A Survey Of Career Pathways Of Engineering Deans In The United States: Strategies For Leadership Development

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ABSTRACT

The career pathways of deans in higher education seem to follow the traditional model in academia from a senior faculty position and/or department chair. This however may be different from deans in engineering education. The goal of this survey research is to assess the career paths of current Deans of Colleges/Schools of Engineering in the United States. The survey discovered that about two thirds follow the normative (traditional) career path for deans, suggest leadership attributes of good communication and fiscal management experiences are the most important, and indicate current and future challenges of fundraising and faculty development are critical issues in higher education.

Keywords: Academic Leadership; Professional Development; ASEE

INTRODUCTION

In the April 2006 Issue of Prism Magazine published by the American Society for Engineering Education (ASEE), the article entitled "***All The Right Moves***" discusses how engineering deans are being appointed to Provost positions in a number of universities. Because of their strong analytical and decision making skills, high-level administrative positions in academia may seem appropriate for an engineering dean's repertoire and experience with big budgets. ASEE has continued to be strong advocates of leadership development for engineers. The Engineering Deans Council of ASEE meets annually to discuss strategic issues in engineering education, public policy, partnerships, and share information to address the needs of this viable community for US workforce competitiveness. Though there have been many research publications discussing the dearth in future leadership in higher education (Lederman, 2010), few of them focus on the career paths of academic leaders in the STEM (science, technology, engineering, math) disciplines in colleges and universities. Many commentary articles in the Chronicle of Higher Education have announced the upcoming leadership crisis in higher education, which may be validated by the strong employment needs for university administrators, according to the Bureau of Labor Statistics (2014). This may be further justified by the emergence on formal leadership development programs by organizations such as the American Council of Engineering, the American Society for Engineering Education, and the Council for Colleges of Arts & Sciences (CCAS). CCAS has offered several leadership programs for deans, recognizing the urgent need to better prepare leaders in science disciplines.

The normative career path of deans of colleges and universities is well known in the academy. Hence, there is no shortage of publications about how to prepare and survive the deanship in the academy (Buller, 2007) (Krahenbuhl, 2004) (Bright and Richards, 2001) (Montez, Wolverton, and Gmelch, 2003). The effectiveness of deans was also examined from an individual and institutional perspective, and strategies were discussed to handle difficult situations (Rosser, Johnsrud and Heck, 2003) (Higgerson and Teddi, 2007). Academic leadership also addressed the challenges with women and minorities in higher education (Dean, Bracken and Allen, 2009). However, the author was interested in the origin and career path of "*engineering*" deans to their current positions. This kind of information can be used to help create junior faculty development programs in science and engineering for higher education, enhance their career potential, and assist with succession planning in academic institutions. Motivated by a similar study of deans completed in pharmacy (Draugalis, 1992), the survey research sought to

assess the career pathways of engineering deans, and share the results of the survey completed last year. The following describes the survey research methodology and the results from the survey. The information can provide some insight on the development of future development programs, and give a picture of the current profile of engineering deans in the United States.

SURVEY METHOD

The survey approach for this study followed the format described by Draugalis (1992). This survey methodology and approach was selected and appropriate for retrieving responses from individuals matriculating in their careers, mostly using a likert-scale format. Because the goal was to find the same information for engineering deans, the instrument was essentially the same and the author sought the desired population for engineering deans. The listing of engineering schools was obtained from the American Society of Engineering Education publication entitled "Profiles of Engineering & Engineering Technology Colleges", for 2011. In the publication, engineering deans were listed for the approximately 345 engineering programs in the US. However, because of potential changes in leadership in the ASEE publication may have occurred since the publication, the author submitted to deans for a response from the serving dean of the engineering college or university. Over a three month period in 2012, three emails were sent to every dean of an engineering program, and two (2) first-class mailings were also delivered to the engineering program addressed to "the dean". The first-class and emails requested the dean to respond to an on-line survey during the open period for responding.

Survey Instrument – The survey instrument used was adapted from Draugalis (1992), which was from the report on "*Leaders in Transition*" (Moore, 1983). The instrument was developed in electronic form, and implemented through "SURVEYMONKEY" as a web-based delivery tool for online surveys (Surveymonkey, 2014). Modification of several questions was completed to make them relevant to the engineering profession and applicable to the careers of deans. The survey instrument was re-formatted into categories relevant to personal background, professional activities, career advancement, and the future of engineering education. Before mailings, the instrument was submitted for Internal Review Board (IRB) to the Research & Sponsored Programs Office for approval, and the instrument included a letter for informed consent for each participant.

Data Analysis – The analysis of the collected data was performed by the capabilities of the SURVEYMONKEY on-line survey software. The software requires an annual fee for usage, and many attributes to sort and analyze the results of the on-line survey. The objective of the survey is to analyze the normative career path of engineering deans, which is assumed to progress from tenure-track faculty to tenure, department head/chair, assistant/associate dean, and to dean. The next section describes the results from the on-line survey.

RESULTS

Three hundred and thirty (330) engineering schools were selected from the Profiles of Engineering & Engineering Technology Colleges publication of 2011 of the American Society of Engineering Education (ASEE). The selection of schools was based on accreditation status, enrollment more than 100 students, and an official administrative title of "Dean", as opposed to "director or chairperson" of the academic program. Only four responses were deemed inadequate and incomplete of all the responses, therefore leaving 120 valid responses using the on-line survey results, and a 36% response rate. Every respondent did not respond to every question, and is also mentioned in the below summaries.

Demographics. The current representation of males in the engineering workplace is about 85% (Bureau of Labor Statistics, 2013) and 86% of the faculty in academia (American Society of Engineering Education, 2013). This rivals the number of male deans in engineering at 89.2% according to our survey with 10.8% women. Eighty-one percent of the dean respondents were Caucasian, while 8.0% were Asian, 7.1% African American, 2.7% Hispanic/Latino, and 0.9% Native American. Fifty-four percent of the deans were born during the 1950s (1951-1960) averaging in 1956, and 87.5% were married. Only 1.8% was single, and 9.9% were divorced or widowed. The level of education of deans was supported by graduate degrees in engineering, whereby 90.4% had a Masters in engineering, and 89% had a Ph.D. in engineering. The deans were represented by varying sizes of colleges and universities. Exactly 25% were represented by colleges with less than 5000 students, 24.1% with enrollments

between 5001-10,000 students, and 27.7% with more than 20,000 students. The individual college or school of engineering also varied by size with 42.2% having less than 1000 students (19.8% less than 500 students). Almost Forty-one percent had between 1000-3000 students enrolled, and only 7.2% had enrollments greater than 4501 students.

Career Pathway. The traditional pathway to the deanship is typically through the department chair. Though that was depicted in our survey, a few deans did matriculate through a "non-traditional" pathway either through "*non-chaired*" positions in academia or from industry. The author examined the responses very carefully to discern the positions held by the respondents previous to the appointment as dean. Almost two-thirds of the current deans followed the traditional pathway of serving as a department chair prior to the deanship (64.7%). Another co-hort reached the position as dean without serving as a department chair, but through the administrative role as an associate dean/associate provost/associate vice president role within the college/school of engineering or outside the college (19.1%). Less than 10% came directly from industry or an outside research organization prior to the appointment as dean. Figure 1 shows the former position for engineering deans.

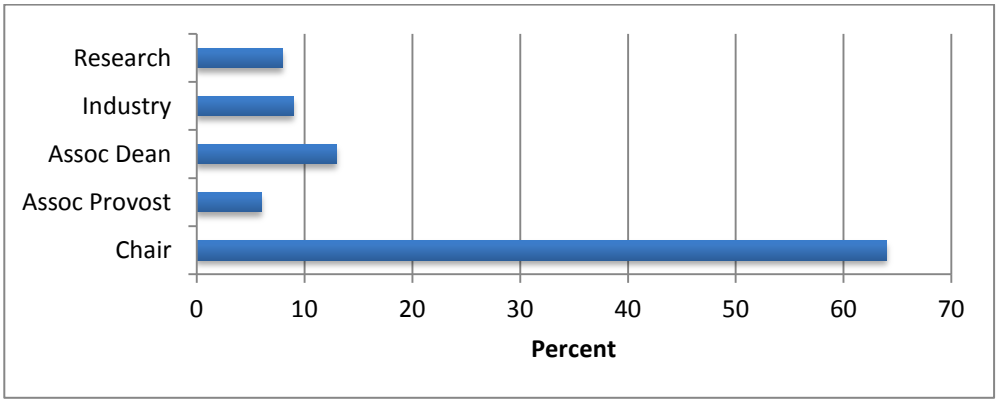

Figure 1. Engineering Deans Career Pathways

Professional Activities. The profession of engineering is recognized as a professional practice. The occupation generally recommends professional licensure for consulting. To complement the education and experience of becoming a dean, many were engaged in numerous professional development activities. To determine the value of participating in professional activities, the deans rated several activities with reference to their importance of having not participated, participated but not important, participated and somewhat important, or participated and very important. Almost 90% participated in being a paid consultant in their career in engineering, and rated it the highest in being a dean. This was converted to a normalized likert-scale rating average of 2.74, which was also the highest. The deans also believe participating in specialized professional workshops or seminars is the next most important (79.8% participation), and participating in a national professional organization was the next most important (73.1% participation), typically representing a particular engineering discipline. Not all respondents answered the survey question (14).

Community Activities. The dean of any college is recognized as a key administrator outside the academic walls of the institution. Within the local and surrounding community of the university, many faculty are engaged in community and social activities and events. This may include participation in professional organizations, social, and civic-minded initiatives. It is recognized as the "*service*" component of academic responsibility. In the leadership role of an engineering dean, more than 70% (71.7%) of deans believe participation in an organized community activity has been important to their career advancement. However, thirty-seven respondents skipped this question. Of those that responded, 93.7% participated in a professional engineering organization and 76.7% participated in local school or K12 activities. The average rating was 3.29 and 2.58 respectively, as shown in Table I.

Table 1. Response Frequencies And Percentages Regarding Community Activities

	Have Not Participated	Participated, Not Important	Participated, Somewhat Important	Participated, Very Important	Total	Weighted Average
Professional engineering organization	6.33% 5	7.59% 6	36.71% 29	49.37% 39	79	3.29
Local school(s)	23.38% 18	15.58% 12	40.26% 31	20.78% 16	77	2.58
Economic development/ business (e.g. Chamber of Commerce)	34.18% 27	6.33% 5	31.65% 25	27.85% 22	79	2.53
Church/religious	29.49% 23	25.64% 20	28.21% 22	16.67% 13	78	2.32
Philanthropic/cultural (e.g. United Way)	30.77% 24	21.79% 17	37.18% 29	10.26% 8	78	2.27
Political/Government	55.13% 43	5.13% 4	23.08% 18	16.67% 13	78	2.01
Civic/fraternal (e.g. Kiwanis)	56.58% 43	7.89% 6	28.95% 22	6.58% 5	76	1.86
Social/environment issues (e.g. Sierra Club)	62.34% 48	18.18% 14	14.29% 11	5.19% 4	77	1.62
Health and Social services	73.08% 57	8.97% 7	16.67% 13	1.28% 1	78	1.46
Veterans/military	84.42% 65	9.09% 7	6.49% 5	0.00% 0	77	1.22

Mentoring. The concept of mentoring typically plays a major role in the careers of mid and high level academic administrators (Bland, Taylor, Schollen, Weber Main, 2012). This is probably true in all sectors of industry, government, and non-profit. In the survey for engineering deans, 64.2% feel that a mentor or mentors that helped them in their respective careers. From the survey, the most mentioned position that deans received mentoring was from individuals serving as Deans before their actual appointment. More than one-third (35%) indicated that they did or currently receive mentoring advice from Deans. The second most frequently mentioned was mentoring or advice from other colleagues and professors (21%), and then department chairs/heads (15%). About 11% received mentoring from serving Provosts, 7% from Presidents and Vice Presidents each, and less than 5% from industry executives and others. Though deans indicated the importance of the role of their mentors, 71% indicated that the mentor did not assist them in obtaining their current position. When asked about how mentors have or are currently supporting their career, most indicated that they receive advice about academic politics, and recommendations for solutions of difficult situations. Many mentors also share contacts and encouraged deans to seek professional development opportunities such as joining organizations and participating in leadership programs. More than half of the deans currently participate as mentors (59%), and include some activities such as advice on faculty productivity, career advice, and professional development.

Motivation for Becoming A Dean. The career planning for deans may vary depending on personal goals or external factors that may lead to the opportunity to serve as dean. Recognizing the traditional pathway to becoming a dean, the survey also wanted to know what motivation led to the desire to become a dean of engineering. Table II shows the response frequencies for reasons for becoming dean, which list the number of respondents from a total of 104, and an average rating for each question. Some respondents provided no response (N/A).

As evident by the rating scores from Table II, it suggests that deans are more motivated by the duties and responsibilities of the position. It is the role and impact of the position that the deans seek, and followed by the mission and culture of the institution. Next of importance were the deans were seeking a change in their career. Interestingly, salary was not the primary reason for seeking the position.

In a separate question, deans also cited that the duties and responsibilities, and the mission of the institution, were the main reason for staying or remaining at the same institution based on the average rating (4.24 and 4.06 respectively).

Potential Career Move. During the period of the survey, we believe the US economy had a major effect on employment and job changes. Thus, we sought to determine the mobility of dean's during this period as well. Almost 58% of the deans were not considering a change in position or actively seeking a new position, but 17% were in fact looking for a career move. The remaining 25% responded as "maybe", from a total response of 104. For those seeking a career move, 64% were seeking a more responsible position at a new institution, and 19% were seeking a similar position at a new institution.

The Responsibilities of the Dean. The role of the dean can be varied, but the support from the institution or changes can play an important role in the satisfaction of the responsibility. In the opinion of the deans, most (40%) believe that more administrative support from the institution will help enhance their career and responsibility as a dean. Some of the respondents referred to more empowerment, autonomy, and fiscal support would help them in their roles, with only 21% referring to as salary for more satisfaction.

In the survey of deans, they were requested to rate the level of importance of their roles and responsibilities. As shown in Table III, communication and managing fiscal matters were the most important role of the dean out of 102 respondents from the pool of 120. The deans were also requested to indicate on an average day, what percent of time is allocated to a variety of activities. As a response average, 33% indicated that their time was in scheduled meetings, 24% doing deskwork, 10% travel, 10% in unscheduled meetings, service 6%, and teaching, research, and telephone equally at approximately 4%. In their leadership role of the dean, 48% indicated a participative (democratic) style of leadership, and 42% a delegate (empowerment) style of leadership. Approximately 5% declared an authoritarian (autocratic) style.

Table 2. Response Frequencies For Reasons For Becoming Dean Of Engineering

Reason Or Motivation	Not At All	Low	Moderate	High	Very High	N/A	Total	Weighted Average
Duties and responsibilities of position	0.00% 0	0.00% 0	9.62% 10	37.50% 39	52.88% 55	0.00% 0	104	4.43
Mission/philosophy of the institution	6.73% 7	3.85% 4	14.42% 15	25.00% 26	49.04% 51	0.96% 1	104	4.07
Ready for change	4.81% 5	11.54% 12	18.27% 19	37.50% 39	25.96% 27	1.92% 2	104	3.70
Salary	3.85% 4	19.23% 20	43.27% 45	23.08% 24	8.65% 9	1.92% 2	104	3.14
Increased personal status and prestige	6.73% 7	27.88% 29	44.23% 46	12.50% 13	6.73% 7	1.92% 2	104	2.84
Better institutional reputation	23.08% 24	16.35% 17	24.04% 25	20.19% 21	10.58% 11	5.77% 6	104	2.78
Geographical location	28.85% 30	11.54% 12	26.92% 28	16.35% 17	11.54% 12	4.81% 5	104	2.69
Potential for advancement	27.88% 29	27.88% 29	20.19% 21	13.46% 14	9.62% 10	0.96% 1	104	2.49
Physical facilities of the institution	31.73% 33	16.35% 17	26.92% 28	18.27% 19	3.85% 4	2.88% 3	104	2.45
Retirement/benefit plan	41.35% 43	26.92% 28	17.31% 18	9.62% 10	0.96% 1	3.85% 4	104	1.98
Perquisites	41.75% 43	30.10% 31	17.48% 18	2.91% 3	0.97% 1	6.80% 7	103	1.83
Family educational opportunities	57.69% 60	9.62% 10	12.50% 13	4.81% 5	4.81% 5	10.58% 11	104	1.76
Spousal employment opportunities	58.65% 61	13.46% 14	7.69% 8	4.81% 5	4.81% 5	10.58% 11	104	1.70

Table 3. Level Of Importance Of Roles And Responsibilities Of A Dean

	Not Important	Somewhat Important	Important	Very Important	Extremely Important	Total	Average Rating
Communication	0.00%	0.00%	6.86%	47.06%	46.08%		
	0	0	7	48	47	102	4.39
Fiscal & Budget	0.00%	0.00%	14.71%	45.10%	40.20%		
Issues	0	0	15	46	41	102	4.25
Faculty Recruitment	0.00%	2.94%	18.63%	40.20%	38.24%		
and Development	0	3	19	41	39	102	4.14
Administrative	0.00%	1.96%	13.73%	53.92%	30.39%		
	0	2	14	55	31	102	4.13
Academic Issues	0.00%	1.96%	19.61%	48.04%	30.39%		
	0	2	20	49	31	102	4.07
Fundraising &	0.00%	6.93%	21.78%	32.67%	38.61%		
Development	0	7	22	33	39	101	4.03
Morale Booster	0.00%	0.98%	23.53%	48.04%	27.45%		
	0	1	24	49	28	102	4.02
Negotiator	0.00%	1.98%	29.70%	45.54%	22.77%		
	0	2	30	46	23	101	3.89
Facilities	0.00%	12.75%	20.59%	43.14%	23.53%		
	0	13	21	44	24	102	3.77
Faculty Mentor	1.96%	16.67%	29.41%	39.22%	12.75%		
	2	17	30	40	13	102	3.44

Strategic Leadership. In the interest of planning for the future and developing strategies to impact engineering education, the survey sought to ascertain the most important issues in the next five years from the deans. The top three responses (average ratings) were fund raising, faculty development, and creating partnerships. As shown in Table IV, the deans suggested that the need to provide sustainability of the academic unit and developing the faculty were the most important issues for the next five years. The recruitment of students was next in the rankings. The deans were also requested to respond to the activities that promote student learning, development, and student success. The highest ratings were focused on the role of knowledge delivery, such as instruction, program quality, advising, and faculty. Table V shows that the faculty have a critical role in implementing student success.

Table 4. Most Important Issues To Address In The Next Five Years

	Not At All	Low	Moderate	High	Very High	N/A	Total	Average Rating
Fundraising / development	0.00% 0	1.01% 1	17.17% 17	24.24% 24	54.55% 54	3.03% 3	99	4.36
Faculty development	0.00% 0	0.00% 0	9.18% 9	46.94% 46	43.88% 43	0.00% 0	98	4.35
Industry support & partnerships	0.00% 0	0.00% 0	12.24% 12	40.82% 40	45.92% 45	1.02% 1	98	4.34
Student recruitment & marketing	0.00% 0	3.03% 3	16.16% 16	27.27% 27	51.52% 51	2.02% 2	99	4.30
Student retention	0.00% 0	3.06% 3	18.37% 18	32.65% 32	44.90% 44	1.02% 1	98	4.21
Fiscal management & resource allocation	0.00% 0	2.02% 2	17.17% 17	38.38% 38	39.39% 39	3.03% 3	99	4.19
Research and technology	0.00% 0	8.16% 8	16.33% 16	24.49% 24	47.96% 47	3.06% 3	98	4.16
Long-range planning	0.00% 0	5.10% 5	16.33% 16	41.84% 41	35.71% 35	1.02% 1	98	4.09
Quality of instruction	0.00% 0	4.04% 4	21.21% 21	42.42% 42	32.32% 32	0.00% 0	99	4.03
Alumni relations	0.00% 0	1.01% 1	27.27% 27	41.41% 41	30.30% 30	0.00% 0	99	4.01
Student services & development programs	0.00% 0	10.10% 10	24.24% 24	47.47% 47	18.18% 18	0.00% 0	99	3.74
Employment opportunities for graduates	2.04% 2	7.14% 7	28.57% 28	37.76% 37	23.47% 23	1.02% 1	98	3.74
Curriculum change	0.00% 0	6.06% 6	46.46% 46	34.34% 34	13.13% 13	0.00% 0	99	3.55
ABET requirements	0.00% 0	11.11% 11	44.44% 44	23.23% 23	19.19% 19	2.02% 2	99	3.52
Governance & decision-making	3.03% 3	19.19% 19	32.32% 32	35.35% 35	9.09% 9	1.01% 1	99	3.29
Admission standards	4.04% 4	18.18% 18	34.34% 34	33.33% 33	10.10% 10	0.00% 0	99	3.27
Administrator training & career development	6.06% 6	21.21% 21	41.41% 41	25.25% 25	5.05% 5	1.01% 1	99	3.02
Affirmative action	12.12% 12	16.16% 16	45.45% 45	12.12% 12	13.13% 13	1.01% 1	99	2.98
Collective bargaining	42.86% 42	25.51% 25	8.16% 8	4.08% 4	7.14% 7	12.24% 12	98	1.94

Table 5. Activities That Promote Student Learning, Development, And Student Success

	Strongly Disagree	Disagree	Somewhat Disagree	Indifferent	Somewhat Agree	Agree	Strongly Agree	#	Average Rating
Quality of instruction	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6.06% 6	38.38% 38	55.56% 55	99	6.49
Quality of the engineering program	0.00% 0	0.00% 0	0.00% 0	0.00% 0	6.12% 6	50.00% 49	43.88% 43	98	6.38
Faculty encouragement	0.00% 0	0.00% 0	1.02% 1	1.02% 1	14.29% 14	35.71% 35	47.96% 47	98	6.29
Quality advising	0.00% 0	0.00% 0	0.00% 0	1.01% 1	13.13% 13	52.53% 52	33.33% 33	99	6.18
Summer / Co-op Internship Opportunities	0.00% 0	1.03% 1	0.00% 0	4.12% 4	15.46% 15	46.39% 45	32.99% 32	97	6.05
Laboratory experiences	0.00% 0	0.00% 0	0.00% 0	4.08% 4	15.31% 15	56.12% 55	24.49% 24	98	6.01
Research experiences	0.00% 0	0.00% 0	0.00% 0	6.06% 6	21.21% 21	53.54% 53	19.19% 19	99	5.86
Student organizations & campus activities	0.00% 0	0.00% 0	0.00% 0	3.06% 3	31.63% 31	54.08% 53	11.22% 11	98	5.73
Financial support	1.02% 1	0.00% 0	2.04% 2	6.12% 6	31.63% 31	43.88% 43	15.31% 15	98	5.60
Other	8.33% 1	0.00% 0	0.00% 0	75.00% 9	0.00% 0	8.33% 1	8.33% 1	12	4.17

IMPLICATIONS & CONCLUSIONS

The purpose of the survey is to determine the career pathways of deans in engineering programs in the United States. Of course, surveys are only a snapshot of a moment in time. However, the results imply that the average age of the dean is in their fifties and male. Most believe that professional engagement is important to their career, and the need for administrative support from the institution is important for them to be effective. To also be an effective dean, communication skills and the ability to manage fiscal responsibilities are essential elements of dean attributes, and most deploy a participative or delegate leadership style. This is supportive by the role and commitment of qualified faculty to provide student learning, and the importance of fund raising to maintain sustainability of the academic college.

As previously discussed in the beginning section, a varied of leadership programs are being offered for faculty development. For the future, the dean's survey suggests that developing communication skills and knowledge of budget matters will be the best attribute or asset for potential dean leadership. From a strategic planning perspective, the importance of hiring qualified faculty and providing worthy development programs that impact student learning and professional growth is recommended. In essence, deans believe faculty should be exposed to different pedagogies and innovative ways of learning that directly impact the overall quality of the engineering program. A similar survey also supports the importance of learning from academic administrators (Besterfield-Sacre, Cox, Borrego, Beddoes and Zhu, 2014).

The survey is intended to provide descriptive information about engineering deans. It may be difficult to discern more detailed information or conclusive opinions from the responses, but the results do provide insight on this collective group. The author suggests that current and potential deans strongly consider participating in leadership development programs, workshops, or seminars that promote the skills of communication and management styles. A recent publication may also provide some insight to be a more effective dean (Behling, 2014). In addition, internal programs offered by the university, or external programs offered by academic organizations that support higher education may be beneficial for new and matured deans. The intent of the dean's survey is to provide some insight of pathways of engineering deans, and hopefully this information may help universities and other organizations develop leadership programs that enhance key skills, and help identify deans with the potential for leading institutional transformation that impact instruction, faculty development, and student learning.

AUTHOR INFORMATION

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REFERENCES

American Society of Engineering Education (2013). http://www.asee.org.

Behling, L. (2014). Resource Handbook for Academic Deans, Jossey-Bass Publications, 3rd edition.

Besterfield-Sacre, M., Cox, M., Borrego, M., Beddoes, K., and Zhu, J. (2014). Changing Engineering Education: Views of U.S. Faculty, Chairs, and Deans. *Journal for Engineering Education*, 103 (2), April.

Bland, C., Taylor, A., Schollen, S., and Weber-Main, A. (2012). Faculty Success through Mentoring: A Guide for Mentors, Mentee, and Leaders. *American Council of Education Series*.

Bright, D. and Richards, M. (2001). The Academic Deanship, Jossey-Bass Publications.

Buller, J. (2007). The Essential Academic Dean, Jossey-Bass Publications.

Bureau of Labor Statistics (2014). Occupational Outlook Handbook, *www.bls.gov*.

Bureau of Labor Statistics (2013). http://bls.gov.

Dean, D., Bracken, S., and J. Allen, (Editors) (2009). Women in Academic Leadership: Professional Strategies, Personal Choices (Women in Academe Series), Stylus Publishing.

Draugalis, J. (1992). Career Paths of Today's Pharmacy Deans and Implications for Administrative Career Planning. *American Journal of Pharmaceutical Education*, 56, Winter Issue.

Higgerson, M.L, and Teddi, A. Joyce (2007). Effective Leadership Communication: A Guide for Department Chairs and Deans for Managing Difficult Situations and People. Anker Publishing.

Johnson, W.B. (2006). On Being a Mentor: Guide for Higher Education Faculty, Psychology Press.

Krahenbuhl, G. (2004). Building the Academic Deanship, ACE/Praeger Series on Higher Education.

Lederman, D. (2010). A lack of leadership. *Inside Higher Education*, December.

Montez, J., Wolverton, M., Gmelch, W. (2003). The Roles and Challenges of Deans, *The Review of Higher Education*, 26 (2) Winter Issue.

Moore, K.M. (1983) The Top-Line: A Report on President's, Provosts', and Deans' Careers. Leaders in Transition: A National Study of Higher Education Administrators. American Council on Education, Washington, DC, and Center for the Study of Higher Education, Penn State University, University Park, PA.

Rosser, V., Johnsrud, L., and R. Heck (2003). Academic Deans and Directors: Assessing Their Effectiveness from Individual and Institutional Perspectives. *The Journal of Higher Education*, 74 (1).

Surveymonkey (2014). http://www.surveymonkey.com.

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