

Medical Students' Exposure to Plastic Surgery: A Cross-sectional Review of Scholarly and Academic Opportunities

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Background: Specialty exposure is most influential in a medical student's decision to pursue plastic surgery training. We aimed to understand what opportunities exist for students through national plastic surgery organizations.

Methods: The American Board of Plastic Surgery, American Society of Plastic Surgeons, and The Aesthetic Society provide online lists of related organizations. Cross-referencing lists yielded 47 unique organizations. Screening for presence of annual meeting and relevance to student and resident education yielded 14 organizations. Bylaws/web-domains were reviewed for information related to the annual meeting, leadership opportunities, membership, grants, and travel scholarships. If available, previrtual/in-person and virtual meeting prices were collected. Lastly, discrepancies between webpage information and phone/email correspondence were noted.

Results: All (100%) organizations welcomed students at annual meetings. Eleven promoted student presentation/submission. Average student registration fee was \$109.3 ± SD\$136.5 compared with \$181.20 ± SD\$157.20 for residents. Of organizations providing previrtual and virtual pricing (n = 10, 71.4%), there was an average price reduction in student registration of \$92 (range: \$0–375). Average student membership was \$31.70/year ± SD \$45.50 compared with \$38.80 per year ± SD \$65.90 for residents. The percentages of organizations offering student research grants, travel scholarships, and national student leadership were 21.4% (n = 3), 35.8% (n = 5), and 28.6% (n = 4) respectively. No organizations had student chapters/committees. All organizations (100%) contained at least one discrepancy between webpage/bylaw and email/phone.

Conclusions: Our results suggest that although national opportunities seem to be limited, a role exists for further engagement, with interested students eager to take the initiative. Virtual conferences present a lower-cost alternative for students and residents. (*Plast Reconstr Surg Glob Open* 2022;10:e4239; doi: [10.1097/GOX.0000000000004239](https://doi.org/10.1097/GOX.0000000000004239); Published online 31 May 2022.)

INTRODUCTION

Over the past decade, integrated plastic surgery residency programs have experienced a rapid upstroke in medical student applicants.^{1,2} Entering the specialty has become increasingly more competitive, as these applicants

represent a subset of students with some of the highest United States Medical Licensing Examination Step 1 and 2 scores, Alpha Omega Alpha Honor Medical Society membership rates, and research productivity.^{2–8}

The most influential factor in pursuing plastic surgery is exposure during one's medical education.^{9,10} More studies extend this claim to any surgical subspecialty applicant, but make special mention of plastic surgery.^{9,11–17} A recent nationwide survey revealed that interested students perceived the coronavirus disease 2019 (COVID-19) pandemic as negatively impacting their education, likely owing to limitations in clinical exposure and mentorship.¹⁸ Moreover, a scoping review validates the importance of mentorship during these unprecedented times.¹⁹ In fact, mentorship specifically by a plastic surgeon was shown to be the most important factor driving students'

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desire to apply when compared with other factors, such as income and lifestyle.^{20–22}

Additionally, recent studies assessing student perception of plastic surgery demonstrated a limited understanding of how plastic surgeons contribute to medicine, quite often underestimating the breadth of procedures and techniques.^{17,23–27} A study from the United Kingdom reports two major reasons: distortion of the field by social media exposure and lack of specialty exposure through curriculums, the latter being a longstanding issue across multiple institutions.^{28–31} The reliance on exposure is even more important for students without home programs.³²

Although exposure to plastic surgery continues to be an institutional-level issue, no studies have assessed the landscape of students' exposure to plastic surgery at state, regional or national levels.^{33–35} This study examines available opportunities related to professional development, academic leadership, and research engagement through national plastic surgery organizations within the United States.

METHODS

This is a cross-sectional study in which data collection occurred during November 2020–May 2021.

Selection Criteria

A total of 47 unique plastic surgery organizations were identified from cross-referencing lists provided on webpages of three accredited sources, including The American Board of Plastic Surgery, Inc., American Society of Plastic Surgeons (ASPS), and The Aesthetic Society. (Fig. 1)

This preliminary list was screened for relevance to the field of plastic surgery by two independent researchers. Once the initial list was narrowed to 23, organizations were further excluded via the following criteria: organization

Takeaways

Question: What is the landscape of educational opportunities for medical students within national plastic surgery organizations?

Findings: A comprehensive review of national plastic surgery organizations reveals that opportunities exist for medical students to attend and present research at national conferences. However, involvement within national committees and leadership is limited. In addition, virtual conferences present a lower-cost alternative for students and residents.

Meaning: Our results suggest that although national opportunities seem to be lacking, a role exists for further engagement with interested students eager to take the initiative.

without annual meetings, local/state/regional or international organizations, and organizations targeting providers of associated plastic surgery procedures other than surgeons, residents, or medical students (eg, physician assistants or nurses). After a final review by the authors, a total of 14 national plastic surgery-related organizations were included for subsequent review.

Data Collection

Two investigators independently reviewed bylaws and webpages of 14 national organizations for information related to the annual meeting, leadership opportunities, organizational membership, grants and travel scholarships (Table 1). Variables relevant to residents were also collected. Descriptive statistics (eg, mean, range, and SD) were used to analyze variables. Gathered variables are described below.

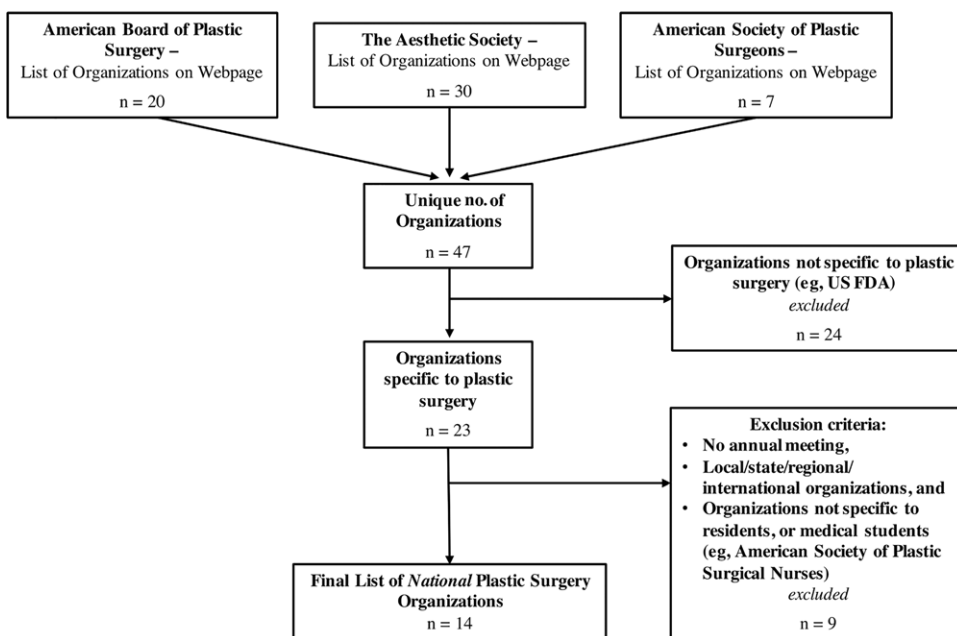


Fig. 1. Methodology for inclusion and exclusion of plastic surgery organizations.

Table 1. National Plastic Surgery Organizational Review

Organization	Annual Meeting	Open to Medical Students	Is Research Presented at Annual Meeting?	Are Medical Students Allowed to Present?	[Medical Student] Cost of Attendance	[Resident] Cost of Attendance	Medical Student National Chapters	Leadership Membership	Student Membership	[Medical Student]		Research Grants/Scholarships (Med Student Specific)		Travel Scholarships (Med Student Specific)	
										Lowest Membership Cost	Lowest Membership Cost	[Resident] Lowest Membership Cost	[Resident] Lowest Membership Cost		
AACS	Yes	Yes	No	—	325	249	No	No	No	—	—	No	No	No	No
AAFPSS	Yes	Yes	Yes	No	150	300	No	No	No	—	—	No	No	Yes	Yes
AAHS	Yes	Yes	Yes	Yes	100	100	No	Yes	Yes	0	0	No	No	No	No
AAPS	Yes	Yes	Yes	Yes	200	200	No	No	No	—	—	No	No	Yes	Yes
ACAPS	Yes	Yes	Yes	Yes	125	125	No	No	Yes	0	0	No	No	Yes	Yes
ACPA-CFA	Yes	Yes	Yes	Yes	40	299	No	Yes	Yes	115	115	Yes	Yes	Yes	Yes
ASCFS	Yes	Yes	Yes	Yes	40	299	No	No	No	—	—	No	No	No	No
ASERF	Yes	Yes	Yes	No	0	0	No	No	No	—	—	No	No	No	No
ASMS	Yes	Yes	Yes	Yes	0	0	No	No	No	—	—	No	No	No	No
ASOPRS	Yes	Yes	Yes	Yes	450	450	No	No	No	—	—	No	No	No	No
ASPS	Yes	Yes	Yes	Yes	0	0	No	No	Yes	25	100	No	No	No	No
ASRM	Yes	Yes	Yes	Yes	0	415	No	Yes	Yes	0	0	Yes	Yes	Yes	Yes
ASSH	Yes	Yes	Yes	Yes	100	100	No	No	No	—	—	No	No	No	No
PSRC	Yes	Yes	Yes	Yes	0	0	No	Yes	Yes	50	50	Yes	Yes	No	No
Count/	14	14	13	11	\$109,30 ±	181,20 ±	0	3	6	\$31,70/y ±	\$38,80/y ±	3	3	5	5
average					136,50	157,20	0	3	6	45,50	65,90				

AACS, American Academy of Cosmetic Surgery; AAFPSS, American Academy of Facial Plastic and Reconstructive Surgery; AAHS, American Association of Plastic Surgeons; ACAPS, American Council of Academic Plastic Surgeons; ACPA-CFA, American Cleft Palate-Craniofacial Association; ASCFS, American Society of Craniofacial Surgery; ASERF, Aesthetic Surgery Education and Research Foundation; ASMS, American Society of Maxillofacial Surgeons; ASOPRS, American Society of Ophthalmic Plastic and Reconstructive Surgery; ASSH, American Society for Surgery of the Hand.

Annual Meetings

Regarding annual meetings, the authors recorded costs of attendance for both students and residents and the lowest available registration fee if rates differed between early-bird and late sign-up fees. Registration fees were noted based on availability at the time of search. In the event that future meeting registration pricing tiers had not been finalized or made publicly available, pricing for the upcoming meeting or that of the last annual meeting was gathered via email/phone communication with organization correspondents. If available, previrtual (ie, in-person) and virtual registration prices were collected (Table 2). In addition, if presentation of research occurred, willingness for the organization to allow student abstract submission was captured. If multiple organizations co-hosted an annual meeting, attendee registration and research opportunities were considered separately.

Leadership, Organizational Membership, Grants/Scholarship

Medical student leadership opportunities were defined as opportunities for longitudinal engagement on executive boards or committees and the ability to represent organizations at in-person or virtual conferences. Organizational chapters or committees for medical student engagement were also noted. Student membership pricing and costs incurred to resident members were also collected and compared. Any research grant or travel scholarships listed as being explicitly available to medical students were noted. Direct phone and/or email correspondence with organizational administration verified information gathered. A period of 4 months was given for organizations to respond. Information available via a public search and what was disclosed following email correspondence with representatives of each organization are noted in Table 3.

Availability of Information

Finally, we assessed availability of information by determining if information mined through web domains varied from information gathered during phone/email correspondence. A discrepancy was noted if a variable was originally unavailable via web domain search and given during email/phone correspondence or if any information changed after email/phone correspondence (Table 3).

RESULTS

Data were collected from a total of 14 national organizations. Our list comprised four general and 10 subspecialty-specific organizations. Subspecialty societies included those specifically focused on advancements in craniofacial, hand, aesthetic, oculoplastic surgery, or microsurgery (Table 1).

Annual Meetings

When assessing information about the annual meeting, all organizations welcomed medical student attendance at the annual meeting (only one required direct correspondence). Of organizations with research presentation (n = 13), 11 (84.6%) promoted openness to medical student

Table 2. Annual Meeting Registration Fees: Pre-virtual and Virtual

Organization	[Medical Student] Cost of Attendance— Pre-COVID (In-person)	[Medical Student] Cost of Attendance—Virtual	Price Difference	[Resident] Cost of Attendance— Pre-COVID (In-person)	[Resident] Cost of Attendance—Virtual	Price Difference
AAFPRS	375	150	-225	500	300	-200
AAHS	150	100	-50	150	100	-50
AAPS	400	200	-200	400	200	-200
ACAPS	125	125	0	125	125	0
ACP-PA	75	40	-35	500	299	-201
ASCFS	75	40	-35	500	299	-201
ASERF	0	0	0	0	0	0
ASRM	0	0	0	415	415	0
ASSH	100	100	0	100	100	0
PSRC	375	0	-375	375	0	-375
Average	167.50	75.50	-92	306.50	183.80	-122.70
SD	156.40	70.20	129.80	192.00	141.00	130.50

Dataset includes organizations in which both prices were confirmed.

research presentation/submission (Table 1). Four of these organizations listed this information on webpages; seven required additional email/phone correspondence.

The average registration fee for medical students was \$109.30 ± SD \$136.50 when compared with resident attendance fee, which was \$181.20 ± SD \$157.20. When examining organizations that provided previrtual and virtual pricing differences (n = 10, 71.4%), we noted an average price reduction of \$92 (range: \$0–\$375) per organization. With respect to residents, a reduction of the registration fee, on average, of \$122.70 (price reduction range: \$0–\$375) per organization was demonstrated. (Table 2). Four (28.6%) organizations listed medical student registration fees as free of charge.

Leadership, Organizational Membership, Grants/Scholarship

Of the 14 organizations, 42.9% (n = 6) of organizations allowed for student membership, whereas 93% (n = 13) offered resident membership. Of these, the membership fee for medical students was \$31.70/year ± SD \$45.50 on average compared with resident membership fees, which averaged \$38.80/year ± SD \$65.90. Additional documentation of educational good standing, institutional plastic surgeon support, and other requirements were noted but not included in this study (Table 1).

The percentages of organizations offering medical student research grants and travel scholarships were 21.4% (n = 3) and 35.8% (n = 5), respectively. Only four out of the 14 organizations had opportunities for medical student leadership at the national level such as American Association of Hand Surgery (AAHS), American Cleft Palate-Craniofacial Association, American Society of Reconstructive Microsurgery (ASRM), and Plastic Surgery Research Council (PSRC), and no organizations contained medical student chapters/committees. (Table 1)

Availability of Information

Information gathered from webpage and bylaw collection was compared with email correspondence for all organizations. (Table 3) All (100%) organizations contained at least one discrepancy between webpage/bylaw review and email/phone response. On average, 25.0% (SD ± 12.2%)

of information related to one of our 12 variables found on websites/bylaws varied from direct correspondence. The variable that varied the most was whether medical students could present research at an annual meeting (n = 10, 71.4%), followed by medical student registration costs (n = 7, 50.0%). Information on whether student chapters existed and whether research was presented at the annual meeting demonstrated no discrepancies. A Welch t-test (ie, two samples assuming unequal variances, null = 0, alpha = 0.05) failed to show a statistically significant difference (P = 0.51) between the incidence of discrepancies found on general compared with subspecialty-specific webpages.

DISCUSSION

A national US study aimed at understanding the current affairs of plastic surgery education within medical school curriculums is lacking. However, UK and Canadian studies have demonstrated that medical students have little exposure to the field during medical school.^{35–37} Amidst the COVID-19 pandemic, exposure to surgical subspecialties has further been limited through institutional restrictions on student observerships, clerkships, and clinical experiences.^{18,19,38} The pandemic prompted exploration into whether opportunities exist for students at the national level. This exploration is especially important for students without home programs who often rely on external opportunities for specialty exposure.³² Our study demonstrates that opportunities within national organizations are limited. We hope to spark a discussion in the academic plastic surgery community about how to improve these opportunities for medical students and to nurture an informed pool of applicants.

Conference Presentation, Registration Fees, and Travel Scholarships

A handful of opportunities seem to exist for students to present research at a national level. Although many organizations welcome student presentations, barriers precluding student involvement still remain. Only four of 11 organizational websites formally advertised whether medical student research was permitted, and only five provided travel scholarships for students, of which, only one, at the time of review, formally advertised such scholarship

Table 3. Availability of Information

Organization	Open to Medical Students	Annual Meeting?	Present?	Are Research Medical Students Allowed to Present?		[Medical Student] Cost of Attendance	[Resident] Cost of Attendance	Medical Student Chapters	National Chapters	Leadership	Student Membership	[Medical Student] Lowest Membership Cost	[Resident] Lowest Membership Cost	Research Grants/Scholarships (Not Travel)	Travel Scholarships	Total % Discrepancy per Organization
				Medical Student	Resident											
AACS	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	17%
AAFPRS	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	25%
AAHS	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	17%
AAPS	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	25%
ACAPS	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	25%
ACP-CA	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	42%
ASCFS	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	25%
ASERF	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	8%
ASMS	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	8%
ASOPRS	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	25%
ASPS	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	17%
ASRM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	42%
ASSH	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	25%
PSRC	0	0	0	1	1	1	1	1	1	0	1	1	1	0	1	50%
Total no. discrepancies per variable	1	0	10	7	5	4	1	1	4	1	2	2	2	0	4	
% of discrepancies per variable	7%	0	71%	50%	14%	29%	7%	7%	29%	7%	14%	14%	14%	0	29%	25%
																Average (per organization) SD
																12%

Table depicts discrepancies between information mined from web domains versus information gathered during phone/email correspondence. 1 denotes the presence of a discrepancy, 0 denotes no change/discrepancy.

on their webpage. Four organizations did provide complimentary student attendance.

Costly conference fees serve as one potential barrier to students. Organizational reviews for other specialties have been conducted.^{33–35,39} Specifically, national otolaryngology organizations demonstrated an average membership fee of \$73 (\pm \$30) for medical students and an average conference fee of \$366 (\pm 300). An ophthalmology review found an average membership fee of \$43 and a mean conference registration cost of \$307 for students. Both otolaryngology and ophthalmology exhibit conference fees of around \$200 more than plastic surgery. Ophthalmology mean membership fees are more comparable to ones seen in this study: \$43 versus \$31.70. However, this does not consider renewal fees or additional documentation required for membership. As described, variability exists across surgical specialties in conference and membership pricing; further investigation is required to pinpoint where plastic surgery lies.

Registration fees alone serve as only one aspect of conference participation. In addition to the up-front fee, attendees incur additional costs, such as for traveling and lodging. Average pricing for such travel and lodging has not been reviewed as per our literature review. However, anecdotally, total expenses (excluding conference registration fees) are typically between \$500 and \$1000.

Leadership and Membership Opportunities

Our study supports the claim that opportunities outside of research presentation (ie, leadership, chapter affiliation, membership, and mentorship) remain limited. Of the organizations that did offer membership, fees were comparable to resident memberships. Moreover, our estimates do not take into account one-time application fees. Many organizations also required letters of recommendation from plastic surgery program directors or affiliated members. With regard to leadership, student committees, school chapter affiliations, positions, and national associations are lacking for interested students. In some instances, associations offered leadership positions on committees (eg, ASRM and ASPs), the Young Plastic Surgeons and Young Microsurgeons committees, respectively. However, such committees are limited to only residents.

Students without Home Programs

Another potential roadblock for interested medical students is the absence of a plastic surgery training program at the student's institution. In fact, although there are 172 allopathic AAMC-affiliated medical schools, there are only 84 ERAS-associated integrated plastic surgery programs.^{40,41} This does not take into account osteopathic programs. Students at these institutions are inherently disadvantaged when it comes to the match. Without a home institution, it is harder to be introduced to plastic surgery early-on, find mentorship, obtain letters of recommendation from plastic surgery faculty, and ultimately have to rely on away rotations for networking, all of which are crucial to a competitive application.^{6,42–48} As a way to mitigate differences in available

opportunities, engagement in national organizations and participation at meetings offers a way to increase applicant competitiveness.

Implications

Many implications arise from the lack of exposure to the field. Studies have shown that the majority of medical students are unsure of which field they will pursue, with only a small portion of matriculating students knowing which specialty to pursue.⁴⁹ Furthermore, studies assessing plastic surgery mentorship have revealed that learner motivation to pursue the specialty heavily relies on guidance and support from mentors, as well as operative exposure to the field.^{9,15–17,19–22} If opportunities to gain exposure to the comprehensive scope of the specialty are not afforded, medical students are less likely to be well-informed for a successful match. As the number of applicants to integrated plastic surgery programs increases, a more comprehensive understanding of what plastic surgery involves becomes increasingly more important.

Opportunities for Improvement

Mentorship

The COVID-19 pandemic demonstrated the need for mentorship relationships for gaining valuable insights into the field of plastic surgery.⁵⁰ There are several ways in which student engagement in plastic surgery could be improved. For instance, establishing formalized mentorship opportunities can easily serve as an initial step to increase involvement. Similar preceptorships have been established at the resident-attending level which can translate to the student level.⁵¹ Perceived mentee benefits include guidance on career choices, away rotations and interviews, introductions to other attending physicians and residents, and avenues to obtain supportive letters of recommendation.²² Interestingly, this mentor-mentee relationship is symbiotic in that mentors have reported increased job satisfaction and benefit from opportunities to meet future plastic surgeons.^{48,52} Given that these relationships are paramount, integration of mentorship programs should aim at earlier introductions to mentors. In a previous study, it was shown that over 59% of mentor-mentee relationships began during the third or fourth year of medical school.⁵² An example of such a program is one by University of California San Diego Diversity, Equity and Inclusion Department – Plastic Surgery Mentorship Program, which works in parallel with ACAPS to provide 1:1 mentorship to students of disadvantaged or underrepresented groups. ASPs has an established mentorship program called Professional Resource Opportunities in PRS Education and Leadership (PROPEL), in which a team of senior and junior plastic surgeons and residents form longitudinal relationships amongst one another. Such a program has the groundwork for student involvement. PSRC also offers a mentorship program for medical students to connect to mentors outside their institutions. This initiative exemplifies the possibility for other organizations.

Table 4. Short List of Travel Scholarships, Research Grants and Scholarships, and Other Resources

	Travel Scholarship	Research Grants/Scholarships	Other Resources/Mentorship
Organizations			
AAFPRS	AAFPRS Foundation Travel Award	—	—
AAPS	Cannon Student Scholarship	—	—
ACAPS	ACAPS Winter Scholarship	—	Paired Orphaned and Sister Mentorship Institutions
ACPA-CFA	ACPA-CFA Travel Scholarship*	Junior Investigator Award	—
ASRM	ASRM Medical Student Travel Grant	Medical Student Research Grant	—
PSRC	—	PSF Combined Research Pilot Grant†	PSRC Mentorship Program
Other			
Arthur L. Gurnes Society	Plastic Surgery the Meeting Scholarship	—	—
Time's UP PRS	Time's UP PRS Scholarship	—	—
PSF	—	Plastic Surgery Foundation Grants‡	—
UC San Diego	—	—	Plastic Surgery Mentorship Program

*Requires email correspondence, not found on website.

†Combined grant is a partnership between PSF and AAHS, AAPS, ACAPS, ASMS, ASRM, and PSRC.

‡Grants require MD support for student application.

Research

Additionally, summer research fellowships offer a way for students to engage in plastic surgery education in an academic setting. These fellowships provide dedicated time to advance student knowledge on plastic surgery research literature, strengthen clinical experiences, and form professional relationships and possible mentorship for future years. One such opportunity is the research program established by ASRM – The Medical Student Research Grant – for students in between years 1 and 2. Of note, correspondence with PSRC staff illuminated knowledge of a PSF combined pilot research grant. Investigation outside of our study noted this grant as a partnership amongst several national organizations. PSRC communication was the only correspondence that explicitly confirmed students as eligible applicants. One stipulation, however, includes that the application be filled out by a medical degree holder (ie, not a medical student). Clearer language about eligible applicants, and more consistency among websites and staff are suggested.

Travel Scholarships

Travel scholarships and virtual conference options alleviate travel costs to medical students and increase accessibility of plastic surgery exposure. As our data have shown, the virtual nature of conferences that occurred this past year allowed medical students to participate in conferences at a decreased cost, albeit in exchange for reduced face-to-face networking. On average, virtual offerings of this past year reduced conference costs on average by \$92.0 per conference for medical students and \$122.7 per conference for residents. However, as conferences transition back to in-person gatherings, prices will inevitably rise again. Travel scholarships, such as the Cannon Scholarship offered by American Association of Plastic Surgeons, work in a similar way as the virtual conferences this year – lowering the financial barrier for medical student accessibility. Also, the ASRM Medical Student Travel Grant scholarship covers three nights lodging at the host hotel and \$500 toward travel expenses.

Table 4 provides a list of opportunities available for students. This list is not comprehensive but provides a starting point for students.

Next Steps

Platforms provided by national organizations can serve as the foundation for further opportunities. One can look to the American Association of Neurological Surgeons' Young Neurosurgeons Committee as a model for an organized effort to mold future surgeon leaders. The committee, in 2014, introduced AANS medical school chapters. Over the span of 5 years, the number of affiliated chapters increased ten-fold.⁵³ This initiative was assessed in 2020. The study found that research productivity and participation in a nationally organized effort correlated with better match success than with highly ranked medical school or residency affiliation. The formation of these chapters allowed for streamlined channels for mentorship, projects, and opportunities for career preparedness. The latter qualities include skills related to decision-making and organization management, refined through event planning, chapter meeting leadership, and submission of yearly chapter reports.⁵³

With this in mind, we suggest consideration of a centralized effort within a governing plastic surgery organization

Table 5. Summary of Recommendations

Summary of Recommendations

- A senior governing plastic surgery organization (specifically ACAPS, or ASPS) acts an umbrella organization for medical student involvement and development
- Said governing body develops a medical student committee elected by member plastic surgeons led by residents/ surgeons
- Said governing body collaborates with other national organizations as partner organizations
- Said governing body forms chapters throughout medical schools with a plastic surgeon representative and elected medical student(s)
- Said governing body creates a database of serious and pursuant medical students
- Said governing body provides a catch-all, annual registration fee that allows access to the following:
 - Educational material,
 - A discounted conference registration fee at partner organizations,
 - A network of volunteer plastic surgeons,
 - A regularly updated schedule of conferences and abstract deadlines, and
 - A database of student and faculty members

(eg, ACAPS or ASPs) that acts as an umbrella organization for medical student involvement and development. An elected medical student committee led by residents and surgeons could spearhead collaboration with partner organizations and formation of medical school chapters with the goal of providing widespread opportunities and access to mentoring and academic development. Table 5 provides a more detailed list of recommendations.

LIMITATIONS

This study is not without limitations. The first limitation is the timing of data collection. This study was conducted during the COVID-19 pandemic, at which time many meetings were being held virtually, thus limiting collection of current registration pricing. To account for this discrepancy, researchers collected fees for previrtual and virtual conferences. In addition, the scope of this review only includes national organizations. Regional, state, and internationally affiliated organizations were excluded. Initiatives at these levels may provide additional opportunities for student involvement. Therefore, our results should not be generalized to the nonnational organizations. More so, our initial data pull utilized only three organizational affiliated lists. However, we believe that our list of 14 organizations is comprehensive of the national organizations in plastic surgery.

CONCLUSIONS

This article serves as a centralized plastic surgery resource for medical students on organizational opportunities in the literature. Our results suggest that although opportunities at the national level seem to be limited, there is a role for further engagement with interested students eager to take the initiative to become involved. Lastly, virtual conferences, piloted as a result of the COVID-19 pandemic, present a lower-cost alternative for both students and residents seeking to engage.

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