Factors Influencing American Plastic Surgery Residents Toward an Academic Career

Les facteurs qui incitent les résidents en chirurgie plastique américains à opter pour une carrière en milieu universitaire

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Abstract

Background: Plastic surgery residency program directors have an interest in recruiting applicants who show an interest in an academic practice. Medical school achievements (ie, United States Medical Licensing Examination® scores, publications, and Alpha Omega Alpha status) are metrics assessed to grade applicants but may not correlate with ultimately choosing an academic career. **Objective:** This study was designed to investigate factors influencing residents' choices for or against academic careers. **Methods:** A 25-item online questionnaire was designed to measure baseline interest in academic plastic surgery and factors that influence decisions to continue on or abandon that career path. This questionnaire was disseminated to the integrated/combined plastic surgery residents during the 2013 to 2014 academic year. **Results:** One hundred twenty-five respondents indicated that they were currently interested in pursuing academic practice ($n = 78$) or had lost interest in academic practice ($n = 47$). Among all respondents, 92.8% ($n = 116$) stated they were interested in academic careers at the time of residency application, but one-third ($n = 41$) subsequently lost interest. Those residents who retained interest in academic careers indicated resident/medical student educational opportunities (57%) and complexity of patients (52%) as reasons. Those who lost interest cited a lack of autonomy (43%), publishing requirements (32%), and income discrepancy (26%) as reasons. **Discussion:** Many residents report losing interest in academics during residency. Traditional metrics valued in the recruitment process may not serve as positive predictors of an academic career path. **Conclusion:** Reasons why residents lose interest are not easily correctable, but mentorship, adequate career counseling, and research opportunities during training remain factors that can be addressed across all residency programs.

Résumé

Historique: Les directeurs des programmes de résidence en chirurgie plastique ont intérêt à recruter des candidats qui souhaitent mener une carrière en milieu universitaire. Les réalisations en faculté de médecine (indices de l'USMLE, publications et statut à l'AOA) sont des mesures utilisées pour classer les candidats, mais elles ne sont peut-être pas corrélées avec le choix d'une carrière en milieu universitaire. **Objectif:** La présente étude visait à évaluer les facteurs qui influent sur les choix des résidents à opter ou non pour une carrière en milieu universitaire. **Méthodologie:** Les chercheurs ont conçu un questionnaire en ligne de 25 questions pour mesurer l'intérêt de départ envers une carrière en chirurgie plastique en milieu universitaire et les facteurs qui influent sur la décision de poursuivre en ce sens ou non. Ils l'ont distribué aux résidents en chirurgie plastique intégrés ou combinés pendant l'année scolaire 2013-2014. **Résultats:** Au total, 125 répondants ont affirmé s'intéresser à une carrière en milieu universitaire ($n = 78$) ou avoir perdu leur intérêt envers la pratique universitaire ($n = 47$). Dans l'ensemble, 92.8 % d'entre eux ($n = 116$) ont affirmé qu'ils envisageaient de mener une carrière en milieu universitaire au moment de leur demande de

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résidence, mais le tiers ($n = 41$) a ensuite perdu cet intérêt. Parmi leurs raisons, les résidents qui continuaient de vouloir mener une carrière en milieu universitaire ont cité les possibilités d'enseignement aux résidents et aux étudiants en médecine (57 %) et la complexité des cas (52 %). Ceux qui avaient perdu l'intérêt ont invoqué le manque d'autonomie (43 %), les exigences en matière de publication (32 %) et l'écart du revenu (26 %). **Exposé:** De nombreux résidents ont déclaré perdre leur intérêt envers une carrière en milieu universitaire pendant leur résidence. Les mesures habituelles utilisées pendant le processus de recrutement ne sont peut-être pas des prédicteurs positifs d'un cheminement de carrière universitaire. **Conclusion:** Les raisons pour lesquelles les résidents perdent l'intérêt envers la carrière en milieu universitaire ne sont pas faciles à corriger, mais le mentorat, une bonne orientation de carrière et des occasions de recherche pendant la formation font partie des facteurs qui peuvent être abordés dans tous les programmes de résidence.

Keywords

academic medicine, academic surgery, career choice, residency

Introduction

Recruitment of candidates applying for plastic surgery from medical school is a difficult and complex process and is unique to each institution. Program directors exert considerable effort in appropriately selecting residents because the future of the specialty depends a great deal on recruiting individuals committed to advancing the field through research and inspiring and educating the following generations of surgeons. As such, there is a predilection to choose applicants committed to academic plastic surgery and the advancement of the field. It can be particularly challenging for integrated programs, as the applicants have no track record yet in a residency program. Traditional metrics that may appear to correlate with academic prowess and success as a resident include medical school grades and class rank, dedicated academic time, number of publications, United States Medical Licensing Examination® scores, and Alpha Omega Alpha (AOA) status. However, there is no evidence that these correlate with an applicant ultimately choosing an academic career. Indeed, results from a survey of residents we conducted during the 2008 to 2009 academic year revealed that being elected AOA in medical school was a negative predictor in ultimately desiring an academic career (unpublished data).

The aim of this study is to investigate factors influencing integrated plastic surgery residents' choices for or against an academic career path. Our hypothesis is that traditional medical school metrics may not serve as good predictors of residents choosing an academic career.

Materials and Methods

A survey was conducted using an online 25-item questionnaire (Appendix A) specifically designed to measure interest in academic plastic surgery and the factors that influence the decision to continue or abandon that career path. Responses were collected anonymously. The institutional review board at the University of Michigan considered our study exempt due to minimal risk. Using information gathered from the American Council of Academic Plastic Surgeons, we identified the integrated residency programs with active clinical residents within the academic year July 1, 2013, to June 30,

2014. In an attempt to sample the entire population of integrated residents, the program coordinators of each institution were contacted via e-mail with a cover letter and an Internet link to access the survey and were asked to distribute this link to the appropriate residents in their respective programs. If the program contained independent and integrated residents, the program coordinators were specifically directed to distribute the survey only to the integrated residents. Program coordinators were contacted 2 weeks later requesting a reminder be sent to their residents in an effort to improve the response rate.¹

For analysis, we stratified groups based on their initial inclination toward academic plastic surgery and whether they had lost their desire for an academic career. Of the 141 respondents, 16 indicated they were never interested in an academic career (Appendix A, item 20) and were thus excluded from our study.

No personally identifiable data were collected, but demographic information was evaluated including age, gender, medical school graduation year, marital status, and presence of children. Common metrics assessed in the residency recruitment process included the following: AOA status, graduating from a "top 20" research medical school as reported by US News and World Report,² USMLE step 1 score, additional graduate degrees, dedicated research time, and number of publications. These data were collected to evaluate their association with the decision of a career path.

Additional questionnaire items assessed perceptions of academic plastic surgery by evaluating applicant perspectives and behaviors during the interview process. These included whether applicants felt expressing an interest in an academic career would positively impact their applications (Appendix A, items 16 and 17). Also, respondents were asked to demonstrate which aspects of an academic career were attractants or deterrents and what role they could see themselves in as an academician (Appendix A, items 19, 21, and 22).

Data were tabulated using Microsoft Excel (Microsoft, Inc, Redmond, Washington) and statistical analyses performed with Stata 12.0 (StataCorp LP, College Station, Texas). Categorical data were compared using the nonparametric χ^2 test and associations evaluated using odds ratios (ORs). Independent groups t test was used to compare means for interval data. Statistical significance was considered $P < .05$.

Table 1. Demographic Data.^a

	N	OR	95% CI	P
Gender	77 (Male)	0.549	0.26-1.18	.134
Married	66	0.810	0.39-1.69	.583
Children	36	1.094	0.49-2.44	1.000

Abbreviations: CI, confidence interval; OR, odds ratios

^aPredictive value of demographic data for choosing an academic career path.**Table 2.** Medical School Academic Achievements.^a

	N	OR	95% CI	P
AOA	60	1.633	0.79-3.40	.202
Top 20	47	0.825	0.39-1.74	.704
Years of dedicated research time				
None	73	0.602	0.28-1.27	.196
1+	52	1.661	0.79-3.52	.196
2+	17	1.122	0.39-3.26	1.000
3+	11	0.700	0.20-2.43	.746
4+	6	1.216	0.21-6.91	1.000
Number of publications				
None	17	0.636	0.23-1.78	.426
1+	108	1.573	0.56-4.41	.426
3+	62	1.372	0.66-2.84	.461
5+	36	1.850	0.80-4.30	.161
7+	25	1.714	0.66-4.48	.357
9+	21	1.250	0.47-3.36	.806

Abbreviations: AOA, Alpha Omega Alpha; CI, confidence interval; OR, odds ratios.

^aPredictive value of AOA status, graduating from a "top 20" medical school, years taken during medical school to pursue research, and number of publications achieved while in medical school for desire to continue on an academic career path.

Results

Of the 125 participants who met the inclusion criteria for our study, 78 (62%) indicated they remained interested in academic plastic surgery and 47 (38%) reported they had lost interest in an academic career. There was no significant difference between the groups with regard to gender, age, marital status, or presence of children (Table 1). Academic achievements such as AOA status, graduating from a "top 20" medical school, dedicated research time in medical school, or number of publications in medical school also did not differ between groups (Table 2). This corroborates with pilot data from the previous similar survey we conducted for the 2008 to 2009 academic year, indicating that AOA status inversely correlated with the desire to continue on to an academic career. USMLE scores were assessed categorically using ranges of 10. Only the 240 to 249 category was associated with the desire to continue with an academic career path (OR: 3.73, $P = .015$; Table 3). Education debt was also assessed categorically using \$USD50 000 ranges and revealed a trend toward an inverse relationship where higher educational debt burden was associated with decreased interest in an academic career; however, this trend did not reach statistical significance (Table 4).

Table 3. USMLE® Scores.^a

	N	OR	95% CI	P
<220	7	0.221	0.04-1.19	.102
220-229	13	0.674	0.21-2.14	.553
230-239	25	0.716	0.29-1.74	.494
240-249	29	3.733	1.31-10.61	.015
250-259	32	1.766	0.74-4.23	.214
260+	19	0.374	0.14-1.01	.070

Abbreviations: CI, confidence interval; OR, odds ratios; USMLE, United States Medical Licensing Examination®.^aPredictive value of USMLE score for maintaining interest in pursuing an academic career.**Table 4.** Education Debt.^a

	N	OR	95% CI	P
None	29	1.456	0.60-3.53	.513
>\$USD50 000	84	0.801	0.37-1.75	.695
>\$USD100 000	72	0.878	0.42-1.83	.852
>\$USD150 000	52	0.817	0.39-1.70	.708
>\$USD200 000	39	0.508	0.26-1.10	.111

Abbreviations: CI, confidence interval; OR, odds ratios.

^aPredictive value of educational debt burden for maintaining interest in pursuing an academic career.**Table 5.** Residency Academic Achievements.^a

	N	OR	95% CI	P
Years of dedicated research time				
None	87	0.629	0.28-1.43	.313
1+	37	1.591	0.70-3.63	.313
2+	13	8.182	1.03-65.16	.030
3+	2	1.026	0.99-1.06	.530
4+	1	1.103	0.99-1.04	1.000
Number of publications				
None	31	1.129	0.49-2.63	.833
1+	94	0.886	0.38-2.06	.833
3+	70	1.200	0.58-2.49	.711
5+	42	1.129	0.52-2.44	.846
7+	27	0.845	0.35-2.02	.823
9+	21	0.768	0.30-1.99	.626

Abbreviations: CI, confidence interval; OR, odds ratios.

^aPredictive value of years taken during residency to pursue research and number of publications achieved while in residency for wanting to continue on an academic path.

Factors that showed significant direct associations with the desire to continue on to an academic career were dedicated research time in residency and the number of academic faculty at the training institution of the resident. Residents who dedicated at least 2 years to academic pursuits during residency showed a much higher propensity toward an academic career path (OR: 8.18, $P = .03$; Table 5). Also, residents who trained at an institution with at least 11 academic faculty members were significantly more likely to continue pursuing an academic career (OR: 2.50, $P = .044$; Table 6).

Table 6. Number of Academic Faculty.^a

	N	OR	95% CI	P
<5	13	0.960	0.30-3.13	1.000
5+	112	1.042	0.32-3.39	1.000
9+	59	1.350	0.65-2.80	.463
11+	38	2.499	1.06-5.90	.044

Abbreviations: CI, confidence interval; OR, odds ratios.

^aPredictive value of number of academic faculty at primary training institution for wanting to continue on an academic path.

Figure 1. Factors contributing to maintained interest in an academic career. Percentage of respondents who indicate specific factors that positively impact the decision to pursue an academic career.

Eighty-eight percent of respondents reported expressing an interest in an academic practice during the residency application process; however, only 49% reported they were inclined toward an academic practice, 22% were unsure, and 29% were disinclined to ultimately pursue an academic career (Appendix A, item 18). The most common factors that positively influenced respondents toward desiring an academic practice included educational roles and opportunities (57%), complexity (52%), and diversity (40%) of patients (Appendix A, item 22; Figure 1), with the majority favoring a teacher-clinician role (70%; Appendix A, item 19). Factors that tended to influence respondents away from an academic career included bureaucracy or perceived lack of autonomy (43%), publishing requirements (32%), and income discrepancy (26%; Appendix A, item 21; Figure 2).

Discussion

The decision-making process in choosing one's career path is extremely variable and motivated by a myriad of factors.³ Whether choosing the private or academic practice setting, an honest assessment of goals, abilities, and priorities is essential for personal and professional success.

Private practice in either a group or solo environment has many attractive elements such as autonomy and the perception of earning a higher income—a concern noted by 26% of the study population (Appendix A, item 21). Studies in other disciplines, including obstetrics and gynecology (OB/GYN),⁴ radiology,⁵

Figure 2. Factors deterring interest in an academic career. Percentage of respondents who indicate specific factors that negatively impact the decision to pursue an academic career.

dermatology,⁶ and general practice,⁷ have noted the assumption of a lower income potential as a deterrent to an academic practice. Solo practice carries significant risk financially as well as a certain amount of professional isolation, which has been shown to decrease satisfaction among plastic surgeons.⁸ Although the perception of solo practice is the potential for higher income, in actuality, compensation in solo practice and academic practice settings is fairly similar with annual salaries on average \$USD297 000 and \$USD282 000, respectively.⁹

Academic medicine has traditionally been viewed as prestigious and practitioners were honored to be selected to become part of this privileged environment. The primary goals of academicians include advancing the field through research, collaboration, and innovation¹⁰ and teaching medical students and residents. This aspect of academic practice has been shown to attract many physicians^{5,11-13} and was also noted by 57% of our cohort to be an attractive aspect of an academic career (Figure 1). Although the administrative and research responsibilities may be cumbersome when added to the educational and clinical obligations, many academic plastic surgeons remain committed to these research, educational, and administrative ideals.¹⁴ Unfortunately, the number of physicians entering an academic practice has decreased across all specialties,¹⁵⁻¹⁶ and according to a survey of a large cohort of senior academic surgeons, nearly two-thirds of these academic surgeons had stopped performing research before the age of 50.¹⁷ Most commonly cited reasons for discontinuing research were increased clinical load and administrative duties. In addition, government funds for research initiatives in the United States have declined by 7% from 2004 to 2012 compared to total global spending.¹⁸ With less money available to sustain research endeavors, this creates a stressful and highly competitive environment for the physicians who choose to include research as part of their career.

If the field of plastic surgery is to survive, at least a portion of residency positions must be favorable and selective for those who ultimately choose an academic practice. When trying to recruit applicants who are likely to remain in academic practice, our results do not support the use of some of the traditional metrics. Neither AOA status nor a top 20 medical school status was associated with a likelihood of pursuing an academic career.

Similarly, dedicated research time and pre-residency academic productivity failed to predict ultimate interest in academics. Interestingly, a USMLE step I score in the range of 240 to 249 was associated with an almost 4-fold greater interest in academics, whereas no other categorical range, higher, or lower did.

Dedicated research time of at least 2 years during residency was the other significant factor in applicants ultimately choosing an academic career. Having an opportunity to take dedicated time away from clinical activity to focus on academic interests likely plays a role in stimulating and maintaining the desire to pursue academic medicine. In the previous survey,¹⁰ 72% of senior-level academic surgeons reported choosing their ultimate surgical specialties based on their basic science research experience during residency.¹⁷

Zetrenne et al¹⁰ attempted to create a profile of successful academic plastic surgeons by surveying members of the Association of Academic Chairmen of Plastic Surgery (now the American Council of Academic Plastic Surgeons) and identified several common characteristics including ranking in the top third of their medical school class, membership in an honor society, and continuing to seek leadership roles—characteristics indicating a high level of internal motivation. Eighty-two percent attributed having a mentor as a role model as the factor that most significantly affected their career choice. This was consistent with our findings that residents who train in programs with 11 or more academic faculty members are much more likely to choose an academic career path (Table 6). These findings underscore the importance of good mentorship and research training.

This study has several limitations. First, because of the method of distribution, the response rate is impossible to determine with precision as the distribution was at the discretion of the individual program coordinators and may have introduced selection bias. However, in the 2013 to 2014 academic year, there were 502 total integrated plastic surgery residents.¹⁹ With 141 responses, we calculated that our study represents 28% of the total plastic surgery compliment. This is a very representative sample, given the demographic profile, and gives us a very acceptable margin of error of 8.4%.

If the program coordinators did decide to distribute the survey, the residents may have chosen not to respond, allowing for potential nonresponse bias. Additionally, survey research can be limited by several factors including interpretation and recall, which we attempted to minimize by designing a piloted, anonymous survey. Finally, our survey was sent to residents who are currently training and have not yet started their career. Thus, these results must be interpreted within the variables outlined in this study. Despite these limitations, this study outlines several characteristics that may run contrary to preconceived ideas of what factors are indicative of ultimately choosing an academic plastic surgery career.

Conclusion

Traditional metrics that are valued in recruiting plastic surgery applicants may not be valid predictors of an academic career

path. Many residents report losing interest in academic plastic surgery during residency and reasons for this may not be easily correctable, but strong mentorship, adequate career counseling, and sound research opportunities during training remain factors that can and should be addressed across all residency programs.

Appendix A

Questionnaire and Results From Survey

1. What is your gender?	N (%)
Male	88 (62)
Female	53 (38)
2. What is your age?	Mean (SD)
	30.62 (2.87)
3. What year did you graduate from medical school?	Mean (SD)
	2010 (3.37)
4. What clinical year of plastic surgery residency are you in?	N (%)
First clinical year	33 (23)
Last clinical year	25 (18)
Neither ^a	83 (59)
5. What is your current marital status?	N (%)
Single	65 (46)
Married	75 (53)
Divorced	1 (1)
Widowed	0 (0)
6. Do you have children?	N (%)
I currently have children or am expecting	41 (29)
I currently do not have children	100 (71)
7. Were you inducted into the Alpha Omega Alpha (AOA) honor society while in medical school?	N (%)
Yes	71 (50)
No	59 (42)
My medical school did not have AOA	11 (8)
8. Did you graduate from a US News and World Report Top 20 research medical school?	N (%)
Yes	49 (35)
No	69 (49)
Unsure	23 (16)
9. Did you plan to become a plastic surgeon when you entered medical school?	N (%)
I knew I wanted to become a plastic surgeon when I started medical school	13 (9)
I had considered becoming a plastic surgeon when I started medical school	32 (23)
I had not considered becoming a plastic surgeon when I started medical school	96 (68)
10. USMLE step I score?	N (%)
Less than 220	8 (6)

(continued)

Appendix A (continued)

220-229	16 (11)
230-239	28 (20)
240-249	34 (24)
250-259	33 (23)
260 or greater	22 (16)
11. Did you obtain another graduate degree along with your medical doctorate?	N (%)
MD or DO only	127 (90)
MD/PhD or equivalent	4 (3)
MD/MBA or equivalent	2 (1)
MD/MS or equivalent	8 (6)
MD/JD or equivalent	0 (0)
12. How many years of dedicated research time (not overlapping with medical school coursework) did you participate in prior to starting residency (does not have to have been in plastic surgery)?	N (%)
Years of research	N (%)
0	88 (62)
1	35 (25)
2	7 (5)
3	5 (4)
4+	6 (4)
13. How many years of dedicated research time did you participate in during residency (either optional or required)?	N (%)
Years of research	N (%)
0	101 (72)
1	26 (19)
2	11 (8)
3	1 (1)
4+	1 (1)
14. Are you planning to proceed with a fellowship after residency?	N (%)
Yes, craniofacial or pediatric plastic surgery	28 (20)
Yes, microsurgery	31 (22)
Yes, hand surgery	28 (20)
Yes, aesthetic surgery	14 (10)
Yes, other	10 (7)
No	30 (21)
15. How much educational debt from higher education do you currently have (excluding debt being paid for by other family members)?	N (%)
None	35 (25)
Less than \$USD50 000	12 (9)
\$USD50 000-\$USD100 000	13 (9)
\$USD100 001-\$USD150 000	21 (15)
\$USD150 001-\$USD200 000	17 (12)
Greater than \$USD200 000	43 (30)
16. Did you state that you were interested in academic plastic surgery at your interviews during the application process?	Response (%)
Yes	124 (88)
No	17 (12)
17. Did you feel as though demonstrating an interest in academic plastic surgery could/would affect your application success?	N (%)
I thought an interest in academics would affect my application positively	128 (91)
I thought an interest in academics would affect my application negatively	0 (0)

(continued)

Appendix A (continued)

I thought an interest in academics would have no effect on my application	13 (9)
18. Are you currently planning for a career in academic plastic surgery?	N (%)
Definitely yes	29 (21)
Probably yes	40 (28)
Unsure	31 (22)
Probably not	25 (18)
Definitely not	16 (11)
19. If interested in academics, in what role do you see your career?	N (%)
Teacher-clinician (little, if any, research)	53 (38)
Focused researcher	1 (1)
Teacher-clinician and researcher	44 (32)
Unsure	12 (9)
Not interested in academics	29 (21)
20. If not interested in academic practice, did you lose interest during residency?	N (%)
Yes, I lost interest in academics during residency	47 (33)
No, I did not have an interest in academics during residency	16 (11)
Not applicable because I am interested in academics	78 (55)
21. If not interested in academic practice, what factors do you think deterred you? (check all that apply)	N (%) ^b
Bureaucracy or perceived lack of autonomy	61 (43)
Income discrepancy	37 (26)
Lack of research mentors during residency	16 (11)
Lack of career advisory mentors during residency	15 (11)
Location or practice environment	25 (18)
Publishing requirements	45 (32)
Long hours	23 (16)
Other	8 (6)
22. If interested in academic practice, what factors do you think attracted you? (check all that apply)	N (%) ^b
Complexity of patients	74 (52)
Diversity of patient population	56 (40)
Research opportunities	45 (32)
Group practice environment	54 (38)
Salary-based practice	34 (24)
Resident/medical student educational opportunities	81 (57)
Ease of transitioning from resident to attending	29 (21)
Potential for national recognition	23 (16)
Research mentors during medical school or residency	35 (25)
Career advisors during medical school or residency	24 (19)
Other	1 (1)
23. How many publications and accepted manuscripts did you have prior to starting residency?	N (%)
0	21 (15)
1-2	54 (38)
3-4	27 (19)
5-6	13 (9)

(continued)

Appendix A (continued)

7-8	4 (3)
>8	22 (16)
24. How many publications and accepted manuscripts do you have now?	N (%)
Same as when I started residency	34 (24)
1-2 more than when I started residency	32 (23)
3-4 more than when I started residency	31 (22)
5-6 more than when I started residency	16 (11)
7-8 more than when I started residency	6 (4)
>8 more than when I started residency	22 (16)
25. How many academic faculty are members of your section or department of plastic surgery	N (%)
<5	14 (10)
5-8	65 (46)
9-11	22 (16)
>11	40 (28)

^aNeither first clinical year nor last clinical year indicates a resident currently in the middle of training.

^bQuestions 21 and 22 are multiple answer options and the percent reported is of 141 participants who responded.

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References

- Edwards PJ, Roberts I, Clarke MJ, et al. Methods to increase response to postal and electronic questionnaires. *Cochrane Database Syst Rev*. 2009;(3):MR000008.
- US News and World report. Best medical schools: research. 2014. <https://www.usnews.com/best-graduate-schools/top-medical-schools/research-rankings>. Accessed December 19, 2017.
- Davison SP, Clemens MW. Career evaluation and the decision process for plastic surgery graduates. *Plast Reconstr Surg*. 2011;128(2):559-565.
- Cain JM, Schulkin J, Parisi V, Power ML, Holzman GB, Williams S. Effects of perceptions and mentorship on pursuing a career in academic medicine in obstetrics and gynecology. *Acad Med*. 2001;76(6):628-634.
- Bilbey JH, Fache JS, Burhenne HJ. Are there predictors for future academic radiologists? A Canadian survey. *Can Assoc Radiol J*. 1992;43(5):369-373.
- Bergstresser PR. Perceptions of the academic environment: a national survey. *J Am Acad Dermatol*. 1991;25(6 pt 1):1092-1096.
- Lee P, Goldacre M. Views of general practitioners in academic posts about careers in academic general practice: a national survey. *Educ Primary Care*. 2002;13:465-471.
- Streu R, Hawley S, Gay A, Salem B, Abrahamse P, Alderman AK. Satisfaction with career choice among U.S. plastic surgeons: results from a national survey. *Plast Reconstr Surg*. 2010;126(2):636-642.
- Medscape Plastic Surgeon Compensation Report; 2014. <https://www.medscape.com/features/slideshow/compensation/2014/plastic-surgery>. Accessed December 19, 2017.
- Zetrenne E, Wirth GA, Kosins AM, Evans GR, Wells JH. Profiling the association of academic chairmen of plastic surgery. *Plast Reconstr Surg*. 2008;121(5):328e-332e.
- Straus SE, Straus C, Tzanetos K. Career choice in academic medicine: systematic review. *J Gen Intern Med*. 2006;21(12):1222-1229.
- Feng L, Ruzal-Shapiro C. Factors that influence radiologists' career choices. *Acad Radiol*. 2003;10(1):45-51.
- Sanders AB, Fulginiti JV, Witzke DB. Factors influencing resident career choices in emergency medicine. *Ann Emerg Med*. 1992;21(1):47-52.
- Chen JT, Giroto JA, Kitzmiller WJ, et al. Academic plastic surgery: faculty recruitment and retention. *Plast Reconstr Surg*. 2014;133(3):393e-404e.
- Schindler BA, Novack DH, Cohen DG, et al. The impact of the changing health care environment on the health and well-being of faculty at four medical schools. *Acad Med*. 2006;81(1):27-34.
- Pardes H. The promise and risk of academic medicine. *Mayo Clin Proc*. 2005;80(10):1349-1252.
- Ko CY, Whang EE, Longmire WP Jr, McFadden DW. Improving the surgeon's participation in research: is it a problem of training or priority? *J Surg Res*. 2000;91(1):5-8.
- Moses H III, Matheson DH, Cairns-Smith S, George BP, Palisch C, Dorsey ER. The anatomy of medical research: US and international comparisons. *JAMA*. 2015;313(2):174-189.
- Accreditation Council for Graduate Medical Education (ACGME)—Public Reports: number of accredited programs for the current academic year (2013-2014) United States. <https://apps.acgme.org/ads/Public/Reports/Report/16>. Accessed December 19, 2017.