

Survey Design & “Creating Change: Reforming Curricula for a 21st Century Education”

The research team at Michigan State University (MSU) conducted a pile-sort cluster analysis to place the skills and key phrases from the literature summary into “like” groups. A second iteration of the cluster analysis process was conducted with the research partner representatives from APLU and UIC to finalize and name the 7 Soft Skills Clusters:

1. Experiences
2. Team Skills
3. Communication Skills
4. Leadership Skills
5. Decision Making / Problem Solving Skills
6. Self-Management Skills
7. Professionalism Skills

Each cluster includes seven descriptive characteristics (see pg. 9). **Drawing from the literature and expertise of the APLU and UIC research partners, all of the soft skills are considered valuable and each of the descriptive phrases within the clusters represent positive characteristics.** Survey participants rank order the descriptive characteristics within each Soft Skill Cluster, after which they rank the 7 clusters for perceived importance. Force ranking is considered a powerful form of survey data as it represents a comparative decision and not just an opinion (as in rating). In the survey, a rank represents a choice, discriminating from most to least important soft skills. Rank order data can assist in identifying when there is congruence of priorities; highlight important misconceptions of when a valued activity isn’t perceived as highly important by a stakeholder group; and to prioritize limited time and resources for soft skills development.

The survey design was approved for human subjects by the Michigan State University Internal Review Board (IRB) and administered by the MSU researchers.

The survey is organized in 3 sections:

- 1) About you / your organization.
- 2) Perceptions of soft skills important for new employees.
- 3) How you learn, including the most important thing you/ students do / did learn in college and did not learn in college.

The impetus for this work is from discussions with the planning committee for the 2011 APLU National Academics Programs Summit. The committee felt that soft skills were one of the issues relevant to the focus of the summit: Creating Change: Reforming Curricula for a 21st Century Education. This research provides information for the Summit participants as well as our academic and practitioner colleagues across the nation. Dialog about the interpretation and implications of the research will include the APLU Summit and AgCareers Roundtable in August, 2011, and the University-Industry affiliates meeting in October, 2011.

This is only the beginning of a dialog, bringing together the perspectives of students, faculty, alum and employers, on the many questions of curricular reform for a 21st Century education. If we open ourselves up to critical engagement, *“the primary value is the effect it has on participants: helping them [us] think intentionally and deeply about themselves [ourselves], their [our] work, and how they [we] approach their [our] practice. The outcomes can be transformative in the way that Tobin Heart interprets transformation: ‘To transform is to go beyond current form. This means growth, creation and evolution, an expansion of consciousness. When education serves transformation, it helps take us beyond the mold of categories, the current limits of social structure, the pull of cultural conditioning, and the box of self-definition; in thus going beyond, we ride the crest of the wave of creation, a wave that constantly collapses and rises into new forms.’ (p.149)” (p.257)*

Fear, F., Rosaen, C., Bawden, R., Foster-Fishman, P. (2006) [Coming to Critical Engagement](#). Landham, MD: University Press of America. Citing Heart, T. (2001) [From Information to Transformation: Education for the Evolution of Consciousness](#). New York: Peter Lang.

8,111 Survey Participants: students, faculty and alum from 31 Universities and 282 employers.

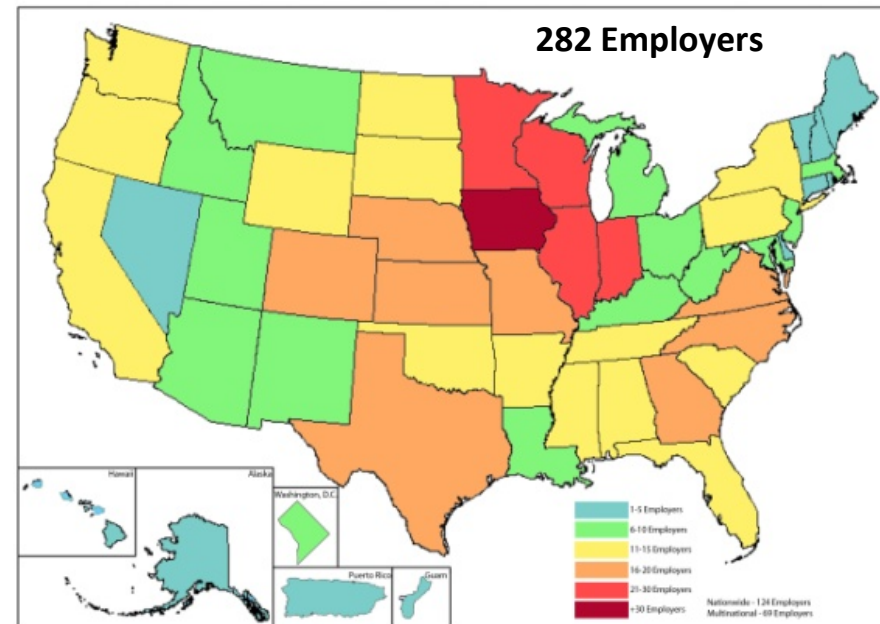
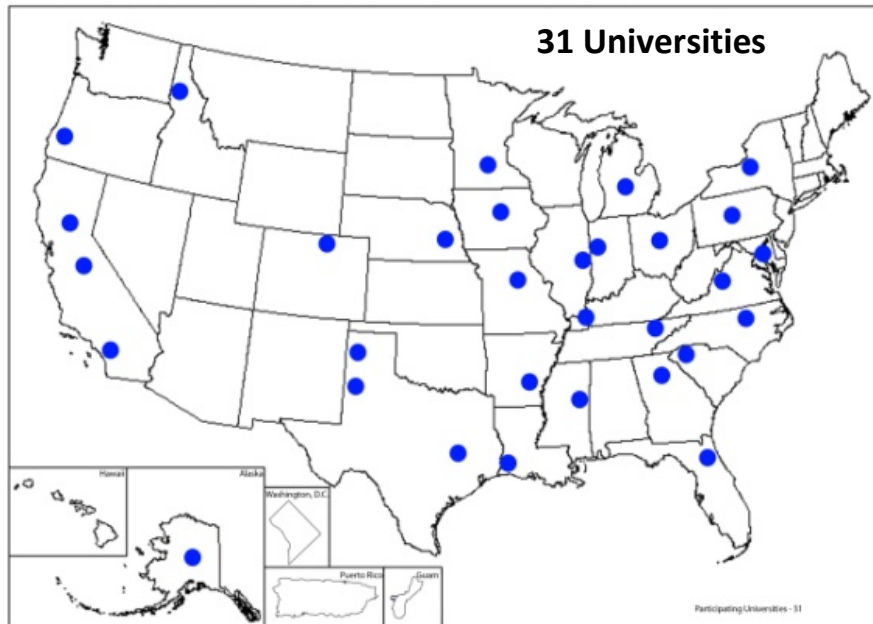
SURVEY ADMINISTRATION & RESPONDENTS

Survey participation was coordinated through APLU and administration was online with *SurveyMonkey* over 15 weeks, from March 21st to July 3rd.

The Nation-wide survey includes participation from 31 Universities (blue dot map) and 282 employers representing all 50 states, District of Columbia, Puerto Rico and Guam (shaded map).

PARTICIPANTS	students	faculty	alum	employers
	2,669	898	4,262	282
TOTAL: 8,111				

Employer Legend



Demographics: Degree Areas of Respondents

DEGREE AREAS OF STUDENTS, FACULTY AND ALUM

DEGREE AREA	Student's Bachelor Area	Student's Minor / Specialization Area	Faculty's Current Primary Area	Alum's Bachelor Area
Agricultural Business & Management	11.1%	11.3%	6.9%	19.3%
Agricultural Mechanization & Engineering	3.0%	1.0%	4.2%	4.1%
Agricultural Public Services (including Communications, Extension Education & Agricultural Education)	9.1%	3.2%	7.6%	8.8%
Animal Sciences	22.1%	8.3%	10.3%	16.2%
Apparel & Textiles	0.1%	0.0%	0.2%	0.1%
Family & Consumer Sciences	1.8%	0.5%	1.9%	1.8%
Food Sciences	4.9%	1.2%	3.7%	4.1%
Forestry	3.0%	0.9%	4.0%	2.6%
Landscape Architecture, Design, Construction, Recreation & Community Development	1.6%	0.4%	1.7%	1.9%
Natural Resources Conservation, Management, Research, or Policy	7.3%	3.6%	4.8%	3.7%
Nutrition	3.1%	2.2%	4.6%	3.0%
Plant Sciences (including Agronomy, Crop Sciences, Horticulture & Production)	6.3%	7.4%	16.6%	9.8%

DEGREE AREA	Student's Bachelor Area	Student's Minor / Specialization Area	Faculty's Current Primary Area	Alum's Bachelor Area
Related Sciences (Biological Sciences, Physics, Chemistry, Geology, Earth Sciences, Geography, Biotechnology, etc.)	11.7%	9.6%	12.1%	9.4%
Wildlife Sciences & Management, Fisheries, Ecology	10.7%	47.0%	3.6%	2.5%
Other	4.3%	3.4%	17.3%	12.5%

Demographic Characteristics of Respondents

STUDENT DEMOGRAPHIC CHARACTERISTICS

- Almost half (1,262) of the student respondents are pursuing a minor or specialization in addition to their primary degree.
- Eighty percent of the students anticipate completing their bachelors degree between 2011-2015.
- Forty percent of the students are interested in a Professional or Specialist type career (Nutritionist, Crop Advisor, Veterinarian, Engineer, Forester, Landscape Architect), 13% are interested in research, 9% as an educator or in education, 6% are interested in owning / operating a small business, and 6% in management.

GENDER OF STUDENT, FACULTY AND ALUM RESPONDENTS

GENDER:	Students	Faculty	Alum
Male	30.1%	64.6%	54.2%
Female	69.9%	35.4%	45.8%

* Employers were not asked gender because they were responding as a representative of their company and not as an individual.

FACULTY AREAS OF PRIMARY ACTIVITY AND YEAR PH.D AWARDED

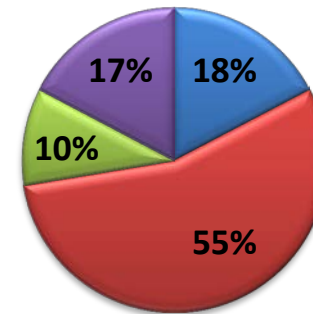
PRIMARY AREA OF ACTIVITY	Teaching	Research	Administration	Extension
faculty	39.7%	35.2%	12.0%	13.1%

- Over half the faculty respondents (52%) received their Ph.D. 10 to 30 years ago (1981-2000), and 28% received their degree over 30 years ago.

ALUM AND EMPLOYER REPRESENTATION OF ECONOMIC SECTORS

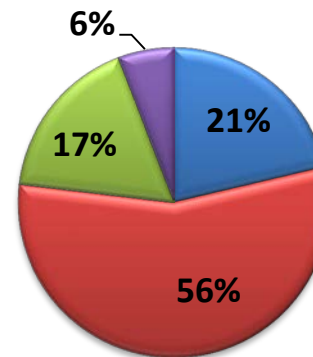
ECONOMIC SECTOR	Alum	Employers
Government	17.3%	21.3%
For-profit company	55.1%	55.6%
Non-profit / non-government organization	10.3%	17.3%
Higher education	17.3%	5.8%

Alum Economic Sectors



- Government
- For-profit company
- Non-profit / non-government organization
- Higher education

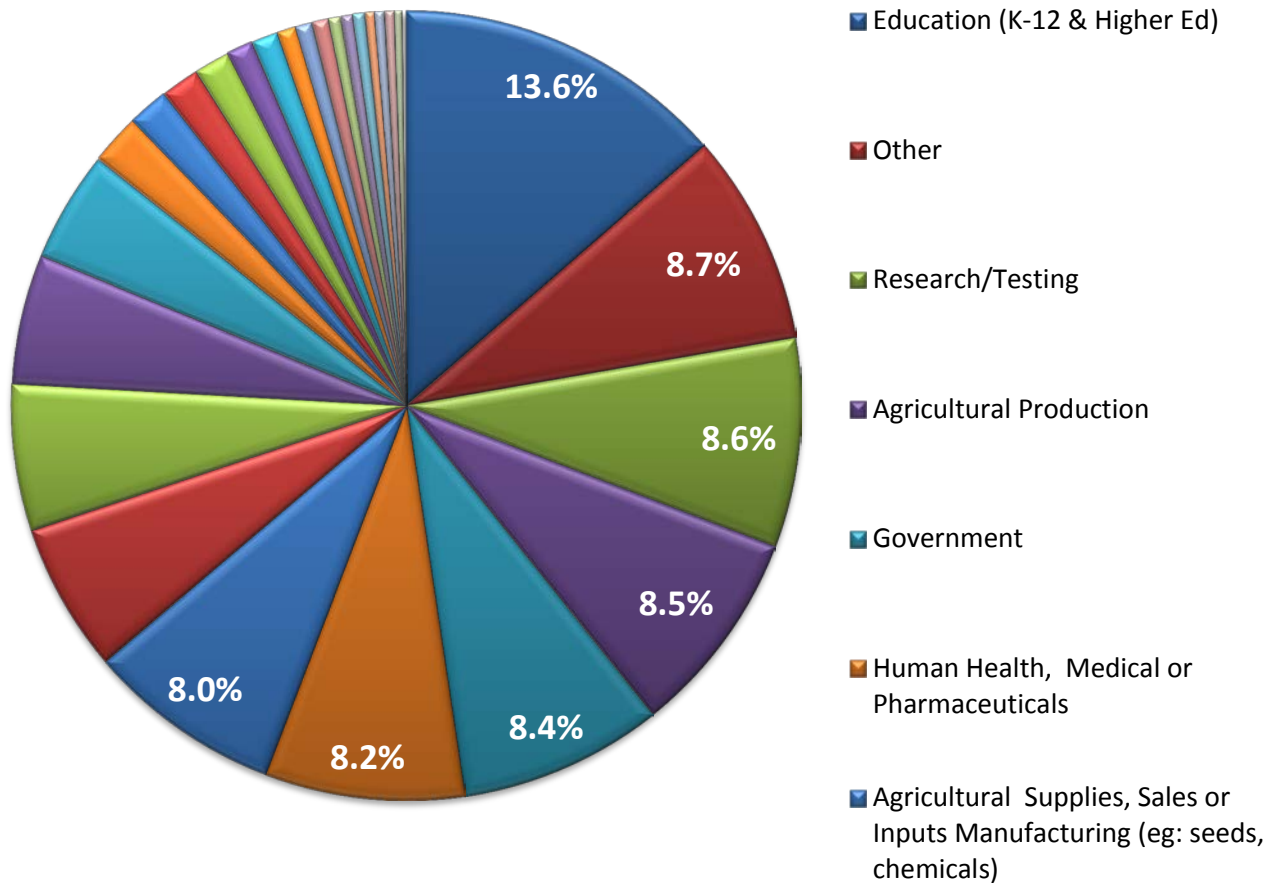
Employer Economic Sectors



- Government
- For-profit company
- Non-profit / non-government organization
- Higher education

Demographics: Organization Type - Alum

ALUM REPRESENTATION OF ORGANIZATION TYPES



The following organization types are represented as 7% or less and are presented in decreasing order:

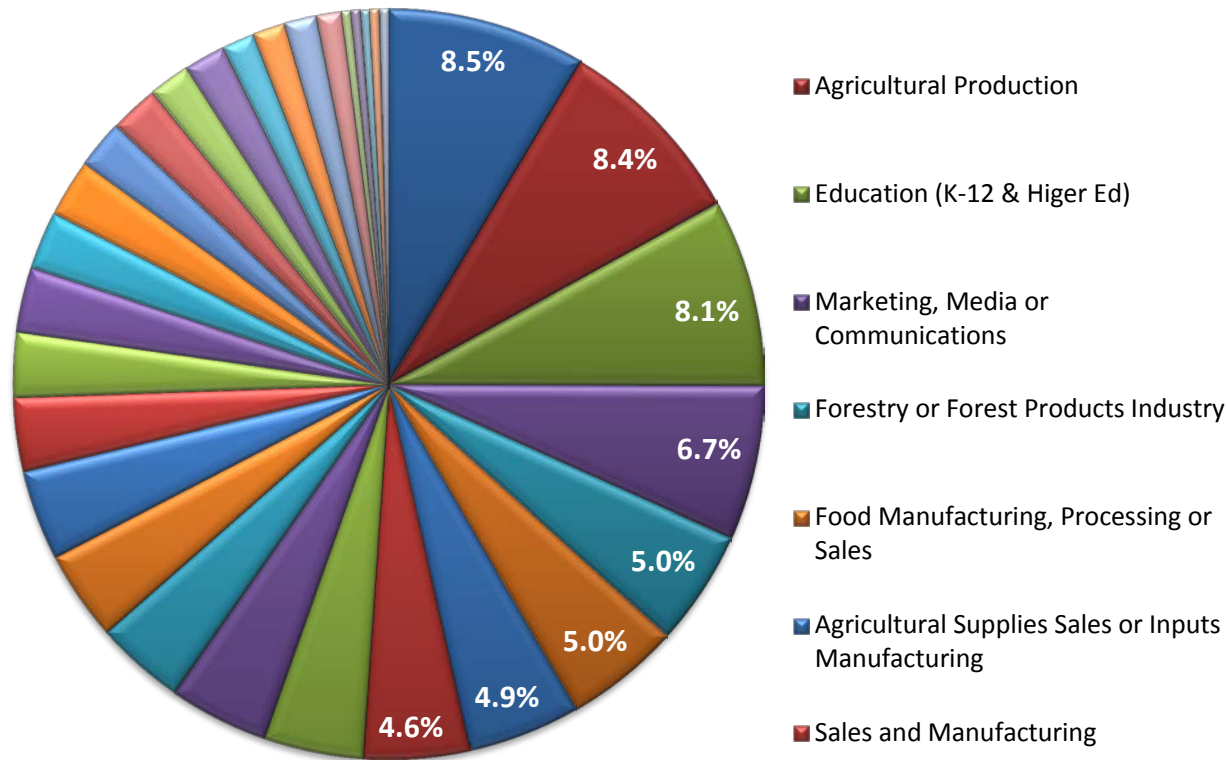
- Government-- Non-regulatory
- Animal Health or Veterinary
- Government-- Regulatory
- Forestry or Forest Products Industry
- Pharmaceuticals
- Energy Production or Distribution
- Parks, Recreation, or Golf Industries
- Marketing, Media, and Communications
- Environmental Management or Consulting
- Legal
- Military/Defense
- Real Estate
- Hospitality Management/Hotel and Restaurant Management
- IT or Software Design
- Social Services/Human Services
- Transportation
- Management Consultants
- Agricultural Advocates
- Financial or Banking Industry
- Equipment Design, Manufacturing, or Sales
- Chemical, Pesticide, or Fertilizer
- Biotechnology

* The majority, 87%, of the alum respondents are currently employed.

* Over half (56%) of the alum received their Bachelor's degree within the last 10 years and 25% graduated between 1981 and 2000.

Demographics: Organization Type - Employer

EMPLOYER REPRESENTATION OF ORGANIZATION TYPES

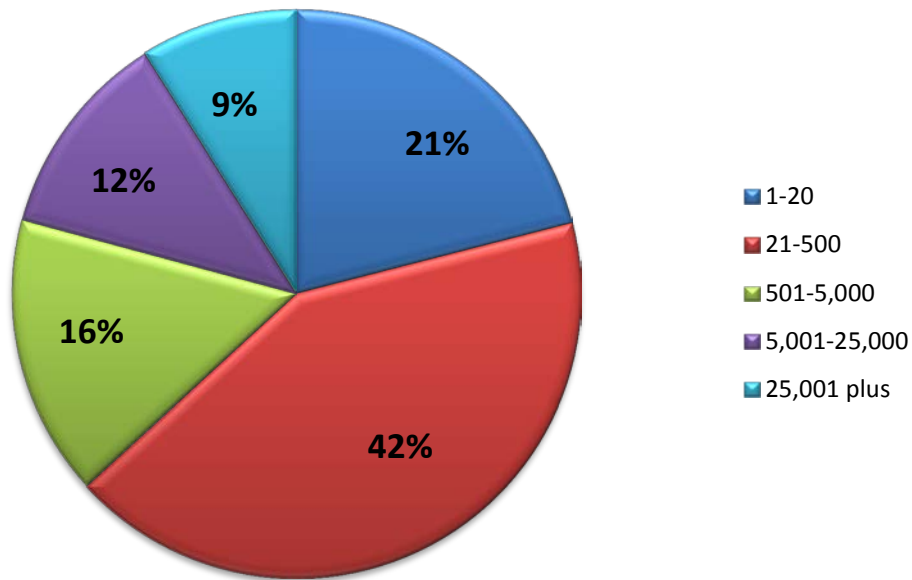


The following organization types are represented as 4.5% or less and are presented in decreasing order:

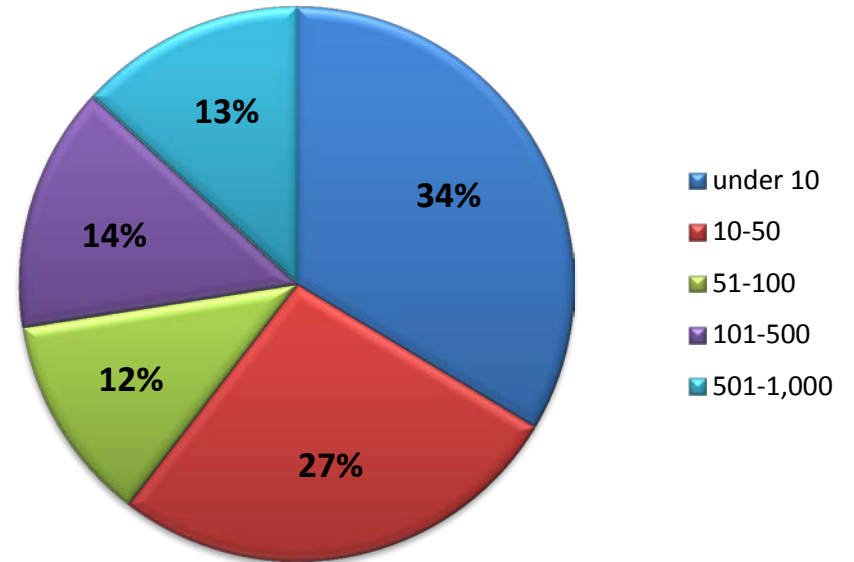
- Biotechnology
- IT or Software Design
- Financial or Banking Industry
- Hospitality Management/Hotel and Restaurant Management
- Federal Government
- Human Health, Medicine or Pharmaceuticals
- Research
- Policy
- Parks, Recreation, or Golf Industries
- Social Services/Human Services
- Engineering & Construction
- Equipment Design, Manufacturing, or Sales
- Energy Research, Production, Distribution, or Consulting
- Other
- Apparel/Textile Manufacturing or Sales
- Environmental Management or Consulting
- Management Consultants
- Transportation
- Animal Health or Veterinary
- Landscape Design or Landscaping
- Legal
- Real Estate

Demographics: Employer Size of Organization & Anticipated Hires

Number of Employees in Current Organization (versus parent organization)



Number of Anticipated New Hires in Total Over the Next 3 Years



CLUSTER ANALYSIS: 7 Soft Skill Clusters and Descriptive Characteristics

The report includes findings for the ranking of Soft Skill Clusters overall (pg. 9), ranking of the characteristics within a cluster (pgs. 10-16), and ranking of learning environment effectiveness (pg. 17). **It is important to emphasize that all of the skills are important – the rankings reflect a priority when trade-offs need to be considered in decision making.** For example, the survey results show Communication Skills as the highest ranked cluster overall. A job candidate with good communication skills could be selected over a candidate with strong leadership skills or internship experiences.

7 SOFT SKILL CLUSTERS & DESCRIPTIVE CHARACTERISTICS

(Presented in rank order from employers survey responses.)

COMMUNICATION SKILLS:

- * Listen effectively
- * Communicate accurately and concisely
- * Effective oral communication
- * Communicate pleasantly and professionally
- * Effective written communication
- * Ask good questions
- * Communicate appropriately and professionally using social media

DECISION MAKING / PROBLEM SOLVING SKILLS:

- * Identify and analyze problems
- * Take effective and appropriate action
- * Realize the effect of decisions
- * Creative and innovative solutions
- * Transfer knowledge from one situation to another
- * Engage in life-long learning
- * Think abstractly about problems

SELF-MANAGEMENT SKILLS:

- * Efficient and effective work habits
- * Self-starting
- * Well-developed ethic, integrity and sense of loyalty
- * Sense of urgency to address and complete tasks
- * Work well under pressure
- * Adapt and apply appropriate technology
- * Dedication to continued professional development

TEAMWORK SKILLS:

- * Productive as a team member
- * Positive and encouraging attitude
- * Punctual and meets deadlines
- * Maintains accountability to the team
- * Work with multiple approaches
- * Aware and sensitive to diversity
- * Share ideas to multiple audiences

PROFESSIONALISM SKILLS:

- * Effective relationships with customers, businesses and the public
- * Accept and apply critique and direction in the work place
- * Trustworthy with sensitive information
- * Understand role and realistic career expectations
- * Deal effectively with ambiguity
- * Maintain appropriate decor and demeanor
- * Select appropriate mentor and acceptance of advice

EXPERIENCES:

- * Related work or internship experiences
- * Teamwork experiences
- * Leadership experiences
- * Project management experiences
- * Cross disciplinary experiences
- * Community engagement experiences
- * International experiences

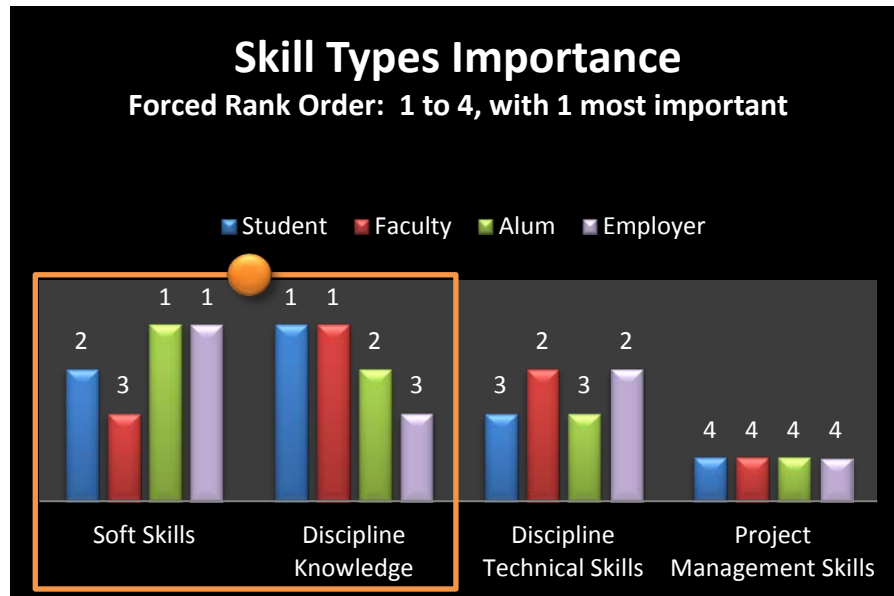
LEADERSHIP SKILLS:

- * See the “big picture” and think strategically
- * Recognize when to lead and when to follow
- * Respect and acknowledge contributions from others
- * Recognize and deal constructively with conflict
- * Build professional relationships
- * Motivate and lead others
- * Recognize change is needed and lead the change effort

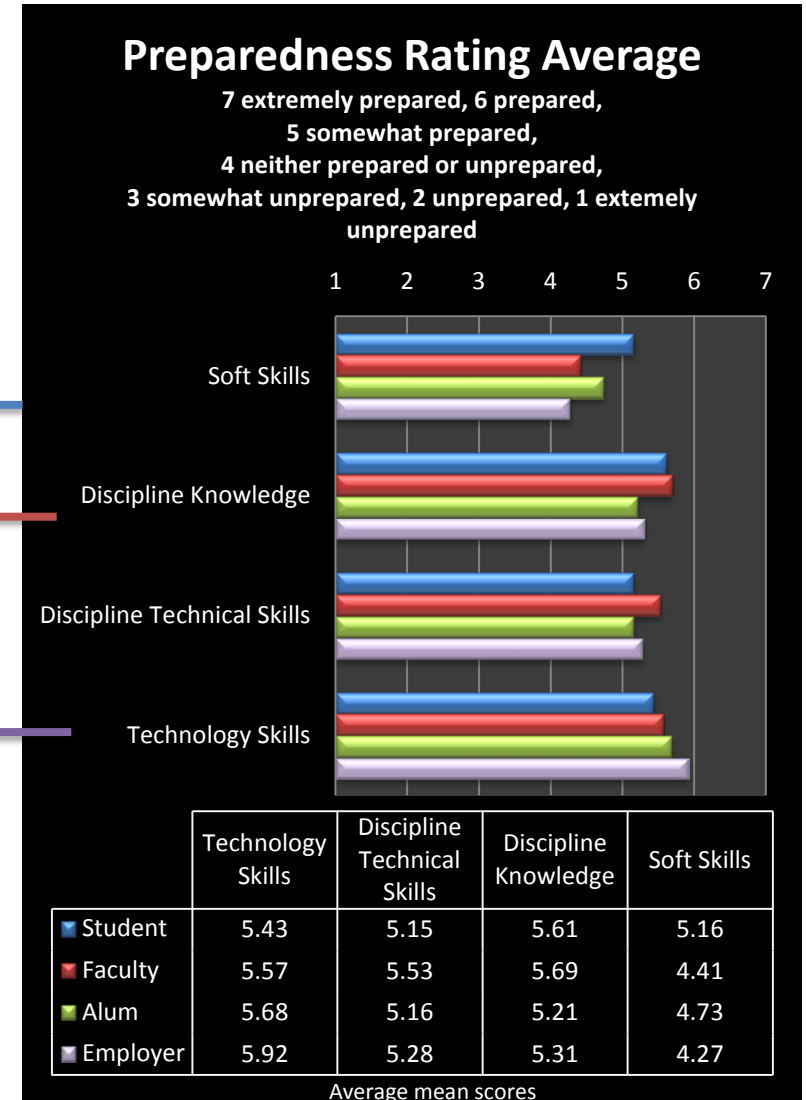
A difference in world views: the rank and rate of Disciplinary Knowledge, Technology Skills and Soft Skills.

Participants ranked soft and disciplinary skills and rated their perceptions of preparedness of new graduates.

- **Soft Skills** are ranked most important by employers and alum, while **Discipline Knowledge** is ranked most important by faculty and students.



- Students are more optimistic about their preparedness in the **Soft Skills** than faculty, alum or employers.
- Students and faculty rate **Disciplinary Knowledge** preparedness higher than employers and alum.
- Employers rate new graduates as most prepared in **Technology Skills**.



Communication is the most important soft skill for all the groups, with over half the employers (52.3%) ranking it 1 or 2.

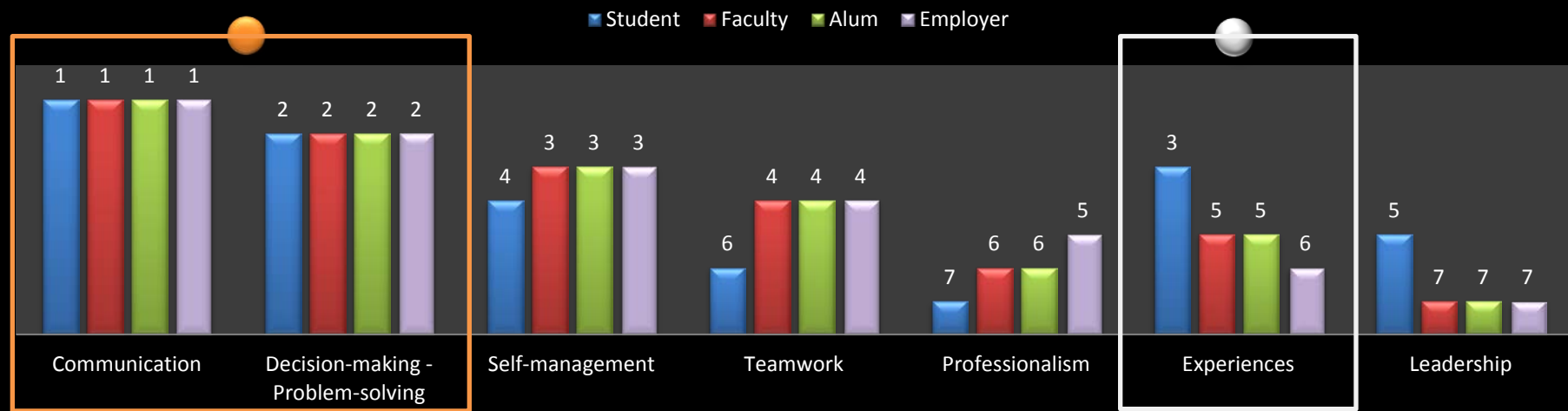
Communication and Decision-making / Problem-solving are ranked as the 2 most important skill clusters by all the groups for new employees. Faculty, alum and employers are in close alignment with rank ordering the skill clusters overall. Students, however, show a different set of priorities: they rank Self-management, Team skills and Professionalism lower, and Leadership and Experiences higher in importance than employers, alum or faculty.

The biggest difference in views between students and employers is for the Experiences soft skill cluster. Students rank Experiences as the 3rd most important skill preparing them for entry into the workforce (49.1% rank Experiences in the top 3). Employers rank it 6th overall in importance for new employees, with 51.1% of the employers ranking Experiences as a 6 or 7.

"These employability skills [soft skills] are the lubricant of our increasingly complex and interconnected workplace. They are not a substitute for specific knowledge and technical skills: but they make the difference between being good at a subject and being good at doing a job." –[The Employability Challenge](#), UK Commission for Employment and Skills, South Yorkshire: UK, 2009, pg.3.

Soft Skill Clusters Importance

Forced Rank Order: 1 to 7, with 1 most important



Almost 1/3 of employers (31.1%) value listening effectively as the most important characteristic of Communication skills.

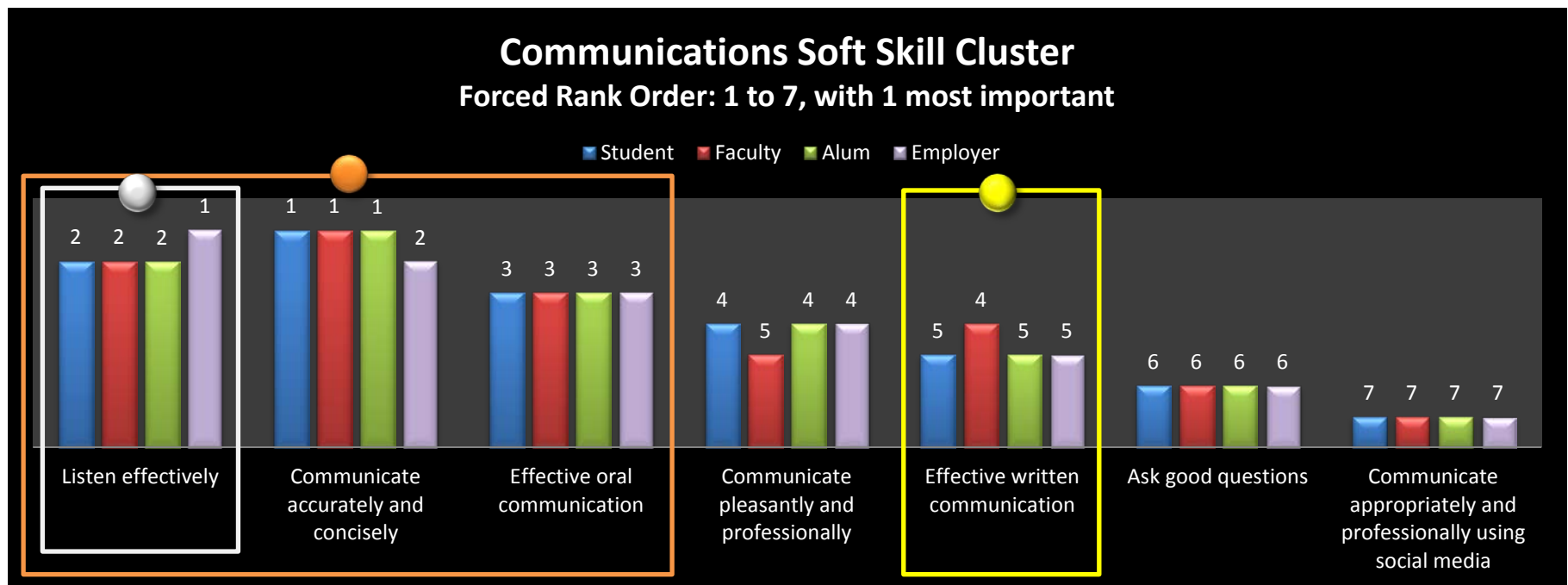
Communication skills are ranked as most important in the overall cluster rankings by all of the stakeholder groups.

- All the participant groups agree that listening effectively, communicating accurately and concisely, and effective oral communication are the top communication skills.
- Employers, however, place listening effectively as the most important characteristic of Communication skills for new employees.
- Oral communications are ranked higher than written communications by all; faculty emphasizes written skills more than students, alum and employers.

[I did not learn in college that:] "If you can't communicate, you're pretty worthless on many fronts regardless of your book smarts and degree held. That very much includes the ability to listen and hear other point of views." Alum

"They need to be aware of all the various ways to communicate. We had an intern that didn't like to use the phone. There are multiple generations in the workforce and they need to be able to communicate with all." Employer

"Except in very unique work environments, being an effective employee is impossible if one cannot communicate effectively." Alum



Students (48.2%) and employers (50.2%) agree on the importance of realizing the effects of decisions within their top 3 priorities in the Decision-making cluster.

Decision-making / Problem solving is the 2nd highest importance in the overall cluster rankings by all of the stakeholder groups.

Students and employers agree that identifying the problem, taking effective action, and realizing the effects of decisions are the 3 most important characteristics of this cluster for new employees.

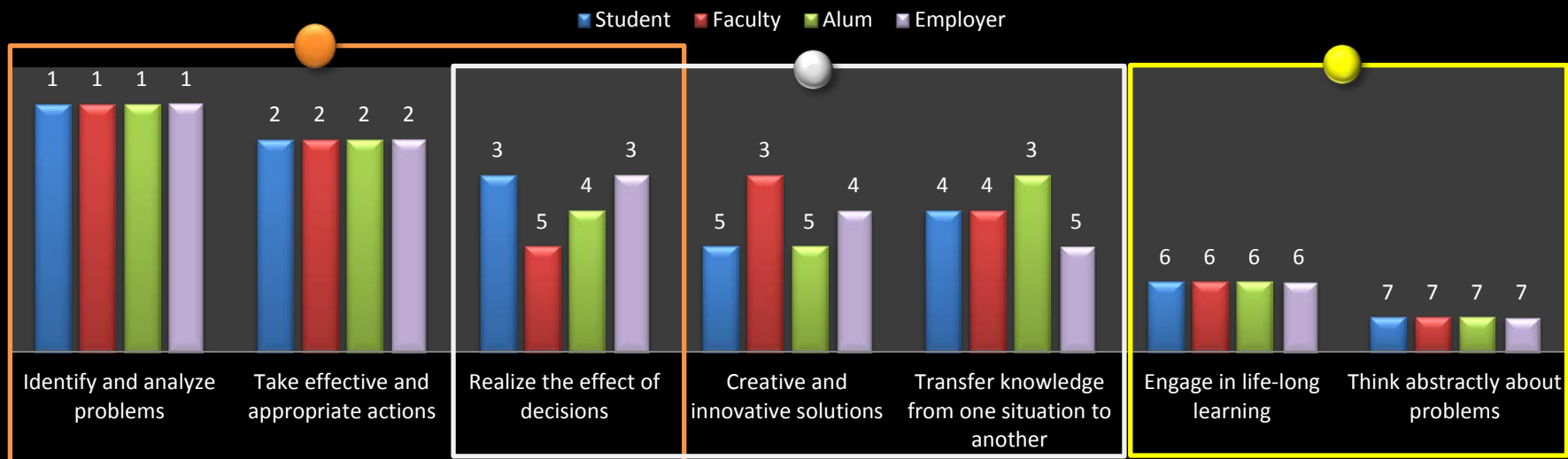
However, within this cluster, faculty emphasizes the value of creative and innovative solutions and transfer of knowledge across situations as more important than realizing the effects of decisions for new employees.

Life-long learning and abstract thinking ability are ranked low for new employees, these characteristics could become more important as an employee matures and gains increasing responsibility in the organization.

"Strategic thinking and problem solving [are skills I did not receive training for while in college]. In today's economy, it is CRITICAL to be a problem solver and evaluate problems strategically. While many who graduate from my alma mater are good at these skills, students in my degree program were not trained in these areas. Frankly, training in a classroom environment is difficult because most effective strategic thinking and problem solving comes in the moment and on the fly. However, additional preparation would have been beneficial." Alum

Decision-making / Problem-solving Soft Skill Cluster

Forced Rank Order: 1 to 7, with 1 most important



Student's under-rate the importance of self-starting. One-third of students rank self-starting as 1 or 2, in comparison to over half of the faculty (54.3%), alum (51.9%), and employers (51.0%) who rank self-starting as 1 or 2.

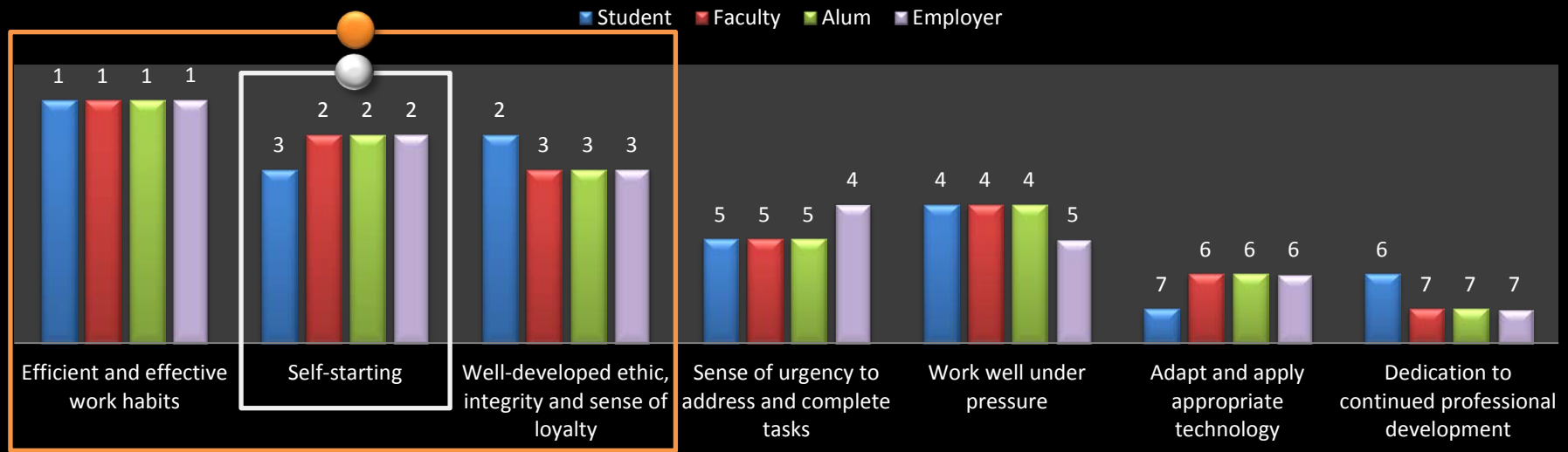
The **Self-management** skills cluster is ranked 3rd most important by employers, alum and faculty, and ranked 4th by students in the overall cluster ranking.

Effective work habits, self-starting, and a well-developed ethic, integrity and sense of loyalty are the 3 most important characteristics in this cluster for all of the groups.

Students, however, under-rate the importance of self-starting in comparison to the other groups. One-third of students rank self-starting as 1 or 2, while over half of the faculty (54.3%), alum (51.9%), and employers (51.0%) rank self-starting as 1 or 2.

"It's very important that new hires can manage projects effectively without too much 'hand holding' every step of the way. They need to know when to ask questions, when to ask for help, and how to prioritize. They need to be willing to take on any kind of project without feeling it's beneath them. This is especially important to our small business - even the CEO has to cover the phones and take orders sometimes. We also need people who are willing to help their team members for the greater good of the company." Employer

Self-management Soft Skill Cluster Forced Rank Order: 1 to 7, with 1 most important



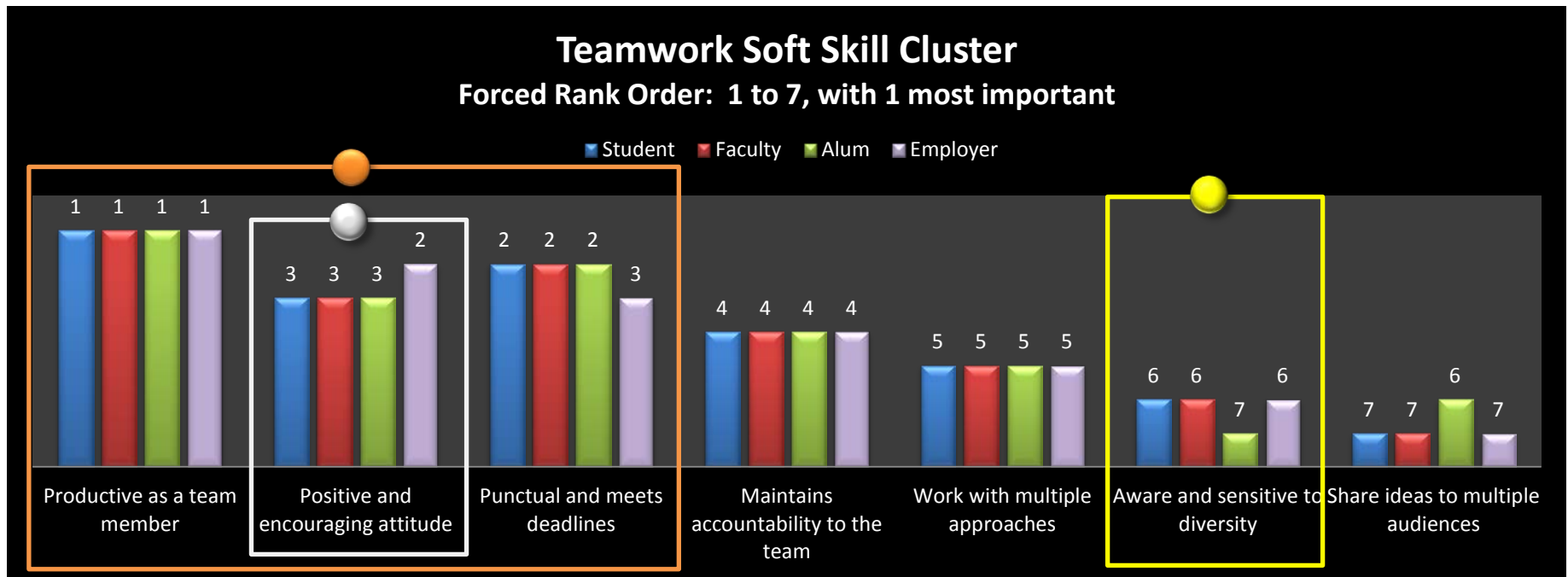
While productivity, punctuality and meeting deadlines are important, over half the employers (50.4%) rank having a “positive attitude” as 1 or 2.

Teamwork is ranked 4th by employers, faculty and alum with students ranking it 2 steps lower, at 6th, in the overall cluster ranking.

- Productivity, punctuality and a positive attitude are ranked the 3 most important Teamwork skill characteristics by all the groups.
- Within the top 3 characteristics, employers place a greater importance on a positive and encouraging attitude for new employees. Over half of the employers rank a positive attitude as 1 or 2 in comparison to 45.2% of alums, 42.3% of faculty and 39.8% of students.

Awareness and sensitivity to diversity and communicating with multiple audiences is ranked after the basic skills and manners required for working in a team.

“I was heavily involved in Greek life, and it probably did as much for me as anything I learned in the classroom. I think any student organization could have provided this, but it teaches you about how to deal with people, how to change your approaches when dealing with varying personalities. Schools always seem to want to force group work, but it just doesn't compare. Group assignments rarely accomplish this. It generally exploits the members who are more diligent and have realized it's easier to just do things yourself.” Alum



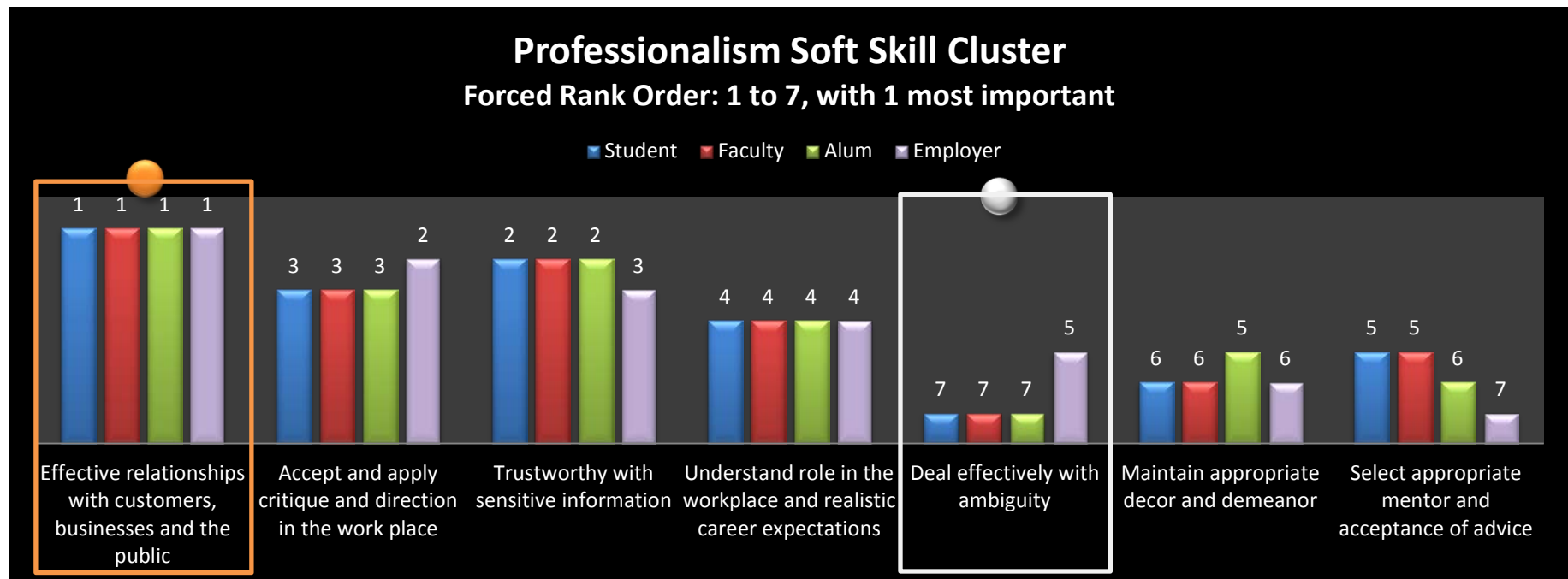
Employers place a higher importance on the ability to deal effectively with ambiguity: 20% of employers rank the ability to deal with ambiguity as their top 1 or 2, compared to 12.7% of students, faculty, and alum.

Professionalism skills are ranked towards the lower end in the overall cluster rankings at 5th for employers, 6th for alum and faculty, and 7th for students.

The most important Professionalism characteristic for all the groups is the ability to have effective relationships with customers, businesses and the public. This is followed by the ability to accept direction, trustworthiness with sensitive information, and understanding the new employee's role in the workplace with realistic career expectations.

Employers place a higher importance for new employees on the ability to deal effectively with ambiguity than students, faculty and alum.

[Several Employer respondents commented that students should learn:]
 "How to work hard and earn the right to a position within a company – right now many of them feel 'entitle' to things. That life is not always 'instant gratification.' Sometimes you have to work hard to get to the next 'level and that takes time. Social skills. How to work with the public, treat people, introduce yourself, etc. These are skills that you would think are 'common sense' skills, but don't seem to be." Employer



While there is agreement on which experiences are important, the overall value of the Experiences cluster is contested: 51.1% of employers rank Experiences as 6 or 7, while 49.1% of students rank Experiences in their top 3.

The **Experiences** cluster has the greatest difference in overall soft skill rankings between students and employers. Students rank Experiences as the 3rd most important skill preparing them for entry into the workforce (49.1% rank Experiences in the top 3). Employers rank it 6th overall in importance for new employees, with 51.1% of the employers ranking Experiences as a 6 or 7.

The 3 most important Experiences preparing students for work force entry are: related work or internships, teamwork, and leadership experiences.

International experiences consistently rank the lowest for preparing students to enter the workforce. The study abroad literature recognizes the need to help students “unpack” their international experiences and connect their learning.

“One ‘experience’ I am seeing on more and more resumes of new grads is trips abroad or student exchanges... I do not hire for international positions nor does my company send employees abroad but I know these experiences can make for a better prepared candidate. I would like to see more students who are able to tell what that experience taught them and how it would make them a better fit for my company and the role they are pursuing.” Employer



Seeing the “big picture” is the most important characteristic of Leadership, yet Leadership is the least important soft skill cluster for new employees.

Leadership is ranked 7th by employers, alum and faculty in the overall cluster ranking. Students assign a higher importance (5th) for new graduates to have Leadership skills for entering the workforce. The student perceptions may be influenced by a resurgence of “leadership training” on some college campuses.

All stakeholder groups agree that the most important leadership skills for new employees are the ability to see the “big picture,” think strategically, and recognize when to lead and when to follow.

Motivating others and leading change are lowest in importance for new employees. These skills can become more valuable after an employee has matured with an organization and established a positive reputation.

“Leadership and its associated skills come with watching industry role models, though project leadership can start at the entry level. Overall, good ‘people skills’ are a cost of entry. Poor people skills are a death knell, as companies of all sizes are too busy to take people aside to teach them.” Employer

[I did not learn in College that it is important to:] *“Listen more than talk... Be patient: your turn to lead will come.” Alum*

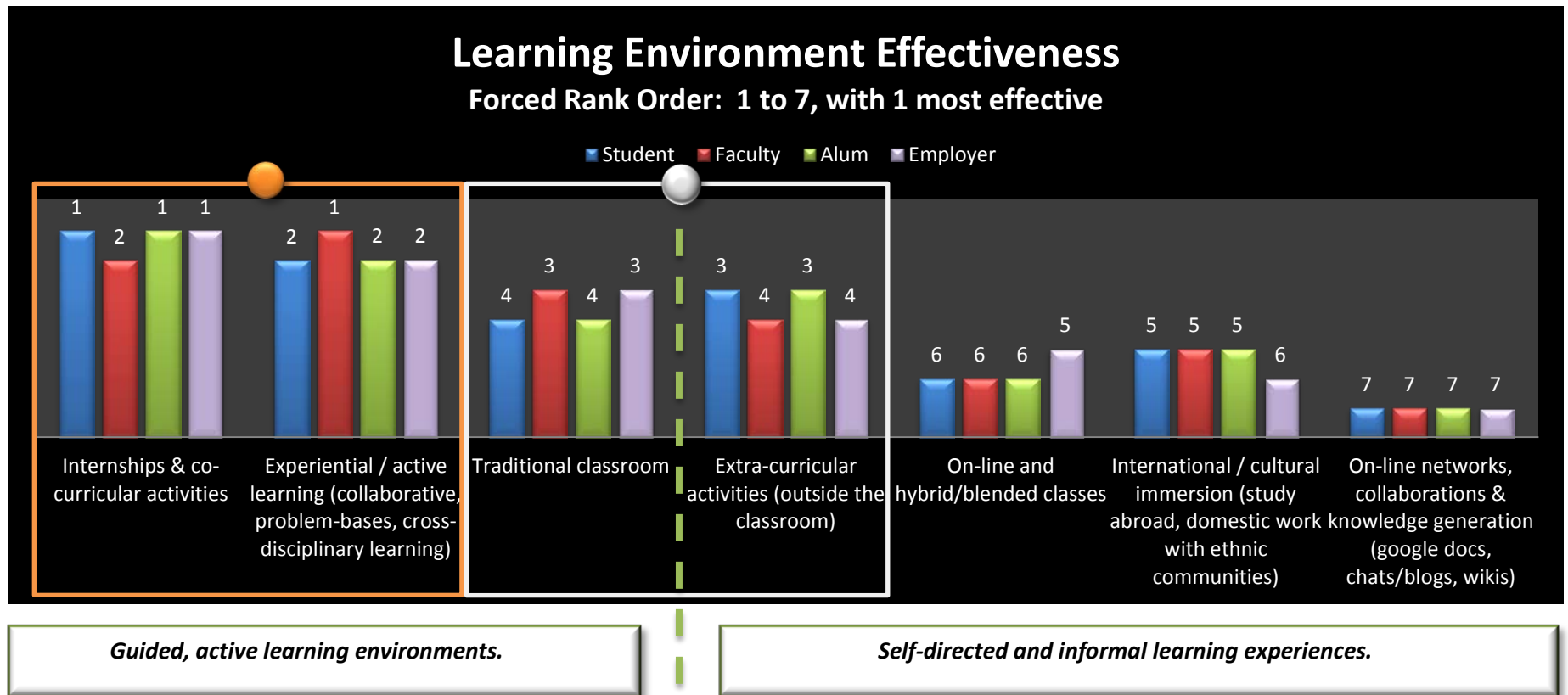


Guided, active learning environments are ranked as more effective than self-directed and informal learning experiences.

- The learning environments ranked most effective are internships, co-curricular activities, and classes with collaborative, problem-based and cross-disciplinary learning opportunities by all the stakeholder groups.
- The traditional classroom is considered more effective by faculty and employers while students and alum see more learning effectiveness in their extra-curricular activities.

"Don't forget a class after you get your final grade- they all connect- and by making those connections, you can connect situations at work logically." Alum

"I wish there had been more Interaction with Cross-Discipline majors-- particularly in the last year or two of completing my degree--- make students work together with their unique education background to solve a complicated problem that requires different education backgrounds." Alum



The most important things students did learn / are learning / will learn in college:

STUDENTS



“I will learn good communication and writing skills, and I will learn how to effectively work with others in a group.” Student

“Communication in the workplace. Knowing how to communicate verbally, written, and nonverbally is important. It’s the first way the employer gets to know you and it is what will sway them to hire you.” Student

FACULTY



“Students seem to be well-grounded in theory and discipline information. Students seem to work well in teams when given instructions. Students understand and are comfortable with new technologies.” Faculty

“We provide an extensive knowledge base. We provide a sound basis in effective communication skills. We provide opportunities for extracurricular learning such as internships.” Faculty

ALUM



“The most important thing I learned was that you need to understand who your audience is in whatever you are doing.” Alum

“I learned how to apply knowledge I learned in the classroom to solving problems. I did not simply learn how to regurgitate facts on exams. I learned how to synthesize the materials and integrate ideas to formulate solutions.” Alum

EMPLOYERS



[Students are learning:] “Creative new ideas and solutions using technology.” Employer

“Students are learning to take initiative to implement new technology as they join the staff of the organization.” Employer

“Good mastery of basic science and some experience with applications of that knowledge through internships or other work experience.” Employer

The most important things students are NOT learning in college:

STUDENTS



“More practice with public speaking--professors tend to take presentations off the syllabus as classes get larger and replace them with papers.” Student

“I would like to learn more about networking. I don't think the environment is conducive to stress management. I don't think we have enough leadership experience.” Student

FACULTY



“Writing and communication skills of students in my senior course are often lower than I would expect.” Faculty

“Our students do not have enough group project / learning opportunities.” Faculty

“Communication skills are lacking more in today's graduates.” Faculty

ALUM



[Multiple Alum and Employers noted students should learn more about:]
“How to deal with personal finance.” Alum

[I did not learn that:] “Not all you need to learn is in books. You're going to fail sometimes and it's OK.” Alum

EMPLOYERS



[Students are not learning:] “There is a need to communicate findings to people who do not know anything about what you're doing – so this is an area of teaching the audience.” Employer

[Students are not learning:] “How to take an ambiguous problem and break it down into executable development plan. See the big picture of a project.” Employer

Over half of all the survey participants agree that the responsibility for training in the soft skills is shared equally. So where do the students learn Soft Skills?

"Much of this really cannot be taught, but the [University] learning experiences help to create an atmosphere where it can be observed and tested." Alum

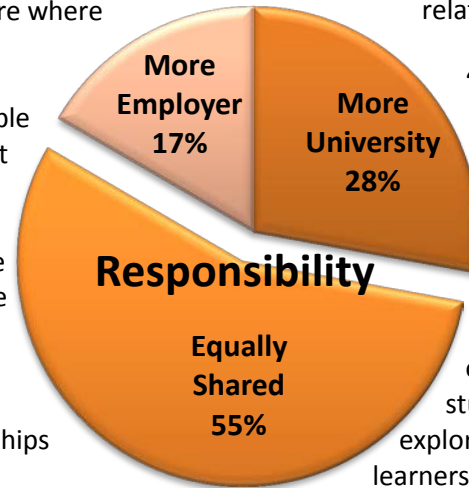
"While I do not feel like the employer is responsible for teaching these things [soft skills], I don't feel it is the university's responsibility either. The University should provide opportunities for students to develop these skills, but it is up to the student to do the work and take advantage of the opportunities given, whether at the University or elsewhere." Alum

"I gained so much more from my summer internships than from any of the classes I took - learning by doing, not memorizing a book and listening to hypnotizing lectures. But those internships I set up myself.... I learned practical agronomy knowledge and where to find information if I did not know it. I learned the importance of making connections and networking (was not taught, just caught on... got to know the professors better and it helped improve my academic experience)." Alum

"I didn't learn professionalism through my academic program though I did acquire them by participating in professional student oriented organizations." Alum

"A pleasant attitude is ALWAYS helpful; in every aspect of business- a school can't teach you to be nice." Alum

"I have learned that Advisors do not always know what is best for you, so question everything." Student



"My experiences as an RA helped me learn to build relationships and work as part of a team." Student

"I will learn how to cram for prelims, as opposed to doing labs and other effective learning activities, because they are worth more of my grade than the actual implementation of knowledge learned." Student

"The days of talking heads in classrooms need to be over...more real world team projects like the College of business cohorts do; more placement during [their] studies n potential employers work environments; more exploratory experiences in related or outside fields that push learners to their edge where change can take place." Alum

"The most lacking area in recent grads is communication skills, but it is the most important. I urge the university to require stricter standards in all fields of study for English and writing skills requirements." Employer

"They need to be able to read, write and speak effectively and not in the new technological shorthand. Listen and learn." Employer

"Too many students do not seek internships, avoid public speaking, and avoid classes with group projects." Faculty

"Creative and effective teaching at this university is NOT upheld as a virtue to be cultivated by professors. It seems that those who truly care about their teaching techniques do so at the expense of what will actually get them promoted (grants, publications, and grad students)." Faculty

About the Research Partners

Association of Public and Land-grant Universities (A·P·L·U).

A·P·L·U is a non-profit association of 221 public research universities, land-grant institutions, and state university systems with member campuses in all 50 states, U.S. territories and the District of Columbia. The association is governed by a Chair and a Board of Directors elected from the member universities and university systems. President Peter McPherson directs a staff of about 45 at the national office in Washington, D.C. A·P·L·U institutions enroll more than 3.5 million undergraduate students and 1.1 million graduate students, employ more than 645,000 faculty members, and conduct nearly two-thirds of all federally-funded academic research, totaling more than \$34 billion annually. With roots going back to 1887, A·P·L·U is the nation's oldest higher education association. A·P·L·U is dedicated to advancing learning, discovery and engagement. The association provides a forum for the discussion and development of policies and programs affecting higher education and the public interest.

Academic Programs Section (APS) The Academic Programs Section (APS) is comprised of the principal officer(s) responsible for academic or instructional programs (undergraduate, graduate, and continuing education) offered by the faculty within colleges of agriculture and related disciplines. It is one of five sections within the Board on Agriculture Assembly (BAA) of the Association of Public and Land Grant Universities (A·P·L·U). Academic Programs Section members represent 120 different institutions that include the 1862 land-grants, 1890 land-grants, 1994 land-grants, and 6 non-land-grant institutions. It also includes the 40+ institutions belonging to American Association of State Colleges of Agriculture and Renewable Resources (AASCARR). The AASCARR organization and its institutions are affiliate members of APS. Thus, in total, APS represents 160+ institutions having academic programs in agriculture, natural resources, life, and related sciences. The mission of the Academic Programs Section is to assure that the

development of human capital in agriculture, food, natural resources and related areas is a preeminent concern of the Land-Grant and State University Systems and their federal partners.

University-Industry Consortium (UIC). The objective of the UIC is to assist academia and industry in identifying and examining potential issues and challenges in biotechnology and agriculture, and identifying potential solutions such that members can use this information to proactively make strategic or tactical moves such that they achieve a sustainable competitive advantage. The members include leaders in the biotech/agriculture community. Participants include deans/directors of 18 land grant universities, VP's/Directors of 11 major ag/biotech/food companies as well as the USDA-ARS.

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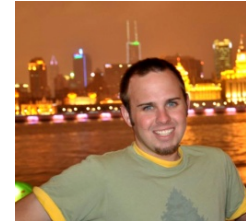
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