

## **AC 2010-205: STRATEGIES FOR CREATING AND SUSTAINING A DEPARTMENTAL CULTURE**

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# Creating and Sustaining a Departmental Culture: Ideas for Undergraduate Programs

## Abstract

Each engineering department has a unique departmental culture based on its history, faculty makeup, geography, and a myriad of other factors. While some departments have a long history with a well-established culture and traditions, other departments that have been recently formed are faced with the challenge of creating a culture from scratch. The success of a department in creating and sustaining a desirable culture can have a significant impact on recruiting, retention, and general satisfaction of its undergraduate students. This paper reviews the engineering literature and describes different models and activities which departments have successfully used in this area, including freshman courses, professional societies, departmental traditions, professional development courses, and intentional interactions between faculty and students. These types of activities also serve to shape students' expectations about what it means to enter the engineering profession and help new student identify themselves as engineers.

## Introduction

The Obama Administration recently announced new freedom of information approaches in their Open Government Directive which has, as one of its themes, to “create and institutionalize a culture of open government.”<sup>1</sup> College campuses across the country talk (and act) to “create a culture of sustainability”<sup>2</sup>, as evidenced by eco-based residential villages. W.L. Gore CEO Terri Kelly speaks of creating a culture of “innovation” by “[creating] the right environment where collaboration happens naturally.”<sup>3</sup> While it is clear the phrase “creating a culture” is fairly ubiquitous in modern society across various platforms, a standard connotation of this phrase is much less so. Accordingly, we define the term culture in this work to mean “*the relationships, interactions, activities, and events involving the department, its faculty, and its undergraduate students.*”

As it relates to academia, culture within a department is experienced by the two major stakeholders: students and faculty. Both groups will engage this culture in different ways if exposed to the same event owing to the differences in interactions with the culture. Indeed, even the perspectives of the stakeholders for a specific interaction from a particular group will be different. Accordingly, one can define four main categories to explore this effect:

1. Student Perspective: Student interacting with the departmental culture
2. Student Perspective: Faculty interacting with the departmental culture
3. Faculty Perspective: Student interacting with the departmental culture
4. Faculty Perspective: Faculty interacting with the departmental culture

Note that separating the student and faculty perspective for the same interaction might lead to very different results. Such an approach was realized recently in a work by Budny et al.<sup>4</sup> on student designed surveys. In that study, those researchers asked

Freshman Engineering students at the University of Pittsburgh to do a survey among other Freshman Engineering students on “an issue [the student] thought was important”. If viewed from a faculty perspective, the faculty might surmise that students would ask questions about their future, such as getting a job after graduating, about co-op, about choice of major, about the viability of the field, etc. However, the top ten survey types were not related to their future at all, but focused on present (mostly non-academic) items, such as “getting enough sleep”, “feeling safe on campus”, “romantic relationships”, “homesick”, “campus food options”, etc.

As a first step to explore the issue of creating and, potentially, sustaining a departmental culture, we have focused our efforts almost exclusively on category 3, though we will touch on category 4. Such insights will inform us for future studies on this topic as it relates to category 1 (especially) and category 2.

Our paper is organized as follows. First we provide a literature review on departmental culture and, specifically, as it relates to certain episodes reported in the engineering literature that are related to fostering a certain departmental culture. Second, we provide results from a survey on departmental culture provided to a random sampling of chemical engineering faculty across the United States. Finally, we discuss some of the results of this survey and conclude on what future work is needed in this area.

## **Literature Review**

In this section we will outline the literature which relates to creating and sustaining a departmental culture. In the first sub-section, we will contextualize the issue as it relates to categories 3 and 4. We discuss why departmental culture would be of interest to faculty both as it relates to students and to faculty. Next, owing to its rich literature and relationship to departmental culture, we discuss the concept of organizational identification. Finally, we describe episodes in the engineering literature (both outside and within chemical engineering) as they relate to building a departmental culture.

### *General Literature*

Elliot and Healy<sup>5</sup> linked several factors, including fitting into the campus culture, to student satisfaction, which in turn has been previously linked to student persistence to degree completion.<sup>6</sup> Recently, Billups<sup>7</sup> has identified that students feel the greatest sense of community within their academic departments relative to the university community as a whole. Accordingly, from a faculty standpoint, creating the proper culture for their undergraduate students can directly impact the retention level of students within their program. While it might be easy to conclude that student satisfaction in smaller departments would be greater than larger departments because of an increased level of attention, this was not the case. In particular, the quality and extent (re: type) of these interactions were key features in determining student satisfaction. Accordingly, the development and nurturing of a specific type of departmental culture is a crucial element of student retention, among other goals of a department. Note that all departmental goals are not directly related to student retention. Departments can create a culture which, for

example, supports undergraduate research or emphasizes service learning projects, depending on the mission and vision of that particular program.

Creating aspects of a departmental culture specifically for faculty, Category 4 in our classification, which is quite interesting and well explored in its own right<sup>8</sup>, is not a major focus of the current work. However, when relevant, we provide our survey results where insights on this issue can be gleaned. Note that there are recent notable contributions in this area within the engineering education literature, including a work on how culture change within a department affects new faculty<sup>9</sup> as well as Felder's survey asking the poignant question of whether a departmental culture "fits you".<sup>10</sup>

### *Organizational Identification*

While organizational identification (OI) has had its roots in publications for nearly one hundred years<sup>11</sup>, it has only become a more popular area of research during the past few decades. A useful review on organizational identification was provided recently by Ashforth and co-workers.<sup>12</sup> Specifically, Mael and Ashcroft have defined organizational identification to be "a perceived oneness with an organization and the experience of the organization's successes and failures as one's own".<sup>13</sup> While organizational identification has been formally studied in many areas, most notably for industries<sup>14</sup>, we are most concerned with organizational identification relative to a specific situation, namely a student within a chemical engineering department.

Such studies, unfortunately, do not exist. In fact, research into organization identification within *any* specific type of academic department is very limited. Bullis and Bach provide a turning point analysis of entering graduate students in a Department of Communications as it relates to their organizational identification.<sup>15</sup> They used a retrospective interview technique to map certain episodes against a student's increase or decrease in identification with their department. Certain episodes, such as receiving informal recognition and socialization, resulted in large positive changes in mean identification. On the other hand, doing things outside of the department (such as taking courses in other departments) and episodes which led to feelings of alienation had large negative changes in mean identification.

After a review of the literature, including those articles which have cited the work of Bullis and Bach<sup>15</sup>, it seems that this is basically a one-off study. While one recent work explored organizational identification of fifty undergraduate students at Rowan University taking a health education course relative to the Health and Exercise Science Department using the Organizational Culture Assessment Instrument<sup>16</sup>, most other studies have analyzed academic departments and culture from a faculty perspective.<sup>17-20</sup> Accordingly, our literature review within engineering focuses on what is available, namely those works which provide insights into culture in a broader sense or, where applicable, those episodes which look to create a specific culture.

## *Engineering Education Literature*

While it is not the focus of this paper, it is important to recognize the work that has been done to define the “engineering culture” in both academia and the workplace.<sup>21–26</sup> Society has a perception (or stereotype) about engineering as a profession, and prospective students who are evaluating engineering as a potential major may base their decision on whether they see themselves as fitting that stereotype. In particular, literature in the areas of software engineering and computer science (i.e. the “Geek” mythology) is more fully developed than in other engineering disciplines as it relates to student recruitment and retention issues.<sup>27–30</sup>

There is extensive engineering education literature focusing on retention and attrition, and culture is cited as one factor for students who switch out of engineering or choose not to enter engineering. Seymour and Hewitt<sup>31</sup> note that “...a greater proportion of the problems described by switchers arose from structural and cultural sources rather than problems of personal inadequacy.” These problems include:

- Allegations of poor teaching and faculty unapproachable for help with academic problems (74.5%).
- The feeling of being overwhelmed by the pace and the workload (47.0%).
- Inadequate help and advice from faculty through periods of academic difficulty (45.6%).
- Problems (especially financial) arising when degrees expected to be completed in four years actually take much longer (39.6%).<sup>31</sup>

Shuman et al. in their multi-year study at the University of Pittsburgh state the following with regard to the impact of culture on attrition:

While our efforts offer the potential of reducing attrition, in the long run we believe that we must do better at fulfilling the expectations and needs of our students. To do this means seriously addressing the “structure” and “culture” of the engineering educational experience, and developing additional creative solutions that will facilitate the desired structural and cultural changes.<sup>32</sup>

They further discuss attrition interventions including revision of the freshman engineering curriculum (including mentor-driven cooperative learning groups) and an increased emphasis on cooperative education at the upperclassmen levels.

Some engineering programs are intentional in choosing to create a culture with a particular focus. For example, Chamberlain and Benson describe their efforts to define engineering as part of a community of practice through undergraduate research projects in El Salvador with Engineers without Borders.<sup>33</sup> In response to high student attrition rates, an overloaded curriculum, and a perception of superficial learning and lack of integration on the part of students, Central Queensland University developed a unique

program to integrate co-operative education, specific development of professional practice skills, and a problem based learning curriculum.<sup>34</sup> Cambridge University seeks to introduce concepts of sustainable development into its Department of Engineering. Fenner et al.<sup>35</sup> comment on the process of overcoming barriers to changing the “culture” to one that incorporates sustainability, describing the academic culture as one of “specialization” and discussing a “machine” model of the organization in which processes dominate and each layer does their part to change overall. Tierney<sup>36</sup> provides a useful literature review on some older works concerning culture in higher education as well as defining a framework for organizational culture, including environment, mission, socialization, information, strategy and leadership. He demonstrates in a qualitative way the use of this framework for a community college. Stevens et al.<sup>37</sup> explore, among other dimensions, students forming an identity of an engineer across four different schools. A very recent work by Godfrey and Parker<sup>38</sup> examines data from about ten years ago from a school of engineering in New Zealand concerning a variety of aspects of both student and faculty culture. They identify a framework of six dimensions of culture and explore these categories with useful, specific comments from students and faculty. They conclude that this framework can be useful for follow-on studies, including for those institutions looking specifically to change their culture.

Finally, some newly formed engineering colleges are faced with the challenge of creating a culture from “scratch”. Rowan University, created in 1992 through a direct gift of \$100 million from entrepreneur Henry M. Rowan, had the unique opportunity to define its own culture and put processes and curricula in place to achieve it. Marchese et al. describe efforts to infuse an entrepreneurial culture at Rowan by creating an eight-semester Engineering Clinic course sequence, establishing an Undergraduate Venture Capital Fund to support student inventions, creating the Technological Entrepreneurship Concentration, and building the South Jersey Technology Park and Technology Business Incubator adjacent to the Rowan campus.<sup>39</sup> Slater et al. in their departmental profile of the Chemical Engineering Department at Rowan highlight their “hands-on, minds-on” approach through in-class cooperative problem solving, experiments and demonstrations, computer exercises, and small-scale and semester-long projects.<sup>40</sup> Also, Hamilton et al. describe the successes and challenges of starting an engineering college at the National Military Academy of Afghanistan.<sup>41</sup> They highlight the use of face-to-face and distance mentoring, cultural and ethical challenges, faculty development, providing resources and equipment, and ensuring the continuity and sustainability of programs. Finally, the reader may want to consult the article by Rugarcia et al. on methods to establish a culture for a research university that maintains a strong engineering education emphasis.<sup>42</sup>

It must be noted that there are unique issues associated with students who enroll in engineering programs. In particular Steele notes that “students who major in science, technology, engineering, and mathematics [STEM] seem to have additional transitional concerns beyond the normal developmental tasks.”<sup>43</sup> She highlights specific concerns for STEM students, including making the transition from high school to the rigors of college work, questioning their choice of major, and integrating academic and career advising.

## *Chemical Engineering Literature*

In general, the chemical engineering literature has four classifications of articles that we categorize as developing or sustaining a departmental culture:

- Chemical engineering courses aimed at retention – (a departmental stakeholder cultural decision)
- Bringing communication, soft skills, etc. into ChE curriculum (a departmental stakeholder decision)
- The use of active learning and other ways to improve retention (if faculty members embrace these teaching concepts, they can modify the culture so that the students feel more engaged in the learning process and take ownership of their own learning).
- The development of novel curriculum approaches and/or department level involvement (a departmental stakeholder cultural decision)

Each of these classifications will now be discussed. In many cases, the concept of retention is linked to an early introduction to softer skills. For example, Willey and Price<sup>44</sup> integrate safety and environmental issues into freshman engineering design projects. Mainstream ChE freshman courses<sup>45-47</sup> often address communication, time management, university life, and establishing a connection to the department. The actual introduction of ChE fundamentals may not be a priority. Additional approaches in the first year course include student portfolio development<sup>48</sup> and bringing writing into the curriculum<sup>49</sup>, where the authors advocate a combined model to use writing as a method of teaching and learning as well as providing students with the writing skills needed to succeed within the discipline. A good list of additional references for first year chemical engineering courses is available in the literature<sup>50</sup>.

The use of communication and soft skills is not limited to the freshman year. Bendrich<sup>51</sup> describes a two credit hour course that introduces critical thinking skills, computer applications, obtaining information, technical writing, presentation skills, discussion and listening skills, and real life applications for ChE students. Newell et al.<sup>52</sup> use the learning combination inventory to teach students about learning styles and their importance in the ChE workplace. Dickson<sup>53</sup> advocates a business-based curriculum within ChE courses to prepare students for their careers. Streicher et al.<sup>54</sup> use simulation to engage students in the learning process. Silverstein<sup>55</sup> uses the national AIChE conference as a forum for students to complete a team-based fact-finding project. Additional integration of soft skills throughout the curriculum includes international programs<sup>56</sup>, the use of undergraduate research<sup>57</sup>, team training<sup>58-60</sup>, and cultural diversity<sup>61</sup>.

A culture of active learning can have a strong influence on student retention and performance both while in school and beyond. In a two paper series, Bullard and Felder<sup>62,63</sup> describe the process by which they teach the material and energy balance course. A large component of this sequence is the use of in-class exercises. Students are also placed into groups based upon their ability level and learning style. This teaches students skills needed in the workplace. They have created a classroom culture that

promotes positive interdependence, individual accountability, face to face interaction, development of interpersonal skills, and team self assessment. It must be noted that the department's commitment to this teaching style includes providing extra teaching assistant help. Additional summaries of the use of active learning are provided by Keith et al.<sup>50,64</sup> Alternative approaches to active learning include the use of industrial training<sup>65</sup> and Six Sigma methodology<sup>66</sup>.

Some departments have taken the approach to redesign their curriculum to better train students for their careers. Most notable are the efforts at Worcester Polytechnic Institute (WPI)<sup>67</sup> and The University of Pittsburgh<sup>68</sup>. For example, previously at WPI, four ChE courses were taught per year (with two in the fall semester and two in the spring semester). Now in their "spiral curriculum" there are four half semester "levels" where aspects of each course is taught in an integrated manner, and each level feeds into the next level. Thus, the sophomore courses in material and energy balances, classical thermodynamics, mixture thermodynamics, and staged separation processes are now replaced with the four levels: material balances and stoichiometry, McCabe-Thiele methods for binary distillation, property changes on mixing, and chemical reaction equilibrium.

## Survey Results

In order to identify the program characteristics which we hypothesize are important when developing and sustaining a department culture, an online survey was conducted of 660 chemical engineering faculty members across the United States. The participants were randomly selected from a pool of 2641 current and former faculty members affiliated with chemical engineering departments. Research, emeritus, adjunct, and administrative (beyond department head/chair) faculty were removed from this list prior to selection of invited respondents. From this pool of 660 (including approximately 50 whose email invitations were not successfully delivered), sixty-one complete responses (9.1%) were received representing at least 57 institutions. The survey was conducted between November 23, 2009 and December 31, 2009.

The survey included questions on the following topics: AIChE student chapter activities and participants; department contact with students including student advising, recruiting, mentoring, research, and relevant course content; deliberate attempts by the faculty to influence the culture; contact with alumni; and the respondent's characterization of their department culture. A print version of the complete survey instrument is included in Appendix A.

### *Importance of Department Culture*

A majority of respondents indicated that there has been deliberate consideration of department culture amongst their faculty. A majority (31 or 50.8%) indicated the topic had been discussed at a faculty meeting with the past year, and an additional 12 (19.7%) respondents indicated it had been discussed within the past five years. In addition to the

formal discussion, there had been informal discussions amongst faculty (42 or 68.9%) and between faculty and students (31 or 50.8%).

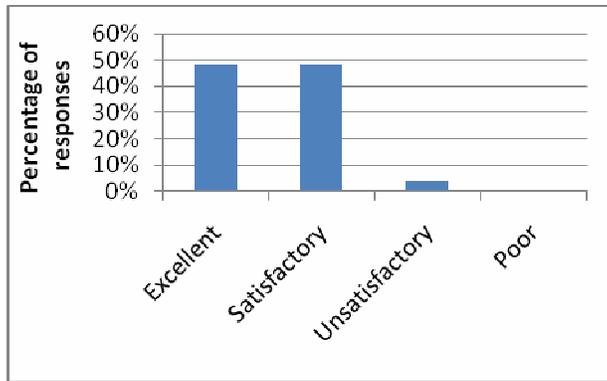
The survey asked whether deliberate efforts beyond discussion were made by various constituents of the department to establish or alter the department culture. The university, college, or school administration (9 or 14.8%); the department administration (18 or 29.5%); the department faculty (33 or 54.1%), and students (21 or 34.4%) were all identified as making that effort.

When further queried regarding program characteristics the department has sought to improve, the three most common responses were undergraduate research participation, faculty advising, and interaction between faculty and undergraduates. Results for this question are given in Table 1.

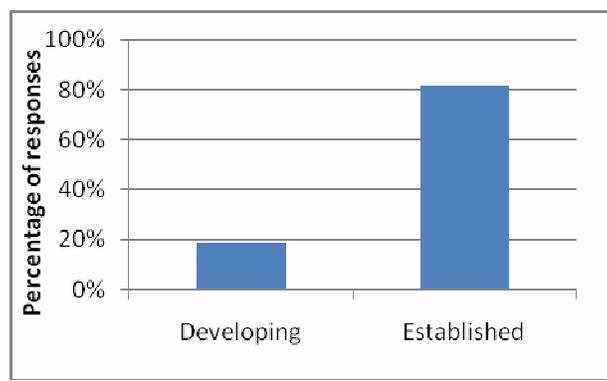
**Table 1.** Program characteristics for which the respondent or department deliberately created a strategy, event, activity, policy, or other decision to address.

<b>Episode</b>	<b>Count</b>	<b>Percentage</b>
Undergraduate participation in research	43	70.5%
Quality of faculty advising	32	52.5%
Interaction amongst faculty members and undergraduates	31	50.8%
Interaction amongst undergraduates	29	47.5%
Academic/Course support	27	44.3%
Student retention	22	36.1%
Increased enrollment of underrepresented groups	22	36.1%
Interaction amongst faculty members	15	24.6%
Quality of professional (non-faculty) advising	13	21.3%
Participation in student organizations (not AIChE)	12	19.7%

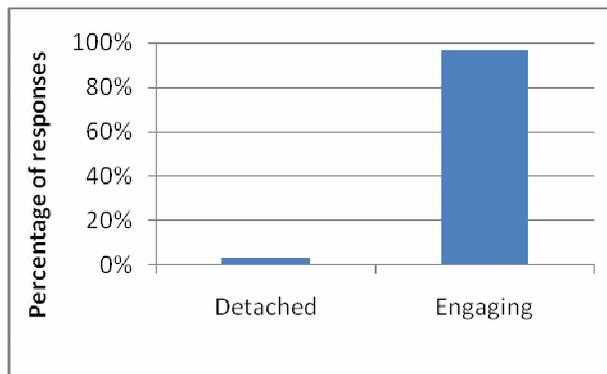
Respondents were also asked to select from amongst a list of terms intended to summarily describe their department's culture. The survey indicated that most are satisfied with their department culture and describe it as well established or improving. It is notable that less than half of respondents chose to describe their department culture as engaging or a contributor to recruiting and retention. Responses for related groups of descriptors are given in Figures 1-5. The sample size was 61 for all of these figures.



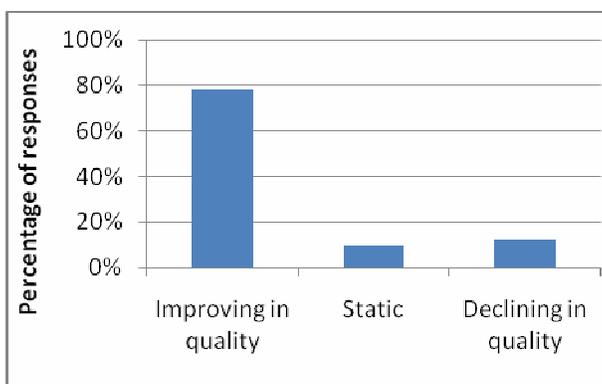
**Figure 1.** Responses regarding the overall quality of department culture.



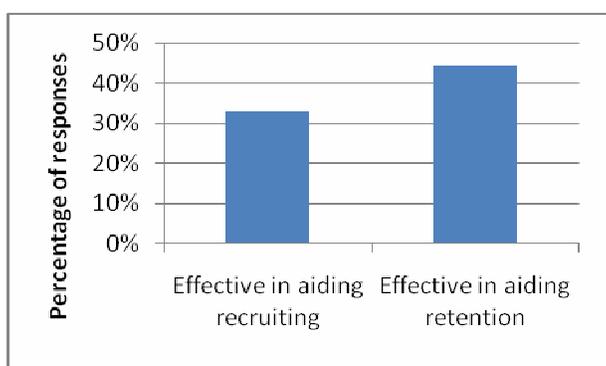
**Figure 2.** Responses regarding the status of department culture.



**Figure 3.** Responses characterizing the contribution of culture to relationships.



**Figure 4.** Responses characterizing the status of the quality of department culture.



**Figure 5.** Responses regarding the role of department culture contributing to recruiting and retention.

#### *Role of potential contributing activities*

The survey also sought to characterize departments by levels of participation in activities thought to contribute to department culture.

Most responders (59 or 96.7%) indicated their department had an active AIChE student chapter. Within these chapters, there is a significant increase in the participation level as students move from the first year (28 or 45.9%) to the sophomore year (52 or 85.3%). Faculty members participate in AIChE activities at about half of the programs surveyed (30 or 49.2%).

The first contact of a department with its students may contribute to whether a student identifies primarily with their home department rather than some other organization within the University. In addition to the modes of contact listed in Table 2, respondents mentioned freshman advising, AIChE social events, a department “fair,” presentations to first-year students, and discussion forums for first-year students.

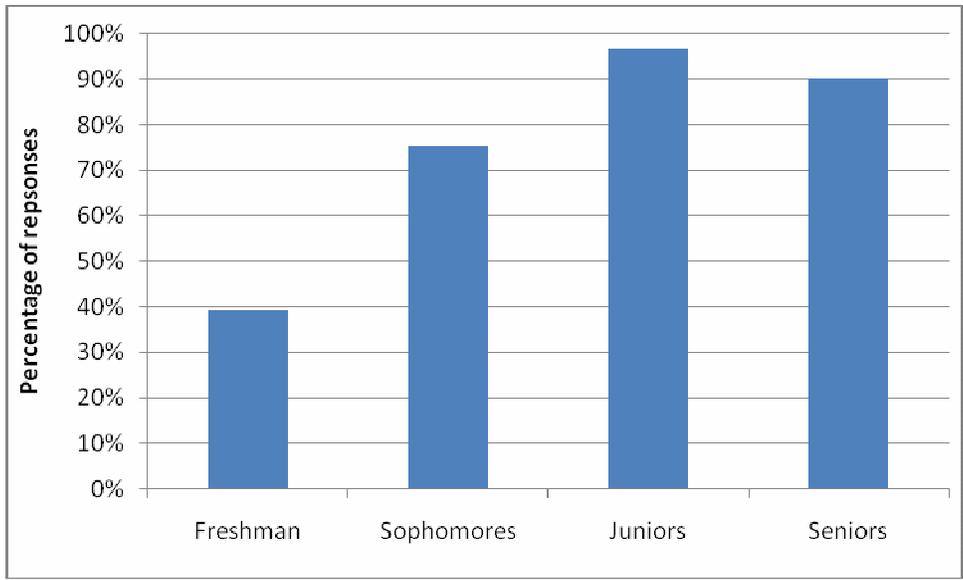
Table 2. Mode of first contact with first-year students.

<b>Response</b>	<b>Count</b>	<b>Percentage</b>
Prior to arrival through phone, email, or postal mail contact	19	31.2%
At a campus orientation program	35	57.4%
At social events at which both undergraduates and faculty members attend	27	44.3%
In courses taught by department faculty and targeted at freshmen	46	75.4%
Other	12	19.7%

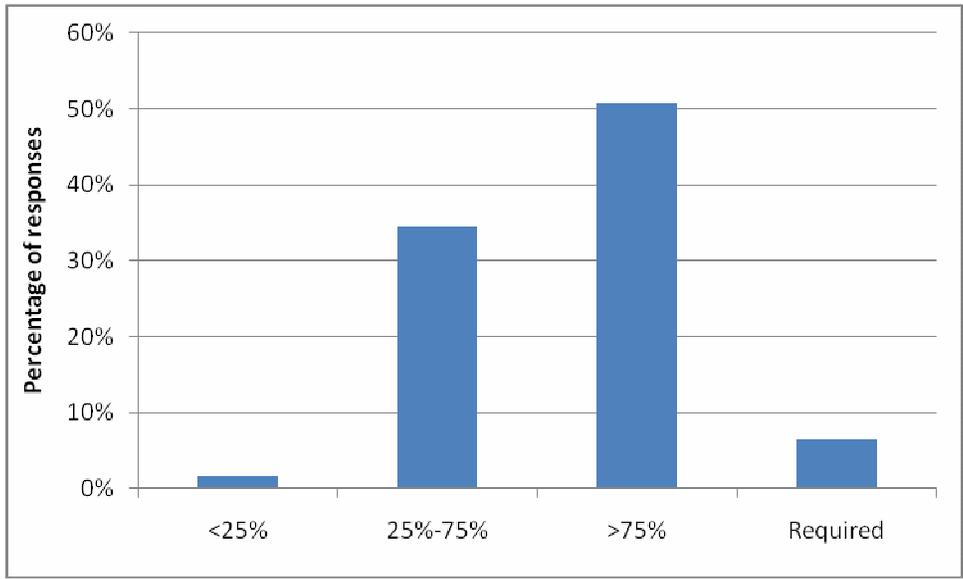
Advising can be a very personal interaction between a student and a faculty member since the student needs to communicate his or her personal goals and objectives. The faculty member will often share relevant personal anecdotes or recollections to aid the student in planning his or her career. Respondents indicated that students are advised individually in most cases (51 or 83.6%), though at some institutions advising is handled exclusively in groups (3 or 4.9%), in both groups and individually for all students (11 or 18.0%) or in groups and individually depending on class standing (3 or 4.9%).

Many institutions offer special programs to aid various constituencies to succeed in the university environment. Since support programs are likely to improve the morale and enhance the skill sets among those participating, they can be important contributors to a department culture. Most institutions offer mentoring programs for students with a focus on freshmen (30 or 49.2%), women (30 or 49.2%), and/or minorities (36 or 59.0%). A majority of institutions also address the faculty side of the relationship by offering formal mentoring for new faculty (38, 62.3%).

While a few institutions may intend to prepare their students primarily for research and graduate study and others primarily for industrial practice, most institutions have students who pursue both career directions. Most institutions represented in this survey indicated that industry plays an active role in the undergraduate program (35, 57.4%). Most institutions indicated student participation in undergraduate research, with a significant number of institutions having students participate as early as the first year (Figure 6). The numbers of students participating vary widely, with the median falling around the 50% participation mark (Figure 7).



**Figure 6.** Years in which undergraduates are involved with an institution’s undergraduate research program



**Figure 7.** Percentage of graduates engaging in undergraduate research at the respondent institution

The curriculum is another tool available for a department to impact the relationship between a faculty and its students. Over 80% of respondents indicate that a course exists which is designed to impact culture (6 or 9.8%), does affect the culture (19 or 31.2%), or has potential to do so by virtue of the content of the course such as a professional development course (24 or 39.3%).

## Discussion and Conclusions

In this work we have reviewed the literature on creating a culture within an academic program. No work was found that directly discussed this issue in engineering, and we have provided only activities within engineering and, specifically, chemical engineering, which might be utilized to create a specific culture. However, the various reported activities (for example, increasing communications, utilizing active learning, etc.) are *not* the culture of a department.

Our survey of chemical engineering departments across the US provides a first glimpse at departmental cultures. A majority of faculty have reported that culture is discussed in their department, with their most popular activity being a strategy focused on undergraduates participating in research. This supports the notion for a departmental culture which encourages this activity. Also, a majority of survey respondents report deliberate efforts which focus on student advising as well as supporting undergraduate/faculty interactions. These items reflect, somewhat, the work of Billups<sup>7</sup> related to specific student-faculty interactions. What has not been gleaned at all from our survey, however, is the effectiveness of any of these activities at creating a desired culture. Indeed, further analysis is needed to identify the specific types of cultures that chemical engineering departments across the US foster, how (re: episodes) such a culture is cultivated, and whether it is effective from both a faculty (category 3) and student (category 1) perspective. Our initial survey has provided useful feedback which will both inform and direct such data gathering for the future.

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## Appendix A. A printable version of the online survey instrument.

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### Survey of Chemical Engineering Department Culture

Learning about how departments create and/or sustain a particular culture

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#### Demographics

This first set of questions is intended to categorize the responder. We will not share this information with anyone.

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Name What is your name?

Please write your answer here:

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University What is your institution?

Please write your answer here:

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Department What is the name of your department?

Please write your answer here:

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Rank What is your rank and title?

Please write your answer here:

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#### Department Culture Survey

This survey is intended to collect information on how departments interact with their undergraduate students. When the terms "Department Culture" or "Culture" are used in the following questions, they refer to the relationships, interactions, activities, and events involving the department, its faculty, and its undergraduate students.

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AIChE Is your AIChE student chapter active?

Please choose \*only one\* of the following:

- Yes
- No

AIChE Follow Please indicate characteristics of your chapter activities and the students involved as appropriate.

Please choose \*all\* that apply:

- The chapter is a Chem-E Car competitor (regional or national)
- Freshmen are typically involved with chapter activities
- Sophomores typically involved with chapter activities
- Faculty typically participate in chapter activities

EarlyContact When does your department administration and faculty have contact with most of its freshman undergraduates?

Please choose \*all\* that apply:

- Prior to arrival through phone, email, or postal mail contact
-

- 
- o At a campus orientation program
  - o At social events at which both undergraduates and faculty members attend
  - o In courses taught by department faculty and targeted at freshmen
  - o Other: \_\_\_\_\_

HowAdvised How is advising handled by the department?

Please choose \*all\* that apply:

- o In groups
- o Individually
- o Both in groups and individually for all students
- o Both in groups and individually depending on class standing

Mentoring Does your institution or department offer mentoring programs for

Please choose \*all\* that apply:

- o Freshmen
- o Women
- o Minorities
- o All new faculty

GradStudy How do students find out about opportunities for graduate study upon completion of the undergraduate degree?

Please choose \*all\* that apply:

- o Informally or not at all
- o As part of a course
- o Through the AIChE student chapter
- o Other

Industry Does industry play an active role in your undergraduate program?

Please choose \*only one\* of the following:

- o Yes
- o No

UGResearch At what points are undergraduates involved with your department's research activities?

Please choose \*all\* that apply:

- o Freshman year
- o Sophomore year
- o Junior year
- o Senior year

PartResearch How many of your students participate in undergraduate research activities?

Please choose \*all\* that apply:

- o It is required for graduation
- o 25% participate at some point
- o between 25% and 75% participate at some point
- o more than 75% participate at some point

Courses Does your department offer courses with any of the following characteristics?

Please choose \*all\* that apply:

- o A required professional development course
- o Courses intended to impact the relationship between students and faculty
- o Courses that do significantly affect the department culture (even if unintended)

CultureDiscussion Has the topic of "department culture", or the working relationship between the department faculty and its undergraduate students, been discussed:

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Please choose \*all\* that apply:

- at a faculty meeting in the past year
- at a faculty meeting in the past 5 years
- informally between you and other faculty members
- informally between you and undergraduate students

Deliberate efforts Have there been deliberate efforts made to establish or alter the department culture by:

Please choose \*all\* that apply:

- the university, college, or school administration
- the department administration
- the department faculty
- students or student organizations

Episodes Which of the following types of situations have you or your department deliberately created a strategy, event, activity, policy, or other decision to address:

Please choose \*all\* that apply:

- Academic/Course support
- Quality of faculty advising
- Quality of professional (non-faculty) advising
- Participation in other student organizations (not AICHE)
- Undergraduate participation in research
- Interaction amongst undergraduates
- Interaction amongst faculty
- Interaction amongst faculty and undergraduates
- Student retention
- Increased enrollment of underrepresented groups

Describe Culture Would you describe your department culture as it involves undergraduate students as (check all that apply):

Please choose \*all\* that apply:

- Developing
- Established
- Improving in quality
- Static
- Declining in quality
- Excellent
- Satisfactory
- Unsatisfactory
- Poor
- Detached
- Engaging
- Effective in aiding recruiting
- Effective in aiding retention

Graduation Upon graduation, does your department:

Please choose \*all\* that apply:

- Host activities or events for/with undergraduate students outside of commencement exercises
- Actively maintain contact with alumni through newsletters or other means
- Engage alumni with the department as undergraduate mentors
- Engage alumni with the department to facilitate professional networking
- Engage alumni with the department as guest speakers
- Engage alumni in other ways

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DescribeCulture long Please describe your department culture.

Please write your answer here:

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Culture Change Please describe how you believe your department culture should change and how that change should be implemented.

Please write your answer here:

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#### Follow-up

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Followup May we contact you by phone or email for a more detailed interview on this topic?

Please choose \*only one\* of the following:

- Yes
- No

PhoneNumber What is your phone number?

Please write your answer here:

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Email What is your email address?

Please write your answer here:

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Submit Your Survey.

Thank you for completing this survey.

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