SURVEY OF NEW PHARMACY SCHOOLS: INSIGHTS ON STRUCTURE AND PLANNING

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ABSTRACT

The purpose of this study is to provide insights into the structure and planning involved in opening a new school of pharmacy. The authors surveyed Pharmacy CEO-Deans at new schools of pharmacy in the US. A "48- item questionnaire" was developed and administered online through www.SurveyMonkey.com to 23 deans/provosts/presidents of institutions with a "new" school/college of pharmacy. A "new" school/ college of pharmacy was defined as academic entities that have received or are in the process of obtaining pre-candidate or candidate status from Accreditation Council for Pharmacy Education (ACPE). In addition, fully accredited schools that within the past year had started a new branch campus were also included.

At the time of the survey in January of 2008, the authors identified a total of 26 schools or colleges that were at various stages of Pre-accreditation. Additionally, fully accredited schools that had started a branch campus within the past year were also included.

Three schools indicated that they were too early in the process to answer the survey adequately. Twenty-three schools comprised the sample size. Out of the 23 schools, 19 schools responded (83% response rate).

The survey had five sections: organizational structure of the school/college, administrative structure, curriculum structure, faculty structure, and admissions process.

This study provides an insight into the planning of a new pharmacy program including organization, administrative, faculty, curricular characteristics, and admission process. The results may be helpful to entities that are planning to open a new college or school of pharmacy.

Keywords: *New pharmacy school; faculty recruitment; new deans; budget; faculty development.*

INTRODUCTION

According to the accreditation statistics[1] published by the Accreditation Council for Pharmacy Education (ACPE) there are 116 colleges or schools with some level of accreditation. Of these, 23 schools (20%) are yet to obtain full accreditation. The ACPE website (http://www.acpe-accredit.org) lists all new pharmacy school applications as well as accreditation status of existing schools. A cursory look at this website indicates several new schools that have informed ACPE about their intent to start a new pharmacy program.

A recent news piece by *Inside Higher Ed*, elaborates on some of the obvious causes behind so many new schools coming online.[2] The growing number of applications far exceeding enrollment capacities at current schools of pharmacy and pharmacist job openings overshadowing the pool of available people are but to name a few. The Pharmacy Manpower Project[3] has provided a numerical definition in terms of the Aggregate Demand Index[4] to quantify this unequal supply and demand for pharmacists around the country.

This begs the question whether an overwhelming demand for pharmacists is the sole cause behind these new schools opening up or there are other causes as well?

Very little information seems to be available on the logistics and mission behind the opening of these new schools. What is the planning process that is involved in starting a new school of pharmacy? These are some questions posed to the CEO Deans of the new schools/ colleges of pharmacy. This article serves as an important first step to understanding the structure and planning required in starting a new pharmacy school. Additionally, the process involved at the administrative level in opening a new school/college of pharmacy including admissions, curricular, faculty, and organizational structure are delineated.

METHODS

A "48- item questionnaire" was developed and administered online through www.SurveyMonkey.com to 23 deans/provosts/presidents of institutions with a

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"new" school/college of pharmacy. A "new" school/ college of pharmacy was defined as academic entities that have received or are in the process of obtaining pre-candidate, candidate, or continued candidate accreditation status from ACPE. [5]   In addition, fully accredited schools (within the past year) that had started a new branch campus were also included. The list of schools was compiled from the ACPE website, information from colleagues, and the job or position announcements in the American Association of Colleges of Pharmacy (AACP) website and education journals/newspapers. The IRB at the primary author's home institution deemed the survey to be "Exempt" and the study was approved.

The self-administered questionnaire was pilot tested for completeness, clarity, and overall suitability by the authors. The pilot group consisted of faculty members and administrators. Based on the recommendations of the pilot group, the survey instrument and cover letter were emailed to the CEO deans or provosts (if Dean not hired at the time of the survey) of the 23 schools or colleges. The first email announcing the survey was sent out in April 2008 with two follow-up reminders sent in June and August respectively. Responses were collated by SurveyMonkey.com (Portland, OR). SurveyMonkey also generates descriptive statistics consisting of frequencies, percentages, or means for each questionnaire-item. In addition, standard errors and max/min were calculated using MS Excel.

RESULTS
At the time of the survey in January of 2008, the authors identified a total of 26 schools or colleges that were at various stages of Preaccreditation. During preaccreditation, schools are either applying for pre-candidate or candidate status as defined by the ACPE. [5] Additionally, fully accredited schools that had started a branch campus within the past year were also included.
When contacted initially, three schools indicated that they were too early in the process to answer the survey adequately. As a result only 23 schools comprised the sample size (n). Out of the 23 schools, 19 schools responded (83% response rate).
The survey had five sections: organizational structure of the school or college, experience and background of the dean, curricular structure, admissions process, and faculty structure.

A. Organizational Structure
Of the 19 schools that responded, eight (44%) schools were applying for pre-candidate; three had received pre-candidate, four had received candidate status, and 3 schools were fully accredited. One school skipped this section. On average, it took the responding schools 14 ± SE 1.5 months from establishing/announcing the school/college of pharmacy and submitting a formal application to ACPE. Seven schools (39%) had classes

ongoing at the time of the survey while six (33%) were starting in fall 2008. The other five schools had a fall 2009 or later start date. The results of the survey are presented in Table 1.

Ex-Deans (65%) followed by ACPE staff members (41%) were the most common consultants to the new programs while one school reported having used no consultants. The parent institution (72%) was the primary source of funding for most new programs followed by corporate or business entities (16%) and public/state funding (16%) while individual donations (11%) helped start two programs. Fifty-six percent of the parent institutions responding to the survey were a liberal arts college while 28% were a health professions institute and 22% were part of a university system. The results are presented in Table 2.

Fifteen (83%) schools/colleges deemed themselves to be private and 7 (44%) schools indicated that they were faith based. Three schools indicated that they were for-profit institutions. The annual budget for the first two years ranged from one to four million dollars for the majority of the respondents (81%) while three schools had a budget exceeding five million. The average budget when the program was fully operational was reported to be around eight ±0.9 SE million dollars. As shown in Table 2, tuition mean=83%was the highest contributor for the annual budget for all responding schools, followed by state or federal funds (mean=12%) while institutional funds accounted for around 7%.
Most programs (94%) had appointed a dean by the time of the survey. The other administrative positions that were hired or to be hired at these programs were: associate/assistant dean for- academic affairs (89%), student affairs (72%), assessment (39%), clinical affairs (28%), and research (17%); Chair for pharmacy practice (89%), Chair for pharmaceutical sciences (94%), Chair for other department (11%); Director of Experiential Education (89%); and Director of Assessment (33%).

B. Administrative Structure: experience and background of the dean
Of the 19 respondents, 17 answered this section while 2 omitted it. Out of the 17 deans responding, only two had no prior academic administrative experience and two were recruited as deans from outside academia. Seven respondents were erstwhile deans and 11 of them were either an associate/assistant dean or department chair. In terms of academic qualifications, all responding deans had either a pharmaceutical sciences Ph.D. (41%) or a Pharm.D. (53%) while one respondent had a terminal degree from a non-pharmacy background. Table 3 delineates the results of this section.

The reasons for accepting the position of founding dean were cited as either a personal career move (59%),

Table 1: *Demographic Features of New Schools of Pharmacy*

Survey Questions	Percent of Respondents				
Please indicate the accreditation status of your school/college of pharmacy as of 2008	Fully Accredited	Candidate Status granted	Pre-Candidate Status granted	Applying for Pre-Candidate Status	N/A
	16.7 (3)*	22.2 (4)*	16.7 (3)*	44.4 (8)*	N/A
The school/college of pharmacy can be designated as	Private	Public	Faith Based		Non Profit		N/A
	83.3 (15)*	16.7 (3)*	Yes	No	Yes	No	N/A
			43.8 (7)*	56.2 (9)*	83.3 (15)*	16.7 (3)*	
Please indicate the type of sponsorship (if any) in establishing the school/college of pharmacy	Funded Completely by parent institution	Partly or fully sponsored by corporate/business entity	Public/state or community funded	Individual donations	Other funding sources
	72.2 (13)*	16.7 (3)*	16.7 (3)*	11.1 (2)*	5.6 (1)*

* Numbers in ( ) are absolute numbers of respondents

Table 2: *Organization Planning*

Survey Questions	Percent of Respondents				
Please select the reason(s) for starting the school/college of pharmacy?	Need for a branch campus to an existing school/college	Need in a particular state, geographic area, region, or community	Expansion program for parent institution in health professions	Addition to existing health professions	Business opportunity
	16.7 (3)*	22.2 (4)*	16.7 (3)*	44.4 (8)*	N/A
Who served as a consultant to start the program? (Select all that apply)	ACPE Staff member(s)	Ex-Dean(s)	Faculty from other Pharmacy School/College(s)	Other Consultants (Not Pharmacy related)	No Consultants were used
	83.3 (15)*	16.7 (3)*			N/A
Please indicate the expected annual budget for the school/college for the first two years (millions)	Less than $1 Million	$1 Million – $2 Million	$2 Million - $4 Million	$5 Million or higher	N/A
	0.0 (0)*	25.0 (4)*	56.3 (9)*	18.7 (2)*	N/A
	Percent of Categorized Budget				
What is the anticipated percentage of the annual budget for the following categories?	Tuition	Institutional Funds	State/Federal Funds	Other Sources	N/A
	Mean = 83.2	Mean = 6.0	Mean = 12.5	Mean= 6.8	
	Std. Err.= 7.7	Std. Err.=3.3	Std. Err.= 9.6	Std. Err.=1.3	
	N= (15)*				
	Expected Annual Budget				
What is the expected annual budget when the school/college is fully operational (millions)?	Mean = 7.4				
	Std. Err.= 0.9				
	N= (15)*				

* Numbers in ( ) are absolute numbers of respondents

followed by "aligned with the values and mission of the parent institution" (59%), "an opportunity to affect changes in pharmacy education" (53%), "to serve the need of the local community, region, or *alma mater*" (35%). Interestingly, seven (41%) founding deans kept the curricular and organizational structure of the new school the same as their previous institution and five (29%) kept only the organizational structure the same while the remaining five deans charted new territories (Table 3).

C. Curricular Structure
Semesters (89%) were the most common form of curriculum delivery followed by quarters (11%). As shown in Table 4, fifteen responding schools (83%) had a "3 years didactic + 1 year practice experience (4

years)" program, while two schools reported a somewhat unique "2 years didactic + 2 year practice experiences (4 years)" program and one school had a three year (2+1) program.

All of the surveyed schools used active learning techniques in their teaching and some of the common learning techniques mentioned were, Case Studies (94%), Problem based learning (72%). Table 4 illustrates that letter grades were reported by two thirds of the respondent schools while 20% used a combination of letter grades and Pass/Fail, and 11% reported numeric grades only. Remediation was required by 12 schools for an unsatisfactory grade. As shown in Table 4, out of these 12 schools, 6 schools (50%) ask that a student remediate if the grade is D or below, while one school (8.3%)remediates if students

Table 3: *Administrative structure*

Survey Questions	Percent of Respondents					
Please indicate any previous administrative experience of the dean (Select all that apply)	Has prior Experience as Dean	Has prior experience as associate or assistant Dean	Has prior experience as Department Chair	No prior academic administrative experience	Non-Academic background	Has Administrative experience outside academia
	41.2 (7)*	64.7 (11)*	52.9 (9)*	11.8 (2)*	0.0(0)*	11.8 (2)*
Please indicate your highest degree(s) attained	Ph.D. with pharmacy background	Pharm.D.	Pharm.D. and Ph.D.	M.D.	Other Terminal degree with pharmacy background	Ph.D. or other terminal degree with no pharmacy background
	41.2 (7)*	52.9 (9)*	0.0(0)*	0.0(0)*	0.0(0)*	5.9 (1)*
Please indicate the reason(s) for accepting the position of founding dean/current dean	Personal career move	An opportunity to affect changes in pharmacy education	Aligned with the values and mission of the parent institution	To serve the need of the local community, region, or alma mater	Other	N/A
	58.8 (10)*	52.9 (8)*	58.8 (10)*	35.3 (6)*	N/A	N/A
	Number Of Faculty Hires					
Please indicate the number of faculty hires (excluding administrators, experiential directors) for the following years	Year 1	Year 2	Year 3	Year 4	N/A	N/A
	Mean = 7.0 Std. Err.= 1.0	Mean= 10.0 Std. Err.= 1.0	Mean = 11.0 Std. Err.= 2.2	Mean= 11.0 Std. Err.=4.0	N/A	N/A
	N= (18)*					

* Numbers in ( ) are absolute numbers of respondents

Table 4: *Curriculum Structure*

Survey Questions	Percent of Respondents					
The Curriculum is delivered in which of the following?	Semesters	Quarters	Block format	N/A	N/A	N/A
	89.9 (16)*	11.1 (2)*	0.0 (0)*	N/A	N/A	N/A
Please choose the curricular structure that best reflects your Pham.D. program.	3 years didactic + 1 year practice experience (4 years)	2 years didactic + 2 year practice experiences (4 years)	2 years didactic + 1 year practice experience (3 years)	5 years starting from high school	6 years Starting from high school	N/A
	83.3 (15)*	11.1 (2)*	5.6 (1)*	0(0)*	0(0)*	N/A
Which of the following teaching strategies does the curriculum use? (Choose all that apply)	Active learning Techniques excluding Problem based learning	Problem based learning	N/A	N/A	N/A	N/A
	39.0 (7)*	61.0 (11)*	N/A	N/A	N/A	N/A
What is the grading system for the didactic courses in the curriculum, excluding experiential courses?	Letter grades	Pass/Fail only (No letter grades at all)	Combination of both	Numeric Grades	Others	
	66.7 (12)*	0.0 (0)*	22.2 (4)*	11.1 (2)*	0.0 (0)*	
Which of the following technology/ tools are used for curriculum delivery and assessment? (Choose all that apply)	Student Response Systems (Clickers)	Laptops for students (Recommended)	Laptops for students (Mandated)	PDAs	Computer based testing for exams (No paper testing)	
	82.4 (14)*	17.6 (3)*	58.8 (10)*	29.4 (5)*	11.8 (2)*	
Are there public health courses in your curriculum? (Choose all that apply)	No	Yes; required courses (Stand alone)	Yes; Elective courses	Yes; Integrated in other courses	Yes; Part of Experiential courses	
	11.1 (2)*	38.9 (7)*	11.1 (2)*	66.7 (12)*	22.2 (4)*	
Do you require students to remediate if they get an unsatisfactory grade in any of their courses?	Yes	No	N/A	N/A	N/A	
	75.0 (12)*	25.0 (4)*	N/A	N/A	N/A	
What are the remediation requirements in your school?	C to remediate		D or F to remediate		Other remediation requirements	N/A
	Yes	No	Yes	No	Yes / No	N/A
	8.3(1)*	0.0(0)*	50.0(6)*	33.3(4)*	8.3(1)* / 0.0(0)*	N/A
Please describe types of remediation (Select All that apply)	Only Retake Exam		Write a paper		Combination of Retake Exam/ Write a paper	Repeat the practice experience
	Yes	No	Yes	No	Yes / No	Yes / No
	20.0(2)*	10.0(1)*	0.0(0)*	0.0(0)*	30.0(3)* / 10.0(1)*	30.0(3)* / 0.00(0)*
How do you report remediation?	New grade is only reported		Both grades are reported		Pass with Remediation	N/A
	Yes	No	Yes	No	Yes / No	N/A
	8.3(1)*	8.3(1)*	50.0(6)*	25.0(3)*	8.3(1)* / 0.0(0)*	N/A

* Numbers in ( ) are absolute numbers of respondents

score C or below. Eight schools have remediation for all courses (experiential and didactic) while four schools offer it for didactic courses only.

With respect to use of technology, the schools indicated the following preferences: student response clickers (82%), mandated laptops (59%), laptops recommended (18%), PDAs (29%), and computer based testing as opposed to paper testing (12%).

D. Admissions Process

Seventeen schools completed this section while two schools skipped it. Of the 17 schools, 11 use PharmCAS, while four schools would use it in the future and two did not use it at all. PCAT was a requirement for 14 schools to enter the pharmacy program. In terms of prerequisites, 10 schools required either an associate's degree or three year-coursework completion. Three schools required a baccalaureate degree while three schools required a combination of

"minimum of 2 full years of prescribed pre-pharmacy curriculum," "completion of 72 hr pre-pharmacy course requirement," or "66 semester hours." None of the responding schools admitted students out of high school. The average number of science credits including math that schools required for admission was 42±2.6 and the total credits required ranged from 62 to 123 with a mean of 77± SE 5.7 (Table 5).

The admission process at the responding schools used the following, "personal interviews" (100%), "an extemporaneous writing during personal interview" (53%), "a group discussion/group activity session among candidates" (18%), "Other assessments (excluding a math test) during personal interview" (24%). Table 5, delineates the relative weight percentages of differential components like group activities, extempore writing, math test, personal interview or application materials in the admissions process.

Table 5: *Admissions Procedure*

Survey Questions	Percent of Respondents				
Do you use PharmCAS?	Yes	No	May use in the future	N/A	N/A
	64.7 (11)*	11.8 (2)*	23.5 (4)*	N/A	N/A
Is PCAT a requirement?	Yes	No	N/A	N/A	N/A
	82.4 (14)*	17.6 (3)*	N/A	N/A	N/A
What is the minimum qualification required to enter the program?	High School	2 year Associate Degree and/or 3 year coursewok completion	Bachelor's degree	N/A	N/A
	0.0 (0)*	76.9 (10)*	23.1 (3)*	N/A	N/A
What is the average minimum qualification of the entering class?	High School	2 year Associate Degree and/or 3 year coursewok completion	Baccalaureate degree	N/A	N/A
	0.0 (0)*	50.0 (8)*	50.0 (8)*	N/A	N/A
Which of the following does the admission process for students include?	No Interviews only applications	Personal Interview	An Extemporaneous writing during personal interview	A math test during personal interview	A group discussion/group activity session among candidates/Other Assignments
	0.0 (0)*	100.0 (17)*	52.9 (9)*	0.0 (0)*	41.1 (7)*
Credits Required To Enter The Program					
Please indicate the minimum number of science credits and total credits required to be admitted in the program	Total Credits	Science Credits	N/A	N/A	N/A
	Mean = 77.2 Std. Err.= 5.7	Mean = 40.9 Std. Err.= 2.2	N/A	N/A	N/A
	N= (15)*				
Relative Percent Weights Of Items In Granting Admissions					
Please indicate the relative weight (in percentage) of the following in terms of granting admission	Application material	Personal Interview	Extempo writing or math test	Group Activities/ discussions	N/A
	Mean = 63.8 Std. Err.= 6.8	Mean = 26.3 Std. Err.= 3.2	Mean = 10.0 Std. Err.= 3.5	Mean = 2.5 Std. Err.= 2.5	N/A
	N= (8)*	N= (8)*	N= (5)*	N = (2)*	N/A

Numbers in ( ) are absolute numbers of respondents

E. Faculty Structure

In general 69% of the schools reported a Pharmaceutical Sciences and Pharmacy Practice-Administrative Sciences (2 Departments) model followed by Pharmaceutical Sciences and Pharmacy Practice and Administrative Sciences (3 Department model- 13%). Two schools (13%) had more than three departments while one school reported having no departments. One of the schools reported having a two departmental model with Social & Administrative Sciences being housed in the department of Pharmaceutical Sciences (Table 6).

Tenure was offered at 67% of the schools/colleges with teaching, service, and some research (89%) being the primary focus for the program and its faculty. Two schools reported having a research as a major and mandatory component while one school reported teaching as its only focus. On an average the responding schools reported faculty hires (excluding administrators and directors) of 7±1.1, 10±1.4, 11±2.2, and 11±3.6 for years one through four respectively.

Table 6: *Faculty Structure*

Survey Questions	Percent of Respondents					
Please select the departmental structure that best applies to your school/college	Pharmaceutical Sciences and Pharmacy Practice-Administrative Sciences (2 Departments)	Pharmaceutical Sciences and Pharmacy Practice and Administrative Sciences (3 Departments)	More than 3 Departments	No Departments	Not decided yet	N/A
	68.8 (11)*	12.5 (2)*	12.5 (2)*	6.3 (1)*	0.0(0)*	11.8 (2)*
Does the school/college offer tenure?	Yes	No	N/A	N/A	N/A	N/A
	66.7 (12)*	33.3 (6)*	N/A	N/A	N/A	N/A
The primary focus of the school/college is	Teaching	Teaching and community service	Teaching, service, and some research	Teaching, service and a heavy emphasis on research	Other	N/A
	5.6 (1)*	0.0 (0)*	88.9 (16)*	11.1 (2)*	0.0 (0)*	N/A
Which of the following activities are planned to develop the school/college's faculty?	Faculty orientation program	Faculty development seminars/workshops	Paid Membership to AACP and other professional organizations	Support to attend meetings	N/A	N/A
	88.9 (16)*	94.4 (17)*	55.6 (10)*	100.0 (18)*	N/A	N/A
Please select all that apply to your research program	No research program established yet	Developing or have developed research infrastructure including a vision for research, labs, equipment, grant writing support for faculty	Provide seed money for pilot projects	Have or will have graduate programs in the near future	N/A	N/A
	23.5(4)*	76.5(13)*	35.3(6)*	35.3(6)*	N/A	N/A
Please indicate expected level of research activity when fully operational	Small grants and contracts <$100k	Large grants and contracts >$100k	High level of federal (R01) and/or private grants > $1Million	Other	N/A	N/A
	58.8(10)*	23.5(4)*	17.6(3)*	5.9(1)*	N/A	N/A
Does the School/College provide start-up funds?	No	Yes to all faculty	Yes to basic/pharmaceutical science faculty only	N/A	N/A	N/A
	47.0(8)*	47.0(8)*	6.0(1)*	N/A	N/A	N/A
Will faculty be permitted to supplement their salary with monies from their research grants?	Yes	No	Undecided	N/A	N/A	N/A
	53.0(9)*	18.0(3)*	29.0(5)*	N/A	N/A	N/A

*Numbers in ( ) are absolute numbers of respondents

Of the 17 schools that responded to this section, 13 (77%) schools were developing or had developed research infrastructure including a vision for research, labs, equipment, and grant writing support for faculty. In addition to a research program six schools indicated that they provide "seed money" for pilot projects for faculty and six schools indicated having a graduate program in the near future. One school had also established a fellowship program within their research plans. Most of the responding schools (38%) were trying for small grants and contracts <$100k; while 24% were applying for large grants and contracts >$100k and only 18% were applying for high level of federal (RO1) and/or private grants > $1Million.

ACPE (94%) and AACP (78%) were overwhelmingly the main organizations that provided help to faculty to start the new school. APhA, ASHP, and ACCP were some of the other organizations that were listed. For faculty development the following items were listed as top priority by the deans, "support to attend meetings" (100%), "faculty orientation program (89%), and developmental workshops/seminars (94%)," and "paid membership to AACP or other professional organizations (56%)." All responding deans except one who was unsure felt that, "academia can affect changes in the practice of pharmacy and the profession."

The schools (8 each) were evenly split in terms of either providing start up funds to all faculties or no start up at all. Only one school indicated that it provided start up package to the basic science/pharmaceutical science faculty alone. Nine (53%) schools would permit faculty to supplement their salary with research/grant monies while three (18%) schools would not and five (29%) schools were undecided.

DISCUSSIONS

As evident from the survey, the planning involved and the structural characteristics of these new programs are not that different. There is definitely some uniqueness as seen in the planning of the different programs and ACPE seems to have recognized this as strength of the individual program.

AACP and other member organizations should plan on leadership training especially for administrators including deans, associate/assistant deans, and department chairs. Often with this increased demand for administrators and faculty, on-the-job training may not be possible especially when everything is brand new. New deans who are not from academia or without prior administrative experience can plan on identifying mentors from other colleges and the annual AACP meeting can have something to address this issue. A support group for deans of newly formed schools/colleges to exchange ideas and plans is something to be considered as well.

There seems to be an emphasis on the use of technology in the curriculum and that is bound to make an impact on teaching methods. Recent AACP meetings had sessions devoted to educating the "millennials and beyond[6]" which allow schools/colleges to better understand their client base. The survey also indicates that schools are looking to admit students who have more credit hours in terms of prerequisites and prior degrees as well. It was also heartening to see that a majority of the newer schools recognized the need for ongoing research and was not merely interested in being just a teaching school for future pharmacists.

CONCLUSIONS

This study provides an insight into the organization and planning involved in starting a new pharmacy program. The descriptive data on organizational, administrative, faculty, curricular-structure, and admissions process may be helpful to entities that are planning to open a new college/school of pharmacy. With newer pharmacy schools opening up, there are definitely more opportunities for both current and future members of the profession.

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