict	20 (3.6)	69 (12.4)	202 (36.2)	267 (47.9)
Providing mentoring	22 (4.0)	67 (12.0)	194 (34.8)	274 (49.2)
Learning to lead/work in teams	37 (6.6)	64 (11.5)	194 (34.8)	262 (47.0)
Working with challenging/difficult people	28 (5.0)	84 (15.0)	209 (37.3)	240 (42.8)
Mastering time management	53 (9.6)	99 (17.9)	151 (27.3)	250 (45.2)
Understanding project management	54 (9.8)	124 (22.6)	216 (39.3)	156 (28.2)
Receiving mentoring	49 (8.8)	136 (24.5)	182 (32.7)	189 (34.0)
Serving as a course director	59 (10.7)	142 (25.6)	190 (34.3)	163 (29.4)
Conducting meetings and chairing committees	73 (13.0)	140 (25.0)	188 (33.6)	159 (28.4)
Developing/strengthening your CV	70 (12.7)	148 (26.8)	172 (31.1)	163 (29.5)
Preparing an academic credentials portfolio	66 (12.1)	153 (28.0)	165 (30.2)	163 (29.8)
Serving as an academic administrative manager/ leader (e.g., chair, assistant/associate dean, dean)	109 (19.8)	120 (21.8)	136 (24.7)	186 (33.8)
Writing presentation proposals for national meetings	78 (14.0)	154 (27.7)	194 (34.8)	131 (23.5)
Creating a career development plan	74 (13.5)	156 (28.4)	148 (27.0)	171 (31.2)
Serving as a residency director	97 (19.0)	123 (24.1)	146 (28.6)	145 (28.4)
Understanding the promotion and tenure policies and standards	95 (17.5)	157 (29.0)	150 (27.7)	140 (25.8)
Writing career development grants	99 (18.2)	180 (33.0)	148 (27.2)	118 (21.7)
Learning tenure-track and non-tenure-track options	143 (26.7)	178 (33.2)	122 (22.8)	93 (17.4)

* frequency of response per item (percent of responses per item)

Table 8: Level of Interest in Professional Development for Administration*

Item	Not Interested	Low Interest	Moderate Interest	High Interest
Fostering innovation and creativity	33 (5.9)	40 (7.2)	179 (32.2)	304 (54.7)
Enhancing performance and productivity	41 (7.4)	54 (9.7)	208 (37.5)	252 (45.4)
Evaluating and improving the work environment	31 (5.6)	66 (11.9)	194 (35.0)	263 (47.5)
Supervising faculty and staff	54 (9.8)	113 (20.5)	203 (36.8)	181 (32.9)
Assigning tasks and delegating responsibilities	63 (11.4)	113 (20.5)	215 (39.0)	160 (29.0)
Mastering strategic planning	61 (11.1)	119 (21.6)	167 (30.3)	204 (37.0)
Dealing with under-performing faculty and staff	73 (13.2)	137 (24.8)	192 (34.8)	150 (27.2)
Assessing the outcomes of faculty and staff tasks	81 (14.7)	129 (23.4)	188 (34.1)	153 (27.8)
Preparing for and conducting performance reviews	87 (15.8)	126 (22.9)	202 (36.7)	136 (24.7)
Understanding the budget process	97 (17.6)	134 (24.3)	172 (31.2)	148 (26.9)
Preparing budgets	111 (20.2)	136 (24.8)	177 (32.2)	125 (22.8)
Learning to write reports and other administrative communications	100 (18.1)	173 (31.3)	161 (29.1)	119 (21.5)
Learning the employee grievance process	116 (21.2)	184 (33.6)	181 (33.1)	66 (12.1)
Leading new employee orientation	127 (23.1)	192 (34.9)	151 (27.5)	80 (14.6)

* frequency of response per item (percent of responses per item)

Table 9: Level of Interest in Professional Development for Leadership*

Item	Not Interested	Low Interest	Moderate Interest	High Interest
Strategic thinking	28 (5.1)	55 (10.0)	182 (33.1)	285 (51.8)
Leading change	31 (5.7)	51 (9.3)	168 (30.8)	296 (54.2)
Leading teams	27 (4.9)	68 (12.4)	198 (36.1)	256 (46.6)
Leading without authority	45 (8.3)	64 (11.7)	152 (27.9)	284 (52.1)
AAVMC Leadership Academy	39 (7.4)	79 (14.9)	191 (36.0)	221 (41.7)
Cultural awareness	36 (6.5)	86 (15.6)	203 (36.8)	226 (41.0)
Equity, diversity, and inclusion	42 (7.6)	81 (14.7)	204 (37.0)	225 (40.8)
Wellness	39 (7.1)	84 (15.3)	212 (38.6)	215 (39.1)
Cultural competence	35 (6.4)	92 (16.7)	197 (35.8)	226 (41.1)
Emotional intelligence	35 (6.3)	93 (16.9)	200 (36.2)	224 (40.6)
Managing up	57 (10.7)	75 (14.0)	172 (32.2)	230 (43.1)
Power, politics, and influence	63 (11.5)	103 (18.8)	181 (33.1)	200 (36.6)

* frequency of response per item (percent of responses per item)

Table 10: Chi-squared analysis of faculty job satisfaction based on gender identity and tenure status

	Gender Identity		Tenure Status	
Item	**p-value**	**Comment**	**p-value**	**Comment**
Overall job satisfaction	0.009	Females less satisfied	0.015	Tenured more satisfied
Career options	0.793		0.042	Tenured, TT more satisfied
Professional growth	0.125		0.024	Tenured, TT more satisfied
Geographic location	0.568		0.022	Tenured, NTT more satisfied
Annual salary and benefits	0.110		0.895	
Job security	0.051	Females less satisfied	0.000	Tenured more satisfied
Faculty interactions	0.455		0.100	
Teaching assignments	0.040	Females more satisfied	0.869	
Teaching workload	0.040	Females less satisfied	0.768	
# Students supervised	0.077		0.951	
Opportunities to work with students	0.416		0.573	
Quality of students	0.074		0.983	
Intellectual challenge	0.122		0.036	Tenured, TT more satisfied
Quality of teaching by colleagues	0.126		nsd	
Support and recognition for quality teaching	0.468		0.795	
Quality of clinical practice	0.242		0.271	
Amount of expected research	0.028	Females less satisfied	0.206	
Type of expected research	0.042	Females less satisfied	0.036	Tenured, TT more satisfied
Amount of time for research	0.043	Females less satisfied	0.901	
Amount of time to write papers/prepare presentations	0.009	Females less satisfied	0.197	
Amount of time for service e.g. committee work	0.005	Females less satisfied	0.262	

Table 11: Chi-squared analysis of faculty interest in professional development for teaching based on gender identity and tenure status

	Gender Identity		Tenure Status	
Item	**p-value**	**Comment**	**p-value**	**Comment**
Instructional design and				
course planning	0.028	Females more interested	0.061	
Principles of adult learning	0.007	Females more interested	0.004	Tenured less interested
Developing competencies to guide curriculum	0.054	Females more interested	0.339	
Writing educational objectives	0.085		0.016	NTT, TT more interested
Teaching in clinical settings	0.042	Females more interested	0.000	NTT more interested
Preparing/presenting lectures	0.697		0.003	NTT more interested
Creating presentations	0.750		0.096	
Managing online courses	0.751		0.840	
Designing online courses	0.421		0.315	
Facilitating small-group learning	0.028	Females more interested	0.108	
Discovering principles of learning and motivation	0.003	Females more interested	0.069	
Advising students	0.797		0.382	
Asking effective questions	0.003	Females more interested	0.019	NTT, TT more interested
Giving feedback	0.104		0.058	
Fostering self-directed learning	0.006	Females more interested	0.089	
Understanding learning styles	0.049	Females more interested	0.522	
Exploring emotional intelligence	0.010	Females more interested	0.375	
Working with challenging students	0.000	Females more interested	0.174	
Creating multiple-choice exams	0.058		0.072	
Learning assessment theory, and practice	0.006	Females more interested	0.302	
Using case-based learning (CBL)	0.071		0.033	NTT more interested
Teaching psychomotor skills	0.036	Females more interested	0.004	NTT more interested

Table 12: Chi-squared analysis of faculty interest in professional development for research based on gender identity and tenure status

	Gender Identity		Tenure Status	
Item	**p-value**	**Comment**	**p-value**	**Comment**
Examining ethical issues in research	0.061		0.011	Tenured more interested
Selecting research topics	0.880		0.040	Tenured more interested
Conducting evidentiary reviews	0.162		0.002	NTT less interested
Understanding policies and procedures of the IRB	0.685		0.226	
Mastering the fundamentals of research design	0.955		0.031	NTT less interested
Writing research grants	0.466		0.000	TT more interested
Writing training grants	0.371		0.000	TT more interested
Writing infrastructure support grants	0.373		0.015	TT more interested
Designing rating scales and checklists	0.030	Females more interested	0.290	
Conducting survey-based research	0.001	Females more interested	0.536	
Using parametric statistical analysis	0.082		0.002	TT more interested
Using non-parametric statistical analysis	0.181		0.002	TT more interested
Correlation statistics	0.090		0.031	TT more interested
Multivariate statistical analysis	0.185		0.008	TT more interested
Using tables, charts, and graphs to display data	0.488		0.100	
Understanding qualitative research	0.142		0.059	
Writing abstracts	0.119		0.084	
Writing case reports	0.339		0.003	NTT more interested
Writing research articles	0.859		0.092	
Understanding the review process for scientific journals	0.035	Females more high interest	0.047	NTT, TT more interested
Mastering the principles of scientific writing	0.455		0.125	
Developing posters	0.373		0.088	
Presenting at scientific meetings	0.621		0.070	
Fostering interprofessional research collaboration	0.060		0.188	

Table 13: Chi-squared analysis of faculty interest in professional development for career planning based on gender identity and tenure status

	Gender Identity		Tenure Status	
Item	**p-value**	**Comment**	**p-value**	**Comment**
Conducting meetings and chairing committees	0.585		0.381	
Providing mentoring	0.009	Females more interested	0.106	
Receiving mentoring	0.000	Females more interested	0.000	Tenured less interested
Mastering time management	0.258		0.021	Tenured less interested
Learning tenure-track and non-tenure-track options	0.193		0.000	Tenured less interested
Understanding project management	0.309		0.067	
Developing/strengthening your CV	0.009	Females more interested	0.000	Tenured less interested
Creating a career development plan	0.077		0.000	Tenured less interested
Preparing an academic credentials portfolio	0.000	Females more interested	0.000	Tenured less interested
Understanding the promotion and tenure policies and standards	0.095		0.000	Tenured less interested
Managing conflict	0.003	Females more interested	0.828	
Learning to negotiate	0.001	Females more interested	0.634	
Serving as a course director	0.141		0.000	Tenured less interested
Serving as a residency director	0.709		0.003	Tenured less interested
Learning to lead/work in teams	0.201		0.797	
Working with challenging/difficult people	0.001	Females more interested	0.461	
Writing presentation proposals for national meetings	0.343		0.014	Tenured less interested
Writing career development grants	0.146		0.056	
Serving as an academic administrative manager/leader (e.g., chair, assistant/associate dean, dean)	0.811		0.031	NTT less interested

Table 14: Chi-squared analysis of faculty interest in professional development for administration based on gender identity and tenure status

	Gender Identity		Tenure Status	
Item	**p-value**	**Comment**	**p-value**	**Comment**
Supervising faculty and staff	0.728		0.125	
Leading new employee orientation	0.324		0.466	
Dealing with under-performing faculty and staff	0.854		0.477	
Enhancing performance and productivity	0.550		0.216	
Fostering innovation and creativity	0.637		0.720	
Learning the employee grievance process	0.271		0.785	
Assigning tasks and delegating responsibilities	0.693		0.784	
Preparing budgets	0.088		0.089	
Understanding the budget process	0.600		0.082	
Preparing for and conducting performance reviews	0.907		0.215	
Evaluating and improving the work environment	0.199		0.754	
Mastering strategic planning	0.859		0.317	
Learning to write reports and other administrative communications	0.926		0.512	
Assessing the outcomes of faculty and staff tasks	0.722		0.562	

Table 15: Chi-squared analysis of faculty interest in professional development for leadership based on gender identity and tenure status

	Gender Identity		Tenure Status	
Item	**p-value**	**Comment**	**p-value**	**Comment**
Emotional intelligence	0.002	Females more interested	0.316	
Leading teams	0.021	Females more interested	0.267	
Cultural awareness	0.001	Females more interested	0.231	
Cultural competence	0.000	Females more interested	0.055	
Wellness	0.000	Females more interested	0.003	Tenured less interested
Equity, diversity and inclusion	0.000	Females more interested	0.148	
Strategic thinking	0.181		0.182	
Leading change	0.006	Females more interested	0.881	
Power, politics, and influence	0.095		0.361	
Leading without authority	0.010	Females more interested	0.132	
Managing up	0.074		0.379	
AAVMC Leadership Academy	0.001	Females more interested	0.009	Tenured less interested