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# FACILITIES manager



Honoring APPA Fellows and  
Meritorious Service

Highlights from APPA/  
PCAPPA/BayAPPA 2017

APPA Thought Leaders  
Report 2017, Part1,  
*Transforming Facilities to  
Achieve Student Success*

*Harnessing and  
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A Profile of President Chris Kopach

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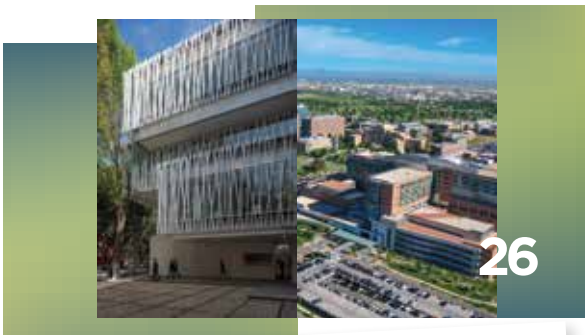
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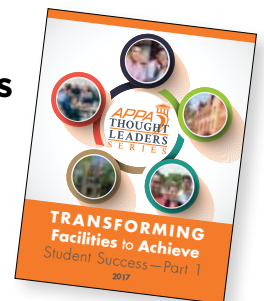
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## New Publications in the APPA Bookstore

Visit the APPA Bookstore at [www.appa.org/bookstore](http://www.appa.org/bookstore) and get your copy of the latest additions!

### ENVIRONMENTAL MANAGEMENT GUIDE FOR EDUCATIONAL FACILITIES

*Co-Published by APPA and the Campus Safety Health and Environmental Management Association, Published 2017; Softcover, 210 pages; Member: \$66.00, Nonmember: \$81.00*



Colleges and universities are environmental leaders in teaching, research, and sustainability. Institutions need to be vigilant to the importance of environmental laws and regulations and to allocate the resources required for compliance. Additionally, environmental compliance has proved to be a moving target.

Since 1996, APPA and CSHEMA, the Campus Safety Health and Environmental Management Association, have collaborated to produce guidance documents to help educational facilities overcome the challenges of environmental compliance.

### THE BUILDING COMMISSIONING HANDBOOK, THIRD EDITION

*Co-Published by APPA and The Building Commissioning Association, Published 2017; Softcover, 348 pages; Member: \$75.00, Nonmember: \$95.00*

This third edition of The Building Commissioning Handbook captures the many changes in the building market that are—and will continue to be—advancing and accelerating the role and value of commissioning. The design, construction, operation, and optimization of increasingly complex building systems and assemblies requires unique and expanding skill sets along with broad and deep knowledge of building science.

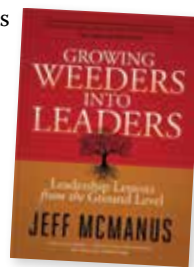


Produced by APPA and the Building Commissioning Association, this handbook provides a sequential, phase-based approach to the building commissioning process for all who have a stake in understanding, participating, and delivering properly functioning higher education and other commercial and institutional facilities.

### GROWING WEEDERS INTO LEADERS

*By Jeff McManus, Published 2017; softcover, 128 pages; Member: 14.00, Nonmember: 17.00*

Jeff McManus describes the joys, the defeats, the brilliant problem-solving and the “best laid plans” that are proven worthless...until the bigger picture is told. It is the “bigger picture” told from the ground level. Growing Weeders into Leaders takes you through the practical applications of empowering people to experience not only what it means to grow outstanding landscapes, but also to grow greatness in themselves and encourage it in others. ⑤



#### COMING IN NOV/DEC 2017

- Internship Program at CU Anschutz Medical
- Student-Engagement and Partnering at the University of Arizona
- 2017 Thought Leaders Report, Part 2

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### About APPA

APPA promotes leadership in educational facilities for professionals seeking to build their careers, transform their institutions, and elevate the value and recognition of facilities in education. Founded in 1914, APPA provides members the opportunity to explore trends, issues, and best practices in educational facilities through research, publications, professional development, and credentialing. Formerly the Association of Physical Plant Administrators, APPA is the association of choice for more than 13,000 educational facilities professionals at more than 1,500 learning institutions throughout the United States, Canada, and abroad. For more information, visit us at [www.appa.org](http://www.appa.org).





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## Become an APPA Officer: Nominations for 2018 Are Now Open



APPA's strong and steady volunteer leadership is one of the core forces making it the association of choice for educational facilities professionals. Consider becoming a candidate for an elected APPA officer.

Elected officers gain valuable leadership skills and a chance to develop professionally in many meaningful ways, because being an officer provides a major opportunity to give back to the entire profession. Being an APPA elected official does require a personal commitment of time and energy. However, past elected officers will tell you that the personal rewards

and professional benefits outweigh the costs of engagement and time commitments. There are five elected officer leadership positions, three of which will be on the 2018 ballot:

- President-Elect
- Vice President for Information and Research
- Vice President for Professional Development

Consider nominating yourself—or others—for the position that best matches your passion and areas of expertise. Learn more at [www.appa.org/board/cfm](http://www.appa.org/board/cfm). All applications and nominations for APPA office are due no later than **December 15, 2017**.



### APPA/PCAPPA/BayAPPA 2017 Conference Photos Available Online

You can access and download electronic images of the annual conference from our Shutterfly photo album at <https://appa-san-francisco2017.shutterfly.com>. You can also purchase prints and have them shipped to you.



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## FPI Survey and APPA/NACUBO KFM Survey Now Open for 2016-17 Data Input

The 2016-17 cycle of APPA's Facilities Performance Indicators (FPI) survey and the APPA/NACUBO Key Facilities Metrics Survey (KFM) are now underway!



- Participating in the **FPI Survey** yields potent peer comparison key performance indicators, making the FPI a flexible, sophisticated, and powerful tool for analyzing, planning, reporting, and managing your facilities operation. APPA is the only higher education professional organization that provides such a powerful tool to its members.
- **The APPA/NACUBO Key Facilities Metrics Survey** is a collaboration aimed at raising consciousness over some basic key facilities metrics. The goal is for campus finance and facilities professionals to be in alignment on a handful of important annual consumption metrics: Electrical/Btu; Water Consumption; Waste Stream Output; Electrical; and Carbon Footprint.

The deadline for these surveys is **December 18**, so the earlier you start, the more time you'll have to give your operations the critical analysis that these surveys foster, and realize the benefits of the results they generate.

Visit [www.appa.org/research/fpi](http://www.appa.org/research/fpi) for more information and to register to complete the FPI survey, and <http://www.appa.org/research/nacubo.cfm> for more information and to register for the KFM survey.

## 2018 Award Nominations Applications Due November 30, 2017

Nominations and applications are now being taken for APPA's 2018 institutional and individual awards:

- Award for Excellence
- Sustainability Award
- Effective and Innovative Practices Award
- APPA Fellow
- Meritorious Service Award
- Pacesetter Award

Awards nominations submitted after November 30, 2017 will be held and considered in the 2019 award cycle. To find out details about each award, visit <http://www.appa.org/membershipawards/index.cfm> or contact Christina Hills at [christina@appa.org](mailto:christina@appa.org).

## Advertise Your Position Openings in Job Express

If you are looking for a highly qualified pool of candidates for a facilities management opening, Job Express can help you. Your ad will be posted online where it can be seen by thousands of facilities professionals who access APPA's website.

The Job Express audience consists of professional facilities managers in top executive-level positions, individuals who are retiring from the military with extensive facilities and engineering experience, graduates of APPA's Institute for Facilities Management, and members who have earned the Certified Educational Facilities Professional (CEFP) credential.

Job Express gives you market exposure through its online postings. All ads appear in one format for one low cost and are hosted online for eight weeks! Add email and website links so applicants can reach you at the click of a button. To find out more, go to <http://www.appa.org/jobexpress>.

## APPA Events

**Oct 16-19, 2017**

**ACUHO-I/APPA Housing Facilities Conference**, Atlanta, GA

**Dec 3-6, 2017**

**Women's Leadership Institute**, Amelia Island, FL

**Jan 21-25, 2018**

**APPA U (Institute and Academy)**, Portland, OR

**Aug 3-5, 2018**

**APPA 2018 Annual Meeting & Exposition**, Washington, DC

## Regional/Chapter Events

**Sep 17-21, 2017**

**Joint MAPPA/CAPPA 2017 Conference**, St. Louis, MO

**Sep 18-20, 2017**

**RMA 2017 Conference**, Jackson, WY

**Oct 25-28, 2017**

**SRAPPA 2017 Conference**, Charlotte, NC

**Oct 29-Nov 1, 2017**

**ERAPPA 2017 Conference**, Washington, DC

For more information or to submit your organization's event, visit [www.appa.org/calendar](http://www.appa.org/calendar).



## 2018 Report Now Available

at [www.appa.org/bookstore](http://www.appa.org/bookstore)



### 2018 CALL FOR PAPERS: Submission Final Deadline is October 31, 2017

APPA invites you to submit a program presenting solutions for improvement, sharing of best practices, or innovative approaches relevant to facilities professionals throughout the educational community. The APPA 2018 annual conference offers an opportunity for you to be part of the outstanding professional development program, to participate in discussions and share effective strategies to the many challenges facing facilities professionals.

The selected proposals will provide a program that offers innovative, comprehensive, and diverse treatment of issues facing facilities professionals throughout the educational community—colleges, universities, community colleges, and K-12. Topical areas to be addressed, are:

#### The Role of Facilities In Fostering Student Success

- Your Student's Champion – Our Facilities Organizations
- A+: Defining Student Success
- Your Space, My Space, Our Space – Partnering With Academic Colleagues
- Classes Will Commence On The Quad – Flipping the Classroom

#### Facilities Modernization & Collaboration

- One Voice – One Team: Achieving True Collaboration
- Follow the Yellow Brick Road: Pathway to Facilities Modernization
- You Need What? Making the Case for Facilities Modernization
- It's All One Big Sandbox – Best Practice In Flexible Space Usage

#### Be Aware – Be Alert

- Be Safe – Security for the Whole Campus Community
- Crisis Leadership – Strong Leaders: Where Do They Come From?
- Staying Ahead of the Curve —What's Next in Regulatory Codes?

#### Preventive Maintenance for People

- Invest Now – Or Pay Later .... Professional Development Your Best Investment
- Check Mate – Matching the Right People for the Right Job
- What Are You Worth? – Recognizing Your Value
- Do I Really Have To Use This?—Changing Workforce Expectations & Technology

The slate descriptions are provided as a guideline to those wishing to submit. APPA's goal each year is to provide topical material that is cutting-edge and key to the success of all facilities professionals throughout our membership. If you have a topic that you feel is key for consideration, but may not align exactly with the proposed guidelines for this year's conference, we encourage you to submit for review.

Proposals are being accepted for 60-minute concurrent sessions. Programming will occur August 3-5 in Washington, DC. Eight to ten educational sessions will run concurrently in two to three time slots per day.

Here are the **required** aspects for your submission as you prepare your proposal:

- Submission of program title that is 3-5 words in length, along with your abstract that is in a format of a 5-7 sentence description;
- Submission of 4 learning outcomes;
- Submission of complete contact information for each potential presenter to include full name, title, institution or company, phone, and email address;
- Submissions from business partners must include a partnering with an educational entity;
- Submissions can be made by email to [callforprograms@appa.org](mailto:callforprograms@appa.org);
- Submissions will be automatically rejected if the above items are not included.

For the latest on APPA 2018 Call for Programs deadlines and additional guidelines, visit us at <http://www.appa.org/training/APPA2018/index.cfm> and click on Conference Sessions.

If you have questions, contact Suzanne Healy, director of professional development, at [suzanne@appa.org](mailto:suzanne@appa.org).





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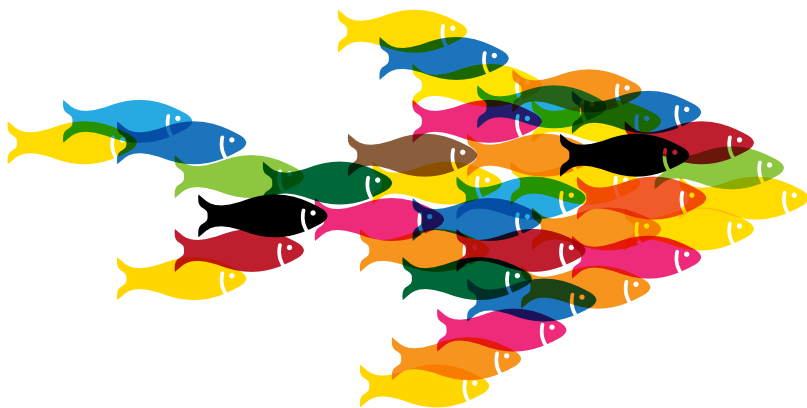
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# Inclusion and Equity in Facilities Management: “The Power to Influence”

By Kimberly Case-Nichols

In higher education facilities management today, it is nearly impossible to create policy or make daily decisions without acknowledging the ever-changing demographics and student expectations within our organizations. Facilities is undeniably one of the most diverse departments on campus, encompassing every level of the profession, as well as an array of personal cultures. This level of diversity presents a great opportunity for us to lead the discussion, and to manage how we provide inclusive and equitable



opportunities—not only for our facilities profession, but for our students, staff, and communities as well.

Quality leadership advocates for engagement and cultural competency as well as inclusive and equitable practices at every level. Cultural competence in the workplace is a personal responsibility that requires taking action to achieve desired outcomes. That responsibility starts with each one of us.

## WHAT IS CULTURAL COMPETENCY?

In the broadest sense, being culturally competent encompasses being aware of one’s own cultural

experiences and perceptions, while being sensitive to differences in the cultural beliefs and practices of others. Many of us are challenged with “seeing” beyond our own subconscious biases, and how they may help—or impede—another person’s opportunities or access. Sometimes, we struggle with the “I don’t know what I don’t know” syndrome.

A starting point for this growth process is simply being willing to learn more about yourself, acknowledge your behavioral blind spots toward others, and develop insight so you can improve your cultural competence. As professional leaders, sharing our own diverse experiences can help connect people, encourage others, and demonstrate how different affiliations enrich our lives.

## SELF-REFLECTION AND PERSONAL POWER

If you wrote an essay about your career and how you got where you are, you would probably reflect on many “aha” moments, and on people (other than your parents) who believed you had potential. Perhaps it was not only working hard, but also having a personal connection with someone, or perhaps the timing of your career change, that helped pave your way. Starting with self-reflection gives you the power to develop insight, and improves your ability to understand societal ideologies and ultimately embrace inclusive thinking.

As you think about how you navigated through your career, what was your inspiration? What are your values, and how have they changed? Be honest with yourself in order to employ a healthy perspective. The power to influence starts with you.

## USING YOUR POWER TO INFLUENCE OTHERS

Once you have tapped into what inspires you and are more aware of your own beliefs and behaviors, you have the cultural competence to foster an inclusive and equitable workplace. There are a number of ways to practice this:



- Be an active listener, and open to diverse perspectives.
- Ask questions and demonstrate your authentic interest to know more.
- Allow others to lead conversations on perspectives of cross-cultural interactions and experiences, and share personal stories of your own.
- Have open and direct conversations to address gender stereotypes and areas of unconscious bias.
- Do not automatically ask the female staff to take meeting notes, set up the office potluck, or send calendar invites.
- Set respectful and fair expectations of inclusive and equitable practices for each employee, and make this part of ongoing performance review discussions.
- Be proactive and encourage employees, students, and community members to participate in discussions and committees so that they have a voice at the table.
- Guide team meetings to include how to address disrespectful jokes, or when people are excluded from decision making or access.
- Assign projects or tasks to an employee to get them out of their comfort zone. Allow them to make mistakes and offer teachable moments to learn.
- Create career-planning succession with each employee, and help them take that next step that they only dreamed of.
- Provide intentional training programs and allow time for employees to participate. For example:
  - Participate in the APPA Mentoring Program
  - Attend conferences
  - Join or start a committee or community of interest
  - Earn an APPA Educational Facilities Professional (EFP) or Certified Educational Facilities Professional (CEFP) credential
  - Provide or look for internship opportunities

## SHARED RESPONSIBILITY

Many of those who achieve their greatest goals are met with adversity, including discrimination because of gender, race, or economic and social status; and sometimes they are denied access to opportunities that come easily to others. As professional facility leaders, we have the power to influence individuals, teams, and an entire organization. Don't let terms, labels, or terminology get in the way of simply talking about and addressing important issues. What is important is that we understand that developing cultural competence for all of us is a lifelong journey. By educating yourself, you can educate others and share the responsibility for fostering inclusion and fairness.

Facilities are the backbone to every higher education institution. As facility leaders and managers, we can influence others to step in and step up with courage, provide opportunities/access, and build a strong support system. Inclusive and equitable practice in facilities are not just about doing the right thing, but about how you influence others to work to their full potential—whether it's developing trade skills, managing a facility project, or mentoring an individual.

Creating a statement of inclusion and equitable practice is a great start. However, we can only truly influence others when we take action ourselves and measure and assess the progress being made. By using our privileges and power for others, we can create an authentic, inclusive work culture that promotes success.

Always remember: we have the power to influence. ☪

---

Kimberly Case-Nichols is director of space management at UNLV School of Medicine in Las Vegas, NV. She can be reached at [kim.case@unlv.edu](mailto:kim.case@unlv.edu). This is her first article for *Facilities Manager*.

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# The Future of Facilities Management

By Nancy Van Elsacker Louisnord

**W**hen it comes to the future of facilities management, “connection” is the keyword. People outside your organization are developing specialized facilities management knowledge—and they’re doing it fast. At the same time, within your organization you are likely receiving more and more specific questions about facilities management—so you must find a way to bridge the gap between “inside” and “outside” knowledge.

Facilities management, then, should always be about figuring out the customer’s question and answering it to the best of your abilities. What are the wishes within the organization, and how do you link these to the possibilities that society offers? In practice this means that we don’t simply copy the interior of one building because it’s not the right solution for the other buildings whose occupants have different needs. You have to reassess what your customers need every single time, and then see how you can offer the best solution to meet their demands.

## KEEPING KNOWLEDGE IN-HOUSE

Once organizations used to have all their services in-house, but now these are often outsourced. As a result, specialist knowledge is moved outside the organization. And then you have to call in the help of sup-

pliers that want to make your organization compatible with their solution, rather than the other way around.

Instead, you should always put the customers’ wishes first and find a suitable solution.

Obviously, outsourcing is something you can’t do without today, but you’ve got to make sure that you know what you’re handing over to others. Managing cleaning or security within a facility are easily contracted. The same goes for food services, but it’s also a good idea to keep some of this knowledge in-house, even if the sole reason is to stay up to date on the latest rules and regulations, and to remain a good discussion partner for your supplier.

## INTEGRATING YOUR OUTSOURCING: A GOOD THING OR NOT?

A recent trend for facility managers is the integration of outsourcing. Now that we’ve reaped most of the benefits of outsourcing individual services, people are starting to look into the possibility of moving different services under one external umbrella, but this trend might be short-lived. This can be compared to the traditional butcher and baker shops. Their businesses suffered terribly thanks to the rise of the mega supermarket. However, these and other businesses like them have evolved to survive, and specialty and



artisan shops are popping up all over the place and carving out their own niche, even going so far as to find success in the world of big-box stores.

The same is happening in the service sector, and we've noticed that large parties have already discarded the idea of integration. And it makes sense: Customers are becoming more demanding and critical of services. To meet these demands, you need to return to your core business even though outsourcing still offers many opportunities. There's not much left to be gained from outsourcing entire product groups like cleaning or catering, but when it concerns specific tasks, there's still some wiggle room.

### MAKING UP FOR LOST GROUND

For facilities managers in the healthcare sector, the healthcare industry has some serious catching up to do. Compared to the business world, sustainability at healthcare institutions is still at an early stage. This needs to change. For example, these organizations often have a serious CO<sub>2</sub> footprint, but they are finding more ways to include sustainability in their business goals—and not just their financial goals. They are also looking at the benefits of circular procurement, so they can examine the possibilities of a waste segregation facility.


Another development to consider in terms of sustainability is the further digitization of services. Thanks to the use of big data and sensors, our buildings are becoming increasingly high tech. This offers many new sustainability opportunities, which we're happy to take onboard. However, organizations shouldn't blindly trust these measuring instruments. Relying too much on them means you run the risk of distancing yourself from the customer. Talking to your users and asking them how things are going is still important—much more important than using a questionnaire to ask them whether they're happy with the opening hours.

### TRANSITION FROM THEORY TO PRACTICE

Trying to stay "future-proofed" requires a constant turnaround in education. The transition from theory to practice is proving to be a challenge. Teachers don't have sufficient knowledge of popular themes like sustainability or rules and regulations. What we need is to integrate current developments and lessons we want to share

with our future employees. If not, this generation of students will graduate in two years' time with the know-how of four years ago.

### FACILITIES MANAGEMENT AS THE CONNECTING FACTOR

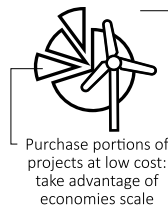
Finally, facilities management is the binding factor between internal and external, between the organization and the market. More and more specialist firms are popping up outside the organization, and we're getting more specialist questions from within the organization. Now it's up to us to connect the two so as to meet the customers' wishes. When I look around I can see many organizations working on this effectively and inspirationally. Organizations must collaborate more, so that we don't have to constantly reinvent the wheel. If we will just open our doors a bit wider and make our practical knowledge available to one another, I believe we will make great progress in this area. 

Nancy Van Elsacker Louisnord is president of *TOPdesk USA*. She can be reached at [n.van.elsacker.louisnord@topdesk.com](mailto:n.van.elsacker.louisnord@topdesk.com). This is her first article for *Facilities Manager*.



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# MISSION IMPERATIVE

## *Harnessing and Transferring Knowledge*

*By Anita Blumenthal*

**A**n 18-year-old boy, just graduated from high school, once took a job as a custodian at the University of Michigan Medical Center in Ann Arbor. His sister, who worked there as well, told him about the 75 percent tuition reimbursement plan for college courses. So began the career path of Christopher Kopach, the 2017-18 President of APPA.

Kopach, who was born in Detroit and grew up nearby, worked full-time while carrying a full load of classes, earning first his associate degree from a community college and then his bachelor's degree in business administration from Eastern Michigan University. By the time he was 28, he was manager of environmental services at the University of Michigan Medical Center, developing the philosophy and processes that he would hone over the next two decades and beyond—practicing Total Quality Management teachings and developing a team atmosphere among all staff members. Even from his first management experiences in his early twenties, Kopach says he learned that “the main thing is that it’s important to treat people as you want to be treated, and also that you make sure to take care of all details, no matter how small.”

Kopach literally arrived where he is today because in 1992, he and his wife Lynda (now married 31 years),

decided to pay a visit to his father, who had moved to the Southwest. “I immediately fell in love with the region,” he says. That’s when he hiked the Grand Canyon for the first time. This year—2017—will mark his 20th hike. In 1994, Kopach moved to Tucson, taking a position as regional director of Jani-King, the world’s largest commercial cleaning franchiser.

He joined the University of Arizona (UA) in 1996 as manager of custodial services, and over the next decade he earned a master’s degree in organizational management and completed what he calls “a slew of certificates and training programs,” including the APPA Institute for Facilities Management in 2002. Remembering his first APPA experience, he recalls enjoying the networking opportunities and camaraderie he found, and being impressed with the quality of the talent of all the APPA instructors, including Lander Medlin, Bill Nelson, and Gary Reynolds.

However, with his major focus on custodial services, Kopach spent his first few years at UA involved in such organizations as the International Sanitary Supply Association and the International Executive Housekeepers Association (IEHA). He served as president of IEHA’s Sonoran Desert chapter. His articles on the effective and efficient

## A Profile of President Chris Kopach







The University of Arizona facilities team.

practices of the UA custodial services unit appeared in *College Planning & Management* magazine and the IEHA magazine.

### **RUNNING A “FAMILY BUSINESS”**

A number of promotions at UA expanded his scope and brought him in 2010 to his current position as assistant vice president of facilities management, responsible for the management of 300 buildings, 11 million square feet, 490 acres of landscaping, a team of 600 employees, and a budget of \$80 million to \$100 million. The numbers might be large, but Kopach's approach, he explains, is “to work as a family business. We have people with good hearts who want to work hard. They need a can-do attitude, to look at a challenge and say, ‘There must be some way we can work things out.’ Above all, this is a customer-service business.”

Kopach believes in a **One Team** approach, which means he keeps in constant touch with his staff, meeting with all of them regularly. He does seven walkabouts or staff communication meetings a month, involving 30 to 40 employees—just himself and his staff talking about what's working and what's not—and what to do about it. For example, he says, “The 900 meters of the metering system were not all being read accurately. So we installed a software program that reads all the meters in real time to see any data issues.”

In addition, he says, “We routinely want to be more efficient,” noting that the budget cuts since 2008 have posed challenges at UA and everywhere else. But he managed to trim \$10 million over the last three years while laying off only three employees. His efficiencies ranged from assigning more footage per custo-

dian to renegotiating a gas contract from \$8.60/therm to under \$3.00/therm.

Kopach meets with his utility group three times a week to look at opportunities for savings and for reducing the university's carbon footprint. Given that UA spends \$34 million a year on utilities, it is vital that operations be as efficient as possible. He projects a much larger IT function, with computerized and automated operation of facilities and utilities.

For example, Kopach explains that out of UA's 22 chillers, three chillers produce 328,000 gallons of water to 2.7 million pounds of ice every night at its central plants. “This allows us to run fewer chillers during the day when energy costs are higher. But we need real-time data from software to spot failures or variances, and we need to ensure that staff understand key performance indices.” The group's initiatives are paying off. “Taking the base line year of 2012-2013,” Kopach says, “we are now saving \$1.5 to \$2 million a year in utility bills.”

### **MOVING AWAY FROM THE “OLD WAYS”**

“I've always been a process person,” says Kopach. He is someone who works out how to do things more efficiently and moves away from the “we've always done it this way” mentality. For example, he says, “Our basketball arena holds 15,000 fans. It used to take eight hours to clean one concourse by hand. Now we use automated equipment. All three concourses are cleaned by one person on a riding auto scrubber in 90 minutes—and the employee is still fresh when he gets off the machine.”

In another case, Kopach recounts that, for decades, two workers maintained the six-plus miles of tunnels under the campus. “They



kept all information in their heads—and then they left,” he says. “Then we did a building information modeling analysis, and we found that some tunnels dated from 1930, and some were not insulated. We added insulation and saved a million dollars.” No wonder Kopach constantly stresses the need to transfer knowledge.

Given the desert climate of Tucson, water conservation should be a priority. Yet Kopach remembers that when he became associate director of environmental services in 2002, groundskeepers were still watering with garden hoses. He allocated funding for a computerized irrigation system to use the least amount of water to



Photo by Rhonda Hole

Above: The Kopachs with international guests—APPA 2017.  
Right: Kopach and Associate Director Luis Rocha.



Photo by Renee Cota



Keating Bioresearch Building





Left: UA's McKale Memorial Center; below: Arizona Stadium's North End Zone.

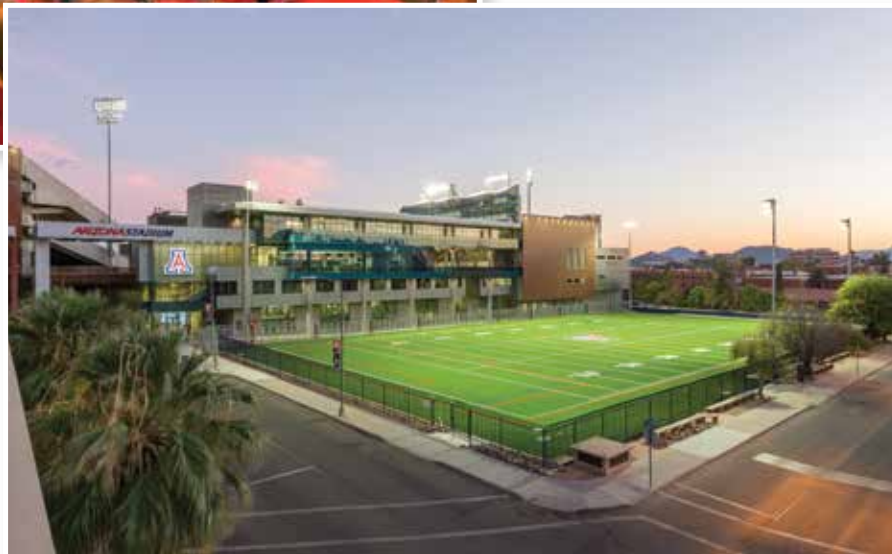


Photo by Kevin Korczyk

greatest effect. Now UA uses reclaimed water and partners with students on sustainability systems, such as harvesting water from roofs and creating water retention basins around trees (for use during the monsoon season of July-September, when Tucson gets nearly all of its 12 annual inches of rain in the form of super-intense downpours). And the desert blooms: From cacti to palm trees to century-old olive trees, UA's 490 acres of landscape represent the largest continuously maintained green space in the state. The entire UA campus was designated an arboretum in 2001, and in 2010 was named a "Tree Campus USA" by the Arbor Day Foundation.

## THE APPA CONNECTION

As Kopach branched out from custodial service management, he became more involved in APPA, joining local and Rocky Mountain APPA (RMA) events. He attended his first RMA regional conference in 2005, and he dates his intensive involvement from 2009, when he chaired the regional conference held at UA.

From there, he rose in the RMA region in 2012 to become president and then moved to positions on the APPA Board, ultimately—and successfully—running for APPA President-Elect. Of his APPA activities, Kopach says, "I've always felt it very important that we give back to regional and national members, sharing best practices with new and current members, using webinars or presentations to spread information on what works. The goal is to learn from each other so that members can reduce their own learning curve."

As he became more involved in—and impressed by—what APPA had to offer, Kopach introduced APPA resources and programs to his staff. He has brought all four tracks of the Leadership Academy to his leadership team, presented onsite at the Tucson

campus by APPA faculty. As of June 2017, at least 50 members of his staff had graduated from the Academy. Now, he has begun a second round, with a new set of leaders taking Track One.

Many members of his leadership team have attended or are currently attending the Institute for Facilities Management, and he has encouraged their involvement in APPA. One 19-year veteran of his staff, Luis Rocha, is the incoming president of RMA. Jenna Elmer, also from the UA facilities team, will join the RMA Board this fall in charge of professional development. Another staffer, Kathia Perez, is on the international APPA Board and works with young and transitional professionals, developing a bilingual Spanish/English Supervisor's Toolkit, and assisting in the Mexico initiative.

## PLANS FOR THE YEAR—OUTREACH ACROSS BORDERS

Kopach has also been involved in APPA's international outreach, and he proposes during his presidential year "to further enhance the Mexico initiative and the Los Amigos Project, partnering with all APPA regions and our friends in Mexico." Kopach has been active on the UA Amigo team for several years. In 2014, his team led an RMA Los Amigos Project workshop that introduced effective energy and operations practices to a



The UA facilities staff.

small group from the Tecnológico de Monterrey system schools in Mexico. This helped plant the seed for the system to further engage with APPA.

Since then, Kopach has worked with six universities in Mexico City, building relationships and sharing best practices. He proudly notes that, while UA won the APPA Award for Excellence in 2013, one of the 2017 recipients is the Universidad Panamericana in Mexico City. One major project of the Mexican initiative, he says, is a symposium on best practices, to be hosted within the next year by the University of Guadalajara (part of the Universidad Panamericana group) and to be attended by university presidents, rectors, and facilities management leaders from Canada, the United States, and Mexico.

As APPA President, Kopach also wants to further the initiatives and accomplishments of his predecessors. First, he wants to continue implementing the strategic plan developed under Randolph Hare, focusing in particular on giving back to all APPA members. Also, he aims to continue Chuck Scott's push toward reinventing ways to be more efficient in the face of continued budget cuts. Vital to this effort, Kopach says, is the need to analyze efficiency and insist on transparency, communication, and the sharing of information.

#### **DEFERRED MAINTENANCE MODERNIZATION AND REINVESTMENT**

Tackling the most troublesome of line items, Kopach wants to lead an effort to rebrand and repackage the task of deferred maintenance, using instead a more accurate term to make the function more marketable: "modernization and reinvestment" or "revitalization." As he explains it, "Our job is to work with senior administration so that they all understand the issue of aging buildings and utilities infrastructure and distribution systems, and how reinvesting in these facilities plays a key role in the

overall academic mission." He makes it clear that APPA should "understand the full gamut of the responsibilities of the chief financial officer (CFO) and other senior leadership in order to partner and support their efforts in overseeing our universities, colleges, and schools. This is another instance where members need to share what works. APPA needs to share knowledge on how to work with CFOs, providing detailed information so that members can speak the language of business and partner with CFOs in the stewardship of our universities."

Related to the importance of understanding the big picture, according to Kopach, is the need for APPA to continue the program of collaborations begun by Past President Pete Strazdas, which offered 20-plus opportunities to work with such associations as NACUBO, ASHRAE, the Association for the Advancement of Sustainability in Higher Education (AASHE), and the Society of American Military Engineers.

In this area as elsewhere, Kopach says, "the issue is how to harness and transfer knowledge. APPA has so much to offer its members, and we want to be sure we are packaging that information most effectively, sharing best practices—expressed in terms of ROI—and using effective mediums, such as webinars."

Another crucial issue, Kopach says, is succession planning, given the waves of retirement in the baby boom generation (even the youngest are approaching their mid-50s). "How," he asks, "are we transferring knowledge and skill sets, sharing these practices with members?" He believes that institutional, regional, and international organizations must stress programs for young professionals, mentoring, and student internships, as well as for transitioning professionals entering the field from other careers. One overlooked but important facet of succession planning that UA considers is how—and whether—its contractors are doing that planning. "The fact that we depend on contractors means that they have to continue to be qualified," he says.

#### **FOCUSING ON THE APPRENTICES**

One knowledge-transfer (and career-building) program that Kopach is especially proud of and wants to share with APPA members is the in-house apprenticeship program that he and his senior leadership developed. This is a nationally recognized program, approved by the U.S. Department of Labor and encompassing HVAC, plumbers, and electricians. The first class graduated in August 2017, and 12 new in-house apprentices



Photo by AEP Services



Photo by Rhonda Hole

Aerial view of the Arizona campus; McClelland park solar array in foreground.

have just begun their program. Kopach proposes to offer APPA members a template or road-map for their own apprentice-

ship programs, and he'll share the details throughout the year and at APPA U in January 2018. For him, history has come full circle: His grandfather from Detroit took the Henry Ford apprenticeship program in high school in the 1920s—now he wants to help young people build their careers in facilities management.

Lending his organizational skills to the community, Kopach is longtime chair of the annual Goodwill Golf Tournament, whose proceeds go to providing free health care for Tucson children. "Over the past 15 years, the tournament has raised \$150,000," he says. In addition, he is chair of operations for the annual Tucson Festival of Books, the third largest book festival in the United States.

Today, Kopach not only works at UA, but two of his three children are students there (Go Wildcats!). Ashley, a junior, hopes to enter the nursing program, and Adam, a freshman, hopes to study engineering. Alyssa plans to attend UA in two years. "Lynda and I could not be more proud of our kids," he says.

Kopach has traveled a long way, from being a high school grad in Michigan, to his current post at UA, to becoming president of APPA. How does he view this process? He explains, "My first experience hiking the Grand Canyon made me realize that we are here for a short period of time. Enjoy the journey." ☺

Anita Blumenthal is a freelance writer based in Potomac, MD. She can be reached at [anitablu@earthlink.net](mailto:anitablu@earthlink.net).

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APPA's Facilities Drive-In Workshop offerings are an excellent way for APPA member institutions to encourage networking and professional development among educational facilities professionals within their local vicinity. These workshops are ideal for professionals who might not normally have access to training and professional development opportunities, due to operating budget restrictions or similar constraints and are a great way to introduce these professionals to APPA, its regions, and chapters.

## **How are APPA's Drive In Workshops Planned and Organized?**

Each workshop is organized with the support of APPA, an APPA Business Partner, and a host educational institution.

### **Responsibilities of the Host Institution:**

- Provide adequate meeting space plus tables and chairs (conference room plus adjoining registration area, as well as separate seating in adjoining area for sponsored luncheon).
- Supply audiovisual equipment (typical requirements are a podium, one or two mics, a projection screen and LCD projector).
- Arrange for parking if needed for attendees.
- Provide menu options to the sponsor (if the host location site has a kitchen or works with required caterers). The sponsor picks up the cost of lunch and all breaks.
- The person coordinating on behalf of the host institution (typically the institution's facilities officer) is present during the workshop to welcome attendees and provide some introductory comments on APPA.

### **Responsibilities of the Sponsor:**

- Works with APPA and the host institution to identify suitable session content and speakers, and firms up the program. This also ensures that the content is fully educational in nature, i.e., does not advocate a particular product or service.
- Manages on-site registration on the day of the workshop, distributes badges and distributes/collects evaluation forms.
- Pays sponsorship fees, cost of food/beverage at the workshop.

### **Responsibilities of APPA:**

- Manages event promotions (produces flyer, email invitations and distributes these promotions).
- Creates list of prospective attendees (from both APPA member institutions and prospective institutions). Shares this targeted attendee list with the host and the sponsor.
- Creates an online registration link and sends regular attendee registration reports out to the sponsor and host prior to the event.
- Works with host institution's facility officer to prepare any comments, supporting materials, slides describing APPA, benefits of becoming involved with APPA, etc.

For more details about sponsoring or hosting an APPA Drive-In Workshop, please contact APPA's Associate Director of Professional Development, Corey Newman at [corey@appa.org](mailto:corey@appa.org).

1643 Prince Street, Alexandria, VA 22314



# APPA Honors Five for Career-Spanning Accomplishments

## APPA Fellows

- Joseph K. Han
- Jeri Ripley King

## Meritorious Service Award

- Shelton Riley
- Jodie Sweat
- Keith Woodward

By Mark Crawford

APPA is recognized around the world as the top professional organization for educational facilities management. A big reason for this is the commitment and dedication of its members to the profession of facilities management and to APPA, the association that represents it. Every year, APPA recognizes some of its top individual achievers with the APPA Fellow designation and the Meritorious Service. The 2017 APPA Fellow recipients are Joseph K. Han and Jeri Ripley King; and the Meritorious Service Award winners in 2017 are Shelton Riley, Jodie Sweat, and Keith Woodward.

Their accomplishments are many and span decades of leadership at state, regional, and international levels. And they are always willing to do more.

As you read through their profiles, you will see the many ways their dedication to service, at all levels of leadership, has strengthened their facilities management departments, their institutions, and APPA.





From left: APPA President Chuck Scott, 2017 APPA Fellows Jeri King and Joseph Han; and previous Fellows Jack Hug, Gary Reynolds, Don Guckert, John Morris, and Jack Colby.

## Joseph K. Han

Central Washington University

Joseph K. Han's career as a college administrator spans 27 years. In January 2017 he joined Central Washington University as vice president of operations, after five years serving as associate vice president of administration and operations for Cleveland State University in Ohio.

During his time at Cleveland State, Han was in charge of the campus police department. To better understand the public safety staff's needs and responsibilities, he enrolled in the police academy and became a commissioned officer. In 2016, Han was awarded the Medal of Excellence by the National Association of Campus Safety Administrators.

Han has also received APPA's President's Award, and his division received the Cleveland State University President's Award for Excellence in Diversity (2015-16). Han has been a member of APPA for 20 years, currently teaches at APPA U as a volunteer, and has participated in several Thought Leaders symposiums.

Han's research project under the auspices of APPA's Center for Facilities Research (CFaR)—a requirement for the APPA Fellow Award—explored the relationship between leadership style and achieving and sustaining excellence. There is no right or wrong leadership style, he maintains. The important factor is employing the best style to achieve the best outcome, given the situation and people involved. "At the end of the day," Han says, "excellence is achieved in an environment of high trust. Trust is fostered through mutual trust. Mutual trust develops from awareness, empathy, competency, and willingness. These four self-discipline activities must be fed daily."

Future plans include continuing to teach at the APPA Institute, undertaking another CFaR project, and writing several articles for *Facilities Manager*. "APPA helps develop and support professionals who improve academic quality and enhance student experience, leading to student success," says Han. "It is so rewarding that my team and I can make a positive difference in the lives of others, every day."

# APPA Fellows—Class of 2017

## Jeri Ripley King

University of Iowa

Jeri Ripley King is assistant director of facilities management for the University of Iowa in Iowa City. She has worked on college campuses for over 30 years. For the past 16 years she has worked in facilities management.

King has been active in APPA for more than 15 years, including serving as APPA's elected Vice President for Information and Research. She attended and taught at the APPA Institute. "Because I started working in facilities management late in my university career," she says, "the Institute gave me a valuable quick-start by providing current best practices in each of the major areas. I was able to attend various cores in planning, design and construction, energy management and utilities, and operations and maintenance—exactly when I needed the information the most."

Her CFaR research project, co-published with Don Guckert, is entitled "Structuring In-House Construction Rates in Colleges and Universities." The study provided an in-depth exploration and understanding of rate setting, benchmarks, and interrelationship of facilities units that continues to provide a framework for understanding. "Even though we cannot have ultimate control over the rates that are set for any of our for-fee services, we need to understand how they are set and what that means for our department, and for the university community," says King. "This includes identifying underlying assumptions and making conscious decisions about subsidization."

Other research and writing projects she has undertaken for APPA include editing the successful anthology *Effective and Innovative Practices for the Strategic Facilities Manager*, and writing several *Facilities Manager* articles.

What is especially gratifying for King is simplifying a complex topic and communicating it in ways that resonate with others, and then watching them expand on the idea to make it better. These interactions have helped her build meaningful relationships with other members through APPA and MAPPA committee work and the Institute for Facilities Management—she finds they are always willing to share their experiences and expertise.

As an APPA Fellow, one of King's roles is to encourage others to become Fellows too. A major step toward fellowship is completing a CFaR research project. "The research should benefit the individual, the individual's department, and the APPA community," she says. "I will continue to encourage interested APPA members to work on a CFaR project and contribute to our knowledge base."

# 2017 Meritorious Service Award Recipients

## Shelton Riley

Texas Christian University

Shelton Riley is director of facility services, physical plant, for Texas Christian University (TCU) in Fort Worth. He has been with APPA for 11 years and took his first leadership position in 2009.

"Shelton has served the DFWAPPA/TAPPA/CAPPA family of APPA at nearly every service level," says Glen Haubold, associate vice president for facilities and services for New Mexico State University.

Some of the positions Riley has held include membership on the TAPPA and CAPPA (Texas APPA and Central Region APPA) boards, regional president for CAPPA and president for DFWAPPA (Dallas-Fort Worth APPA), and membership on the APPA Regional Relationship Task Force. In 2014 and 2015, he also served as CAPPA representative to the APPA Board of Directors. In addition, "Shelton has hosted and planned so many DFWAPPA chapter quarterly meetings that we can't count them all," says Haubold.

Riley is grateful for the unwavering support of TCU, which has allowed him take his commitment to APPA to a much higher level. "I have been very fortunate that TCU has always encouraged me and provided funds to attend many of the APPA training programs," says Riley.

In 2015-16 Riley served on the APPA Mentoring Task Force. He strongly believes that mentorship is a life-changing event and is critical to the success of individuals and their organizations. "We are all mentors, whether we know it or not," he says. "Someone is always watching. Our actions or reactions are what we mentor. The attitude we display when faced by the challenges and struggles of this world tells our story to others."

Outside of APPA, Riley has served on several committees for ISSA/CIMS (Cleaning Industry Management Standards). Also, under his leadership, TCU became the first university in Texas to earn CIMS Green Building Certification with Honors (and the third in the United States).

Currently Riley is developing a sustainable succession-planning project that educational sectors can duplicate. "We have around 11,000 baby boomers retiring every day," he says. "As they leave the workforce, there is a wealth of knowledge that walks out our doors. We need to be more vigilant about retaining that knowledge—just another reason why mentoring is so important to our industry."



## Jodie Sweat

Kennesaw State University

Jodie Sweat is senior director of facilities management at Kennesaw State University in Georgia, and has supported APPA for 27 years.

Her first service to APPA was representing SRAPPA (Southeastern Region APPA) on the College Task Force from 1999 to 2001. Since then she has participated in Thought Leaders symposiums, led GAPP (Georgia APPA) committees, served as president of GAPP and SRAPPA, and hosted an annual SRAPPA conference. She has encouraged her staff to attend annual APPA meetings and utilize resources such as the Supervisor's Toolkit.

Sweat has served on several APPA committees. As a member of the Professional Affairs Committee, she helped shape the criteria and processes used today to assess schools and universities. She conducted countless site visits and provided valuable feedback to universities. Her tireless efforts to advocate for APPA and SRAPPA across Georgia have helped GAPP become one of APPA's most active state chapters. Sweat is currently SRAPPA senior representative to the APPA Board.

"As a host committee chair on both state and regional levels, Jodie has worked on several membership recruitments and given selflessly of her time and talents," states Dan Wooten, assistant director of construction maintenance for Tennessee State University and current SRAPPA president. "She has also served on APPA's task force for small colleges and community colleges to engage and enhance participation."

Sweat is also passionate about sustainability, and helped develop APPA's Sustainability Award. She was recently awarded the R.C. Paul Excellence in Sustainability Award by Kennesaw State University for her leadership in implementing and promoting sustainable practices, especially through energy-saving and recycling initiatives. "We will continue to add new ways to incorporate more sustainable practices," says Sweat. "Although it is work that will never be finished, benefits from small continuous improvement efforts will continue to add up."

Receiving the Meritorious Service Award has been both gratifying and humbling for Sweat. "The award validates how Kennesaw State University and its leadership value the participation of its personnel in organizational governance and operations," she says. "The leadership opportunities and growth I have been afforded through APPA, SRAPPA, and GAPP, and share with my staff, have allowed us to create a culture of innovation and continuous improvement in facilities management."





## Keith Woodward

Quinnipiac University

Keith Woodward is associate vice president of facilities operations for Quinnipiac University in Connecticut. He has been part of APPA for 27 years, starting with his membership in his local chapter, SNEAPPA (Southern New England APPA), in 1989.

Since then Woodward has been a highly active APPA supporter. He served SNEAPPA as treasurer representative to the ERAPPA Tech and Communications Committee. His positions with ERAPPA (Eastern Region APPA) include vice president for technology and communications (2003-07), president-elect, president, and past president (2007-11), and junior and senior representative to the APPA Board during same time period. Woodward was instrumental in the creation of ERAPPA's vice president for annual meetings position—a role that has proven vital to the organization's continued success and has served as a model for other APPA regions.


Perhaps Woodward is best known for being the ERAPPA liaison for the APPA Awards and Recognition Committee from 2010 to 2016. Audiences have come to appreciate his humor and much-appreciated sense of expediency at the ERAPPA awards banquet every year. "Newer attendees of ERAPPA's annual meetings know Keith as 'the banquet emcee'—the one who makes the awards banquet not only enjoyable, but also efficient," says Steve Peary, assistant director for technology and innovation at the University of Vermont and current ERAPPA president.

For the past several years Woodward has been a member of the APPA Annual Conference Planning Committee. "Keith always pushes us to think outside the box on programming offerings, as they directly relate to the development of our general session offerings," says Suzanne Healy, director of professional development for APPA. Woodward has also recently taken on the role of chair of APPA's Thought Leaders Series.

One reason Woodward has accomplished so much for SNEAPPA/ERAPPA/ APPA is his ability to get others to share his vision and enthusiasm. "I find his ability to recruit and inspire others to get



involved in the organization remarkable," says former SNEAPPA president John Michalewicz.

"Success is about creating a great team," says Woodward. "Hiring great people matters. So does listening, communicating, being transparent, and delivering on what you said you would. Don't get caught up in being the boss—just collaborate to find the best solution and move forward." 

Based in Madison, WI, Mark Crawford is a frequent writer for *Facilities Manager* and can be reached at [crawfordliterary@gmail.com](mailto:crawfordliterary@gmail.com).

Nominations and applications are now being taken for APPA's 2018 institutional and individual awards: Award for Excellence, Sustainability Award, Effective and Innovative Practices Award, APPA Fellow Award, Meritorious Service Award, and Pacesetter Award. The deadline for consideration for the 2018 awards is November 30, 2017.

An advertisement for Comprehensive Facility Experts (CFE). The background is a grayscale image of hands pointing at architectural blueprints. Overlaid on the image is the text "COMPREHENSIVE FACILITY EXPERTS" in a bold, sans-serif font. To the right is a logo consisting of a white rounded square containing the letters "fm" in a stylized font, with a superscript "2". Below the logo, the words "FACILITY MANAGEMENT METRICS" are written in large, bold, black, sans-serif capital letters. At the bottom of the advertisement, the contact information "888-887-9995, ext. 201" and "www.adamsfm2.com • info@adamsfm2.com" is displayed in a white, sans-serif font.

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# Congratulations to the 2017 Recipients of APPA's

The APPA Award for Excellence is designed to recognize and advance excellence in the field of educational facilities. Originally established in 1988, the Award for Excellence is APPA's highest institutional honor and

provides educational institutions the opportunity for national and international recognition for their outstanding achievements in facilities management. The award is designed to highlight the essential role of

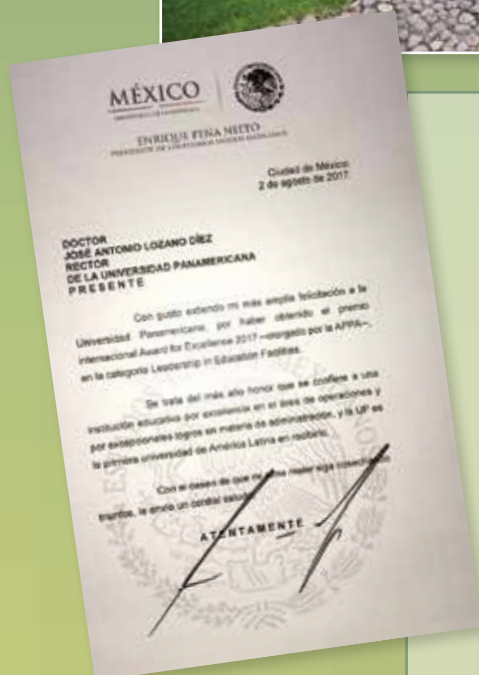
## Universidad Panamericana Mexico

**Location:** 3 campuses: Mexico City, Aguascalientes, and Guadalajara

**Type:** Private, Four-Year

**Students:** 6,020

**Facilities staff:** 180



Letter that the Universidad Panamericana received from the President of Mexico after they were awarded the AFE at the APPA National Conference in July 2017.

Mexico City  
August 2nd, 2017

Attention  
Doctor Jose Antonio Lozano Diez  
Rector of Universidad Panamericana

*It is a pleasure to extend my congratulations to the Universidad Panamericana for obtaining the International Award for Excellence 2017 – given by APPA in the category of Leadership in Education Facilities.*

*It is the highest Honor that this award is presented to an Educational Institution for excellence in the Operations area and for exceptional achievements in the Administration, and the Universidad Panamericana is the first one in Latin America to obtain it.*

*Sending cordial greetings, wishing you much success and achievements to come.*



# Award for Excellence in Facilities Management

facilities operations in the overall institutional mission and vision. Award for Excellence nominations are evaluated using the same criteria applied through the Facilities Management Evaluation Program (FMEP)

in the areas of: leadership; strategic and operational planning; customer focus; information and analysis; development and management of human resources; process management; and performance results. 

## University of Colorado Anschutz Medical Campus



**Location:** Denver, Colorado  
**Type:** Public, Four-Year  
**Students:** 4,346  
**Facilities staff:** 250



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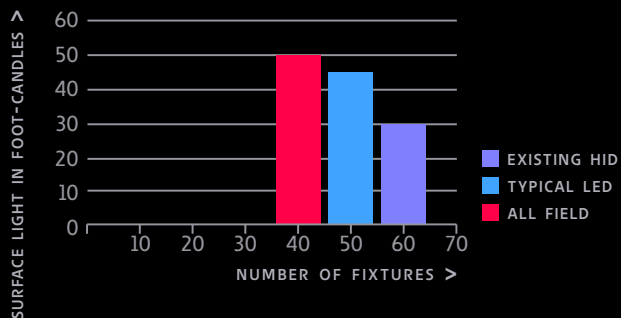
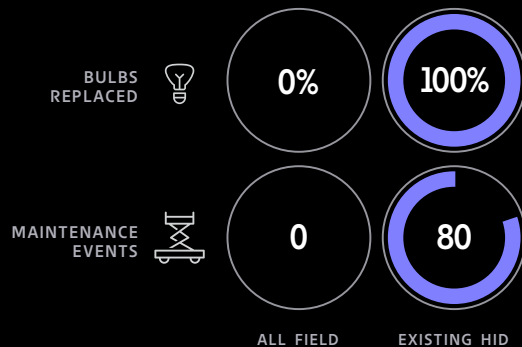


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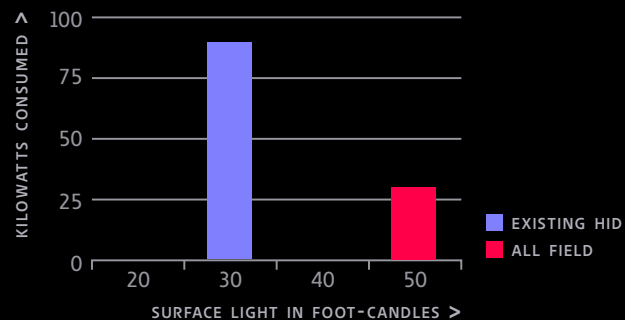
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A photograph of the Golden Gate Bridge in San Francisco at night. The bridge's iconic red-orange towers and suspension cables are illuminated, and the city lights of San Francisco are visible in the background under a deep blue twilight sky.

# 2017 CONFERENCE HIGHLIGHTS

APPA/PCAPPA/BayAPPA

San Francisco

July 21-23





Photos by Rhonda Hole

View all conference photos at <https://appasanfrancisco2017.shutterfly.com>





# 2017 CONFERENCE HIGHLIGHTS



President's Recognition and Gavel Exchange— Chuck Scott and Chris Kopach



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APPA's Past Presidents

L-R: Jack Colby, Gary Reynolds, David Gray, Pete Strazdas, Jack Hug, Polly Pinney, Chuck Scott, Darrel Meyer, Randolph Hare, Chris Kopach.



# 2017 Institutional Awards



## Meritorious Service Awards



**Shelton Riley (CAPPA)**



**Jodie Sweat (SRAPPA)**



**Keith Woodward (ERAPPA)**

## Pacesetter Awards



- Winnie Kwofie**, *Stanford School of Medicine*
- Emmet Boyle**, *University of Regina*
- Michael Hamilton**, *Iowa State University*
- Julius R. Williams**, *University of Maryland*
- Lee McQueen**, *University of Nebraska at Kearney*
- Rebecca Griffith**, *Embry-Riddle Aeronautical University*
- Allen Boyette**, *North Carolina State University (Not pictured)*

## APPA Staff



L-R: John Bernhards, Corey Newman, Kristin Witters, Holly Judd, Direna Cousins, Kelly Ostergranet, Jeannine Fischer, Karen Aguilar, Christina Hills, Lander Medlin, Suzanne Healy, Steve Glazner.

## APPA Staff Awards



Steve Glazner, 35 Years



Christina Hills, 10 Years

## Sustainability Award



### Public:

Arizona State University  
The Ohio State University  
University of British Columbia

### Small Colleges and Universities:

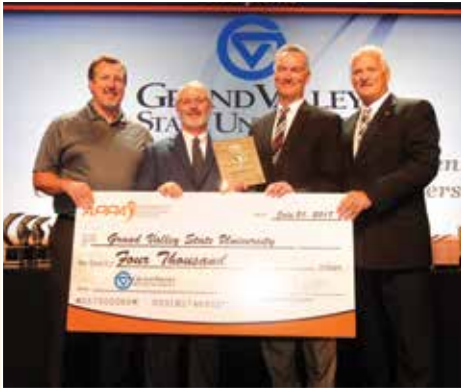
University of Washington Bothell

### Community College:

San Mateo County  
Community College  
District



## 2017 Effective and Innovative Practices Award



**Grand Valley State University**, “Electric Solar Panel Array Garden: A Consumers Energy/GVSU Partnership”



**Oklahoma State University**, “The Next Level Project: A Model for Effective Change”



**Penn State University**, “Penn State’s APPA Credentialing Cohort Program”



**University of British Columbia**, “Energy Conservation Using Campus WiFi Data”



**University of Texas at San Antonio**, “The Development and Use of Portable Variable Frequency Drives (VFDs)”

## Award for Excellence



**Universidad Panamericana Campus México**



**University of Colorado Anschutz Medical Campus**

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# 2017 Individual Awards



## APPA Fellow Award



**Joseph K. Han**  
*Central Washington University*



**Jeri Ripley King**  
*University of Iowa*

## Rex Dillow Award



**Ryan M. Kmetz**  
*St. Lawrence University, "Designing a Resilient Campus"— November/December 2016 Issue*

## Unsung Hero Award



L-R: **Shelia Awalt** (CAPPA), **Dave Woodson** (PCAPPA), **Steve Gasser** (RMA)  
Not pictured: **Casey Charepoo** (SRAPPA), **Erin Marsh** (MAPPA), **Paul Martin** (ERAPPA)

## President's Award



**APPA's Audio Visual Squad:** *Jim Metz, Karl Ericson, and Gregg Guntherand*



**Vicky Scott**



**Rhonda Hole, APPA photographer**



**Total Cost of Ownership Work Group:** *Doug Christensen, Ana Thieme, and Dana "Deke" Smith. Award accepted by Cameron Christensen*

## Rising Star Award



**Russell Garcia, Johnson Controls, Inc.**



**Jeremy Saline, ASSA ABLOY**

## Douglas K. Christensen Distinguished Leadership & Ethics Award



**Jack Hug, second from left, with Christensen family.**

**Jerome Roberson, Ph.D.,**  
Howard University Law School:  
"Aligning Facility Management  
with an Organization's Core  
Business" (not present)

## CFaR Research Award





# Thank you!

## 2017 APPA Conference Highlights

800

Attendees—  
institutional guests  
and business  
partners

8

Countries  
including the US/  
Canada, and  
Mexico

240

Institutions  
represented

97

Exhibitors



# The APPA TCO Standard—A Major Step in the Right Direction

By Dana K. “Deke” Smith, FAIA

**T**he APPA Total Cost of Ownership (TCO) standard is a major step in the right direction for the facilities and infrastructure industry. For far too long, the industry has focused primarily on the first cost of facilities. Years ago, low bid was the focus, which made things even worse. The concept of TCO brings with it a glimmer of hope that the industry can change positively over time. And the time to begin the change to TCO is now!

Psychologically, people simply do not want to look past the initial cost of a facility and come to grips with how much it will really cost them over its life. They think that if they can afford the first cost, then they will be able to cover the operating and maintenance costs out of existing budgets; but in reality this is often not true, and the brand new building begins to sink into disrepair the moment it is put into service. This may be because the owner now has other issues to focus on as well as a loan and inter-

est to pay, and money goes into those items versus setting aside funds needed for future operating costs and repairs.

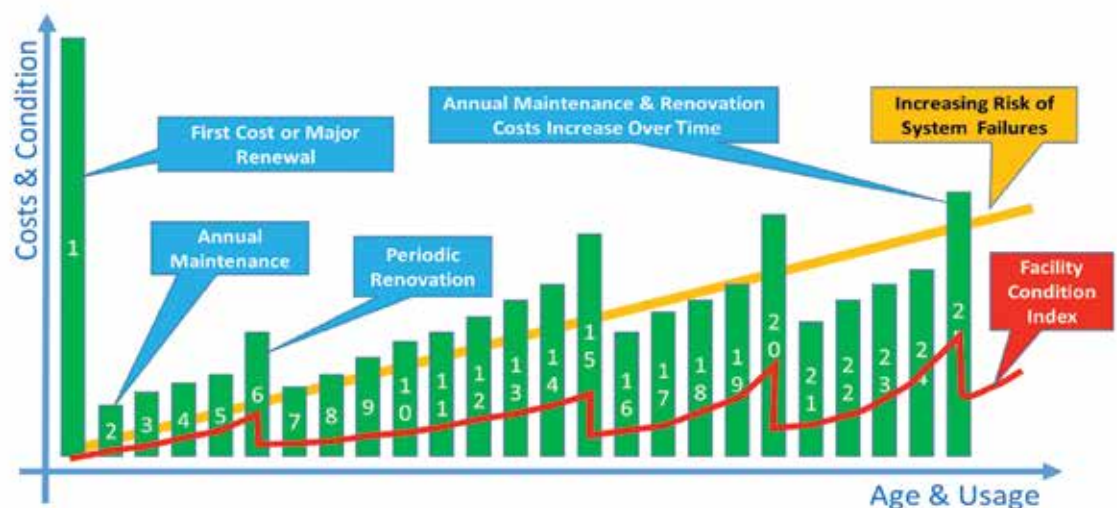
Both operations and maintenance costs are predictable based on the initial level of quality specified, and should be plotted on an annual basis for the life of the facility—ideally before making the decision to construct that facility. The truth is that some facilities need to be removed from the portfolio, in conjunction with adding new ones, in order to meet ongoing budget realities. TCO can help with those decisions as well.

## ADOPTING A CULTURE CHANGE

The issue is that until a TCO culture is adopted, we simply do not have the metrics to evaluate the true impact and sustainability of our decisions.

In order to establish a common culture, one needs to first have a standard in place as the foundation on which all can build. TCO is scalable and applicable to

**Figure 1: TCO View of Project**





every project—from the smallest to the largest—and includes new and existing facilities. Clearly you get what you pay for, and TCO will allow you to plan ahead so you can truly optimize all your resourcing decisions.

### A LONG FUTURE VIEW


If you do not procure quality products with low operating costs, allow for long mean times between failure, and account for future maintenance, you will pay dearly over the long future of the facility. If you do not plan ahead to maintain an asset from day one, then that asset will simply not last as long as it was intended, and costs will actually increase due to a need for earlier than expected replacement. The impact will not be felt immediately, but deferred maintenance will ultimately catch up with you, and you will need to do far more to get your facility back to an acceptable and usable condition if you do fail to stay on top of routine maintenance.

Figure 1 provides a hypothetical 25-year snapshot of a project. (The chart could easily look at more years, and as the table is updated over time, it will become more accurate.) The Facility Condition Index (FCI) will be affected with each major renovation, and the owner will need to determine at what point major renovations should take place. This analysis may be guided by multiple reasons, ranging from marketing to the general fit or purpose of the facility. Having this information allows owners to better understand the risk and impact of deferred maintenance or facilities renewal and modernization.


### NEW TOOLS

The industry will need a new set of tools built upon the standard to fully appreciate the potential opportunities of TCO. These tools must be able to provide decision makers with the data they need to make better decisions—decisions that will allow them to understand the true long-term impact of not funding maintenance when it is needed. We need to be able to articulate just how much a facility will cost over time. Currently these high-quality and granular standards-based tools do not exist.

### SUMMARY

Implementing TCO can be a real game-changer for your organization. Using the APPA standard will help ensure that not only are all costs considered, but also that TCO for each facility is computed based on similar information. Using a national standard built upon international standards, as the APPA TCO standard is, will also allow you to compare your situation with others and validate that you are making the best decisions possible over time, as TCO matures as a key asset and facility management tool. 

Deke Smith has construction, value engineering, life-cycle costing, and building information modeling experience and is an advocate for ensuring a sustainable future for the facilities and infrastructure industry. He is president of DKS Information Consulting, LLC, Herndon, VA, and serves as a co-chair of the APPA Total Cost of Ownership Work Group and Standard Committee. He can be reached at [deke@dksic.net](mailto:deke@dksic.net).



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# ADA Guidelines, Electric Cars, and Energy Partners

Compiled by Sarah Dosik

**L**istNotes is an occasional compilation of a small sampling of recent discussion threads found on the APPAinfo discussion listserv. More than 1,040 educational facilities professionals subscribe to APPAinfo and contribute to lively discussions, guidance, and networking on any topic relevant to campus facilities issues. To join the list or to learn more, visit [www.appa.org/discussionlists](http://www.appa.org/discussionlists).

The following discussions have been edited for clarity and space.

While addressing ADA building deficiencies, has anyone developed a formalized guideline to help determine how deficiencies are prioritized?

—Barth Breneman, Saint Louis University



## TONY SIMPSON, ISES CORPORATION

From ADAAG: Prioritization

Compliance is required up to the point the 20 percent cost cap is reached, even where it does not result in a fully accessible path of travel. Where costs exceed this cap, compliance should be prioritized in this order:

- an accessible entrance
- an accessible route to the primary function area
- restroom access
- an accessible telephone
- an accessible drinking fountain
- access to other elements such as parking and storage

Here is a link to Department of Justice standards: [www.ada.gov/2010adastandards\\_index.htm](http://www.ada.gov/2010adastandards_index.htm).



## JEFF GRIMM, THE HILL SCHOOL

It's not really "formal" in the sense that each and every deficiency can be addressed individually, but at my previous two institutions I put into place a general categorization to help. We got sued at one and the other had little to no ADA compliance efforts to show, so we did have to prioritize and this seemed to work and the DOJ was satisfied with our approach when they "visited" both campuses while I was at each.

1. If you can't get to the building, then you can't get in the building. Therefore, our first priorities were parking lots and pathways.
2. Building entrances were our secondary priority. This has become much more problematic since



the change in the ADAAG in 2014. It used to be only one door had to be accessible; now it is a minimum of two doors, or 67 percent of the total number of entrances in the building.

You run into other issues when you start to face total public access issues like theaters and stadiums. Again, the changes in 2014 are onerous if you are a facilities person trying to make your campus ADA friendly according to the law, or if you are the person trying to fund all of this. All I can tell you is that you will be spending BIG money to make those two kinds of spaces fully ADA compliant. Just get out the book and read how they now calculate what seating is needed, how it is to be dispersed, active listening devices, and so on.

How do campuses handle electric cars belonging to faculty, staff, or students—do you have a policy in place for charging these cars? I am told that a car can plug in the special charging device to any outlet and that device has a special cord to plug into the connector for the car.

—Stephen Hibbard, Concordia University Wisconsin

#### JOHN MANSFIELD, SEATTLE PACIFIC UNIVERSITY

We have installed 4 sets of car charging stations. These are pay stations and you have to be connected to the pay station service. We have set up, through the service, a discounted price for staff, students,



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and faculty. They are also in restricted parking lots until 6:00 p.m., after which they can be used by the community. The stations have the capability to send emails to those plugged in that they need to move their cars when charging is complete. We haven't had an issue yet with them all being occupied, so they haven't been activated yet.



**STEVE LONG, FURMAN UNIVERSITY**

We have provided charging stations in several parking lots for both guests and employees. These are not permanently assigned spaces but are to be used for charging purposes only. Just because a person drives an electric car does not mean they can use the spot all day, every day.



**JON CRANE, UNIVERSITY OF MICHIGAN**

At U of M there are approximately 12 to 15 spaces dedicated to plug in electric vehicles. The spaces are open mainly to faculty, and to students who have purchased a paid parking sticker/pass. There are a few spots that are in lots that public can use at metered parking lots. Currently, although this may change, that charging is paid for by the university. The drawback is that the spaces have a 4 hr. limit. Useful for allowing a larger number of people access, but a drawback when you have to move your car at lunch and finding an open parking spot mid-day can be difficult on campus.



**DAVID TURNQUIST, UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS**

We placed 17 charging stations in a parking garage that is used by permit holders and visitors. The university electricians installed the stations and the users are not charged since the cost would only be pennies a day, and the cost of billing would far exceed the cost of the power consumed. There is no time limit for the stations and there are about 35 electric vehicles on campus. We will be putting more charging stations in any new parking structures that we build.

Has anyone had experience with using an energy partner to assist in reducing utility costs by implementing changes in behavioral and operational practices? Their fee would then be paid from the calculated savings. I am not referring to an ESCO that performs capital projects. I would be interested in hearing about your experience with these types of firms?

—Donald Drost, Middlesex County College



**LAURA WIRTH ZULLO, UNIVERSITY OF PITTSBURGH**

I would be very careful with this. I've seen "calculated" savings include inflated utility rates, estimated operating and maintenance costs (difficult to measure), "estimated" hours of operation, etc. To date, we have not agreed to these types of arrangements. We prefer to pay consultants for their efforts directly and reap the savings ourselves.



### BRYAN ARNOLD, RIVERSIDE UNIFIED SCHOOL DISTRICT


I agree about proceeding with caution. You would be better off hiring your own personnel to do exactly the same thing, which can be done through training, communication and maximization of any existing automation systems. Most of these agreements require you to hire someone any way on your dime.



### WILL NEWMAN, VOLUNTEER STATE COMMUNITY COLLEGE

I suggest taking the Institute of Energy Professionals' Professional Energy Manager course. I attended for Volunteer State Community College, and what was taught in class was a huge help. Most colleges can save 8 to 10 percent just doing in-house projects. It's not an easy course but worth the time!



Sarah Dosik is a student at Christopher Newport University in Newport News, VA. She served eight weeks this summer as APPA's communications intern. 

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# Technology Is Transforming Campus Parking

By Bill Smith



It's often challenging for universities to satisfy all campus parkers. The good news is that in recent years, numerous new technologies have been introduced to make campus parking more user-friendly and manageable.

"The rate of technological advancement is unprecedented, and these advances are providing significant benefits to colleges and universities," says Dan Kupferman, director of Car Park Management Systems for Walker Parking Consultants. "Technology has made parking more efficient, more precise, and easier to manage. It's also making parking more customer-friendly than ever before, which should make campus parkers very happy."

## PARKING GUIDANCE

One of the most useful technologies is parking guidance, which points drivers directly to free spaces. Parking guidance systems (PGSs) have recently been installed in campuses across the United States, most notably Texas A&M, Oklahoma University, and Colorado State University. These systems utilize sensors to monitor whether a parking space is occupied and LED lights to inform parkers of their status. In garages, the sensors are typically installed on the facility's ceiling; while parking lots and garage rooftops use surface-mounted sensors. Guidance systems feature signage at major decision points, such as facility entrances and on each floor, indicating how many spaces are available.

"Parking guidance systems allow universities to provide a much more customer-friendly experience," says Dale Fowler, director of INDECT USA, a provider of PGSs. "By guiding drivers directly to available spaces, they eliminate the need for drivers to search for a parking space, which makes parking much more convenient and safer."

Fowler points out that PGSs are particularly useful for major universities with large parking facilities. Texas A&M's Cain Garage, which serves more than 60,000 students, staff, and faculty, also provides premier parking for fans attending football games at Kyle Field, the fourth-largest stadium in the United States. The garage's PGS has significantly reduced congestion there since it was installed last year. Research suggests that PGSs can reduce the amount of time it takes to park by as much as 40 percent.

Customer service isn't the only reason universities turn to PGSs. Colorado State University installed a system to support its commitment to sustainability. CSU was named America's Greenest University by BestColleges.com in 2017, and university planners installed parking guidance as part of a campus-wide green parking initiative. The CSU system promotes sustainability by minimizing the time spent searching for parking, thus dramatically decreasing the amount of vehicle exhaust emitted in the structure and the amount of unnecessary fuel wastage.

## SENSOR TECHNOLOGY

Sensor technology can also serve as a powerful virtual parking system, making it easier to manage parking behaviors to achieve campus planning goals. The University of Central Missouri uses sensors to support on-campus businesses, while simultaneously managing valuable parking spaces more effectively. UCM was one of the first American institutions to implement a "Shop & Go" program that establishes dedicated short-term parking zones for visitors wishing to make quick shopping runs. The 53 Shop & Go spaces are located adjacent to an on-campus, mixed-use facility that provides upper-class housing, a university store, and retail establishments. The spaces offer free short-term

parking so patrons can conveniently find spaces close to their destinations, do their business, and return to their vehicles. The ticketless system permits one-hour parking, which promotes frequent turnover of spaces.

The Shop & Go system is managed by single-space wireless parking sensors and a proprietary software system that monitors the spaces. The ground-based sensors detect the presence of a vehicle and record the amount of time the parker has remained in the space. If a car stays too long, the system alerts enforcement officers via their mobile devices, letting them know which parking space contains the offending vehicle. The officer can then take the appropriate steps: issuing a warning, writing a ticket, or arranging for the vehicle to be towed.

"This is the first program of its kind at an American university," says Gorm Tuxen, president of IPsens, a provider of cloud-based parking solutions. "But it's just the tip of the iceberg when it comes to utilizing sensor and other technologies. As programs like this become more common, software developers will be able to create tools that provide even more benefits."

#### FRICTIONLESS PARKING

The latest trend in parking technology, frictionless parking, allows drivers to park without interacting with traditional payment systems. Frictionless parking revolves around a suite of technologies built on top of a Parking Access Control System—technologies such as license plate recognition (LPR), barcode readers, and reservation software that make parking seamless and interactive by removing the need to stop at gates to enter or stop at exits to pay. Parkers just drive in and out as they wish, and the system recognizes the vehicle, associates it with a previously generated credential, and bills the driver or credits it to a permit, often through a smartphone.

The University of North Carolina at Charlotte recently installed a system utilizing EMV-compliant payment terminals (EMV stands for "Europay, MasterCard, and Visa"), LPR technology, specialized software, and reservation technology. Through the system, virtual parking permits are linked to license plates, eliminating the need for physical parking permits and allowing drivers to manage their accounts online.

"This frictionless suite provides an ex-

traordinarily convenient parking experience," says Blair Taylor, vice president of Sentry Control Systems. "UNC Charlotte has become one of the first universities in the United States to offer frictionless parking to students, staff, faculty, and visitors."

#### EXCITING TIMES

These are exciting times for campus parking administrators. Gone are the days of staffing lanes, handling cash, and guessing how to manage utilization. These new technologies allow colleges and universities to provide a much better parking experience, while at the same time managing parking assets more efficiently and effectively. And with the constant pace of parking technology innovation, we can expect even more exciting advancements in the not-too-distant future. ☺

Bill Smith is a public relations consultant serving the parking industry, as well as a contributing editor to *Parking Professional* magazine. He can be reached at [bsmith@smith-phillips.com](mailto:bsmith@smith-phillips.com). This is his first article for *Facilities Manager*.



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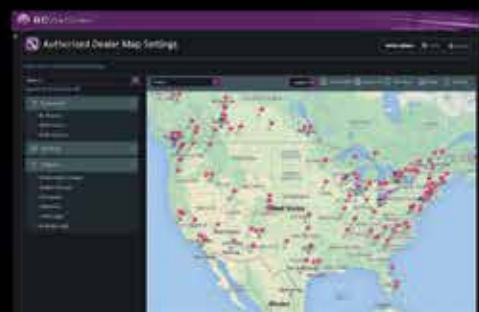
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# Getting the Most out of APPA's FPI Survey and Report Tool—And a Preview of What's to Come

By Erik Backus, P.E., LEED AP BD+C, ENV SP, FMP, and  
Ted Weidner, Ph.D., P.E., AIA, CFP, DBIA

**P**resently, the APPA Facilities Performance Indicators (FPI) survey includes over 350 institutions that participate on an annual basis using the full survey or express survey options. Many of these institutions have been multi-year participants and “true believers.” Fred Plant, the retired executive director of physical plant at Valparaiso University has stated that “[t]he FPI has always been an effective means for one to mark areas of needed attention and/or to identify those aspects that are going well by looking at one’s own data year to year and by comparing to benchmark institutions.”

So the question is: Why aren’t all colleges and universities using the FPI and/or participating every year? The common answer from senior facilities officers: “It’s a lot of work just to fill out the survey!” And, “What’s the ROI!?” (sounding much like their institution’s chief financial officer).

## THE POWER OF THE FPI

At a popular session at this year’s APPA/PCAPPA/BayAPPA conference, the value of the APPA FPI and what it can be used for was front and center. First and foremost, as facilities professionals, we are being asked some key questions regarding our value proposition for our institutions. They are struggling with many challenges, many of which directly relate to and impact facilities, including:

- Unreasonably high overhead costs
- Substandard classes and teachers
- Inconvenience of time and place
- Pricing competition

This year’s APPA Thought Leaders symposium focused on “Transforming Facilities to Achieve Student

Success,” [see Part 1 in this issue]. A key question when addressing these challenges and trying to leverage any college or university’s facilities toward student success is, “How are we doing?” The APPA FPI provides these answers across the full range of any facility organization’s portfolio, and its power lies in its ability to help institutions measure and assess their progress year to year and area to area, but even more, across all areas of effort in order to meet their overall objectives.

## UNLEASHING THAT POWER

Those colleges or universities using the FPI to its fullest have moved from asking, “Are we spending enough on our facilities portfolio?” to asking, “Is our institutional portfolio appropriate for the delivery of our mission?” To do this, institutions move from how they are doing in a key metric like Annual Facility Operating Expenditure (AFOE) as a percentage of Current Replacement Value (CRV), and start to look at one metric in comparison to other metrics, such as AFOE against Student Full-Time Equivalent (SFTE) and AFOE as a percentage of Gross Institutional Expenditure (GIE), to bring a fuller picture of what is happening in their organizations. Further, these institutions also start focusing less on what others are doing (e.g., benchmarking against others), and look at year-over-year progress, not only in facilities, but across the college or university so as to demonstrate how they, as facilities professionals, are able to make the big impacts needed for their institution.



## WHAT'S NEXT FOR THE FPI

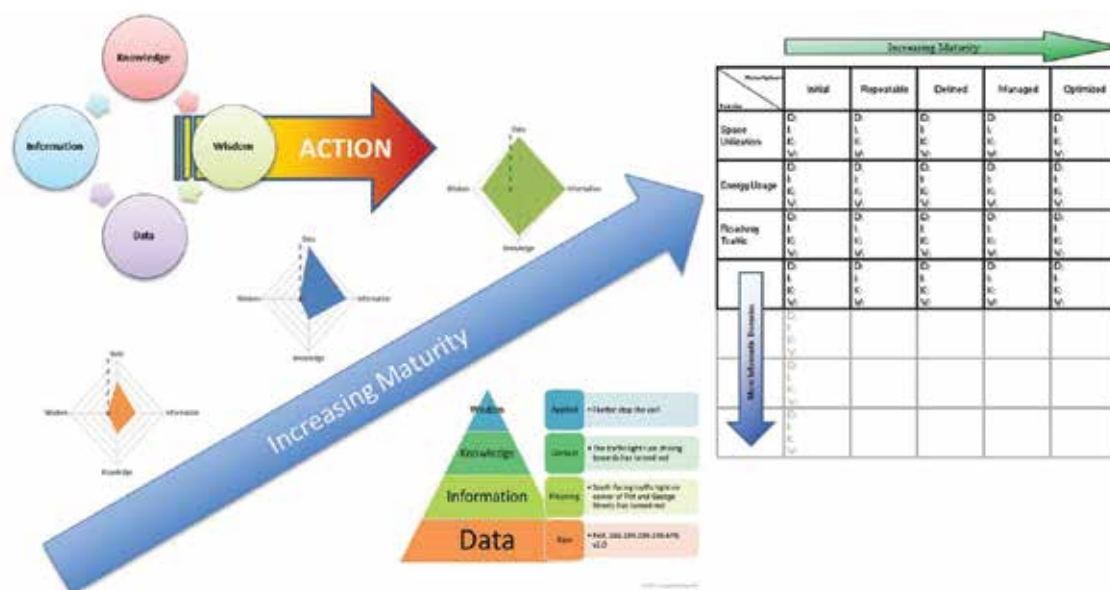
Thanks to help from the APPA Facilities Informatics (FI) Work Group, we are contemplating some significant changes in a new version of the survey: "FPI 2.0." This begins by using a framework of how to guide institutions as they work to improve their facilities organizations.

Published last year, the *APPA Facilities Informatics Maturity Matrix Technical Report* (see Figure

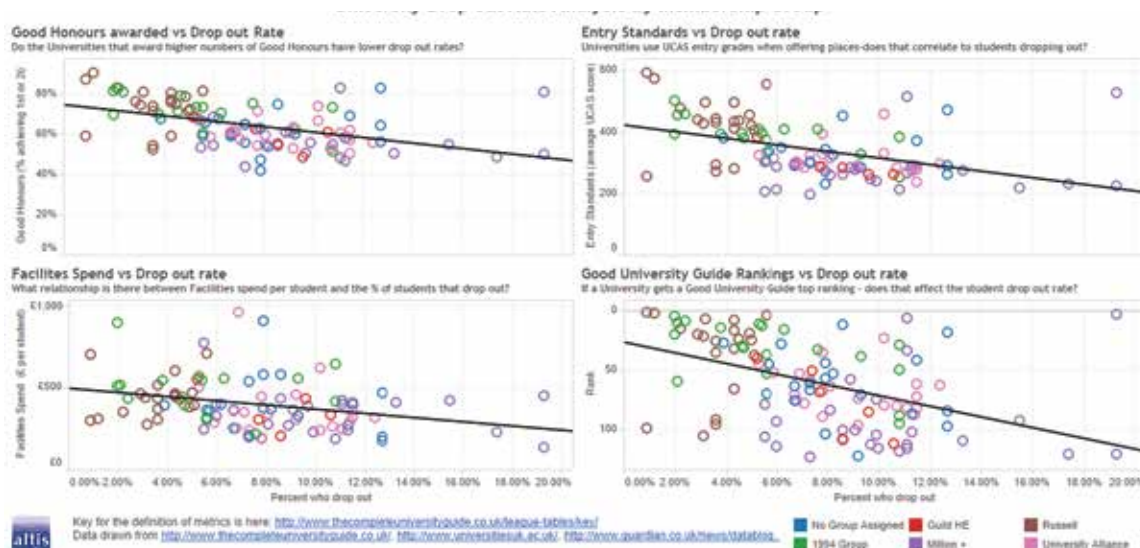
1) provides that guidance by helping institutions understand how to gather, interpret, and apply data sources in order to make the best possible decisions and be proactive about their growth (the report is available at the APPA Bookstore).

As a result, the next version of the FPI is going to start with leveraging existing data sources such as the Integrated Postsecondary Education Data System (IPEDS), the National Science Foundation Survey of

**Figure 1: Excerpts from the APPA Facilities Informatics Maturity Matrix Technical Report**



**Figure 2: University Dropout Rate Analysis by Membership Group**



Retrieved from Tableau public, 16 July 2017 (<https://public.tableau.com/en-us/s/gallery>)



Science and Engineering Research Facilities (SERF), and your institution's IRS Form 990.


To do this, efforts are being made to develop a way to "auto load" this data (which is already being submitted by your institution to these data warehouses) into the APPA FPI, and give participants the opportunity to correct and validate this information as part of the survey cycle. If you're unfamiliar with these other reporting systems, this may be the perfect time to find out who at your campus submits the data and to learn how it is used.

Speaking of the survey cycle, it is hoped that the "FPI 2.0" database will be constantly updatable, enabling continuous submission as well as ongoing updates, while reporting out within certain predefined time frames to give participants snapshots that can aid in making comparisons with the past.

Finally, to make the survey even more useful, the next generation of the FPI will feature dashboards and visualization tools that will equip facility managers to better see their progress, work to improve their facilities and facility operations on an ongoing basis, and tell their story (in language that makes sense both inside and outside facilities organizations, thanks to APPA's partnership with NACUBO, the National Association of College and University Business Officers). Being able to show such things as how much your institution is spending on its facilities (AFOE) in relation to the dropout rate (see Figure 2) of students helps you to not only have a seat at the table, but to literally be the builder of that table for the mission of your institution.

## CONCLUSION

The APPA FPI already brings value to participating institutions by helping them see their own pathway and the pathways that their peers are taking. "FPI 2.0" will raise the bar and provide even better ROI, by: 1) making it easier to complete through auto loading of data, 2) enabling survey participation on an ongoing basis, and 3) providing tools that allow you to show what you are doing better, and doing in ways that will have greater impact on the overall mission of your college or university, as well as your facilities and

their operations in the future. With that knowledge, you'll have a much better picture of the road ahead. 

Erik Backus is director of construction engineering management at Clarkson University and can be reached at [ebackus@clarkson.edu](mailto:ebackus@clarkson.edu). Ted Weidner is an associate professor at Purdue University and consults on facilities management issues primarily for educational organizations. He can be reached at [tjweidne@purdue.edu](mailto:tjweidne@purdue.edu).

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Book Review Editor: Theodore J. Weidner, Ph.D., P.E., CEFM, AIA

Every so often I encounter a book that is more relevant to this column than originally thought. Books that I read for pleasure and as a diversion fall in this category. To that end, I offer a book by one of my favorite authors that is both a diversion as well as an inspiration for facility officers. Sticking with the normal theme is a book that looks at the future, in general, but has clear implications for facility officers now.

### THE AMERICAN SPIRIT: WHO WE ARE AND WHAT WE STAND FOR

David McCullough, Simon & Schuster, 2017, 192 pp., hardcover \$25.00, ebook \$12.99, audio book \$9.18

Most of us work in higher education and have the ability to partake in some of the benefits associated with it: athletic events, music performances, art exhibitions, and speakers on a wide range of topics.

However, few of us bother to attend a commencement ceremony to hear the speaker. It's possible it doesn't happen because the ceremony is an event for students and parents and is frequently limited to the families of those graduating, or because we are busy ensuring that it runs smoothly—very understandable reasons.

Having sat through several commencements myself, I am well aware that the speaker may not be particularly memorable despite being rather famous. But occasionally, an exceptional and thoughtful speaker makes an appearance and shares some profound thoughts. That's the case with David McCullough, a

wonderful person to listen to or read. *The American Spirit* is a collection of 17 speeches given at campuses across the United States, not all at commencements, that do what he does best—make history real and alive.

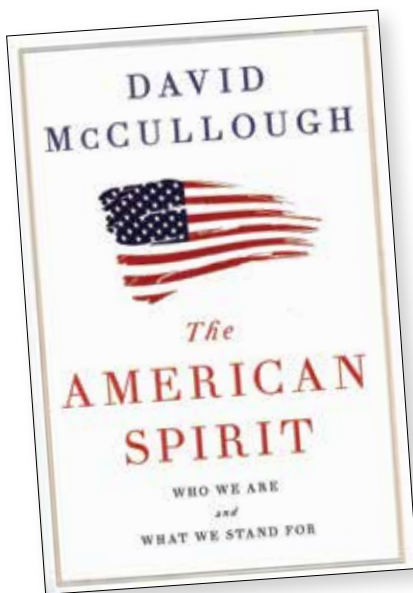
I've enjoyed reading McCullough's books for decades. I believe I have a copy of all his books, and a few are signed. Beginning with his first book, *The Johnstown Flood*, a truly horrific event in 1889, and his chronicles of two great engineering feats, the Brooklyn Bridge and the Panama Canal, he brings out the events of the time and brings the reader into the lives of the people he writes about.

In *The American Spirit*, McCullough reminds us what was notable about the people who lived and worked in different parts of the United States. Many regular people are included, not particularly different from you or me except for their character, determination, or the times that made them significant. These are stories of people who were significant not because they were particularly intelligent or athletic—although those characteristics might have contributed—but because they were focused, determined, and possibly idealistic. Each made a contribution to the events of their time and made changes to the lives of others in their city, state, or region.

McCullough is a magnificent writer of history not because of his ability to marshal facts and dates, but because of the way he weaves the stories of his subjects around those facts and dates. He can bring events to life and put us into the mind of his subjects, while ensuring that we understand the significance of those events and their effects on subsequent generations.

While *The American Spirit* is a departure from the usual subjects reviewed in this column, I found it to be important and inspiring. The people addressed in the speeches (the graduates) are the same ones whom we have served over four or more years. They are the ones who are being charged to make the world a better place. But we were the ones who helped contribute to their education through our service, and we ought to enjoy hearing (or reading) why their education was important and the possibilities they have for greatness via dedication and commitment to a worthy goal.

When I need a lift, I read McCullough for inspiration and relaxation. I hope you'll be able to do the same.



## THE SECOND MACHINE AGE: WORK, PROGRESS, AND PROSPERITY IN A TIME OF BRILLIANT TECHNOLOGIES

Erik Brynjolfsson and Andrew McAfee, W.W. Norton & Company, 2014, 320 pp., hardcover \$26.95, softcover \$16.95, ebook \$8.98, audio book \$17.95

Society was challenged nearly 200 years ago at the dawning of the Industrial Age. It wasn't pretty. Under the guise of protecting the jobs of thousands of workers, the Luddites (followers of Ned Ludd) destroyed labor-saving machinery (looms powered by water wheels) in England. They were eventually suppressed by military action, and society transformed from thousands of laborers performing work by hand to thousands of workers operating machinery that produced more goods faster, and for less expense. The name "Luddite" stuck, and is synonymous for someone opposed to technological advancement. The term remains important as we experience new, earth-shattering changes in production and work. *The Second Machine Age* describes these changes in a variety of ways both encouraging and challenging.

Think about it, most of us carry more computing power in our pockets than was available to get men on the moon in 1969; while computer access is now ubiquitous, very few had access to computers in the 1960s. We also have access to many other features and services that have disrupted industries from print media to entertainment; and our homes have entertainment and work-saving options previously only available to the Vanderbilts or Rockefellers. An amazing wealth of technology has been placed within our reach in the last generation—and at a much faster rate than what was obtained over prior centuries. Life couldn't be better. Right? Well, maybe not.

This "Second Machine Age" is just as disruptive as the first one experienced at the time of the Luddites. Good-paying jobs that our parents or grandparents had are disappearing. The technology that is taught to students in college today will not exist (or will have changed significantly) in 10 years. We've heard these warnings before. We can't stop these changes either; they will happen in part because younger generations will embrace them before they can be stopped.

Do we give up in despair? Will we delegate all responsibility for daily chores to Rosie, the housekeeper robot from *The Jetsons* (a 1960s TV cartoon)? No, the human mind is still supreme in many areas and seems to be adapting well when integrated with "thinking machines." But we can't be complacent or defeatist. You've probably considered ways to implement automation in your own organization, either with a robotic vacuum cleaner/floor washer/

waxer, an inventory delivery system (similar to automatic hospital drug delivery systems), or a robotic lawn mower. Those many routine, "last mile," time-wasting systems are now getting automated faster and more cheaply. I recall 20 years ago we experimented with a robotic floor scrubber; it worked well to clean corridors but was cumbersome for gymnasiums, which limited its use for us at the time.

What might be next? Do you have access to all the parts you need to keep buildings operational? If not, what are the options? What about 3D printing? It can't be long before an extensive campus inventory becomes unnecessary because parts can be printed on demand. The savings accrued by eliminating shrinkage alone have the potential to pay for the equipment needed to print parts. What else is possible? (*Thanks to Dave Handwork and Markus Hogue for some of this out-of-box thinking.*)

We need to keep learning, and keep plowing new fields of technology and applications. Brynjolfsson and McAfee make compelling arguments, suggestions, and challenges for us in *The Second Machine Age*. There are still some tasks at which machines will be unable to replace humans for a while, and many of those performed in facilities fall in the category of human-centric. But many others are perfect for automation and will increase productivity, improve reliability, decrease wasted time, and leverage real human talents for more important jobs. This book may help you think of innovative ways to make use of these developments.

The authors argue that we must continue to stay focused, creative, and driven. The Second Machine Age is upon us. It is challenging us at an ever-increasing rate. We adapted to the First—and we must adapt and leverage the Second to our advantage. 💡

Ted Weidner is an associate professor at Purdue University and consults on facilities management issues primarily for educational organizations. He can be reached at [tjweidne@purdue.edu](mailto:tjweidne@purdue.edu). If you would like to write a book review, please contact Ted directly.







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# new products

Compiled by Gerry Van Treeck

**SPIRAX SARCO** announces the release of the Steam Jet Thermocompressors, the energy-saving device that compresses low-pressure steam, often waste steam, to a higher acceptable pressure that can be utilized by additional applications. This unit is simple in construction and consists of three fundamental components: a motive steam nozzle, suction body, and diffuser. The compact, lightweight design means it's easy to install into a pipeline, enabling overhead installations. A wide range of materials is available to suit process requirements to ensure maximum operating efficiency, including stainless steel, carbon steel, titanium, chrome, and molybdenum. For more information visit Spirax Sarco at [www.spiraxsarco.com/global/us](http://www.spiraxsarco.com/global/us).



presentations and television broadcasts is located at the Global and International Studies Building. For greater design and detailed information on Nanolumens visit [www.nanolumens.com](http://www.nanolumens.com).

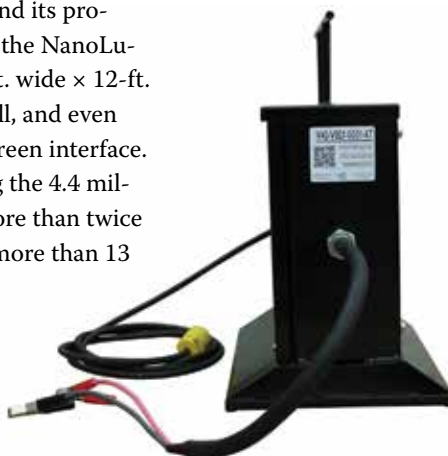
**DUR-A-FLEX, INC.**, a manufacturer of commercial, industrial, and institutional seamless, resinous floor and wall systems, has expanded its Accelera Fast-Track Flooring family with the introduction of Accelera S. A revolutionary product, the Accelera S is a smooth, high-gloss floor system consisting of two coats of a single pigmented material, each coat offering cure times as fast as 2 hours. Accelera S replaces the customary primer, base coat, and topcoat, three-day process of the past and allows contractors to complete a full floor system and prep through topcoat in only a single day. For more information on Dur-A-Flex, Inc. products visit [www.dur-a-flex.com](http://www.dur-a-flex.com).



**NANOLUMENS** products engage students and visitors with news and information, showing that the campus and its programs are technologically advanced. For example, the NanoLumens display at Indiana University, a massive 24-ft. wide × 12-ft. high, is suspended from the ceiling in Franklin Hall, and even functions as six distinct screens through a split-screen interface. The design features a 2.5-mm pixel pitch, meaning the 4.4 million pixels provide a resolution of 2880 × 1536, more than twice the pixel count of a 1080p display. It refreshes its more than 13 million diodes (three per pixel) at 960 frames per second and relies on 240 circuit boards and 1,440 magnets. All this adds up to an incredible media space. And a dazzling array of seven 9-in.-wide × 24-in.-high display "blades" for

**LARSON ELECTRONICS** announces the release of a portable outdoor-rated transformer. Our TX-1000-DC portable power transformer is built to provide operators with a reliable source to step down 120/240-volt AC equipment and operate it on 12 or 24 volts, and is ideal for powering low-voltage lighting and equipment. This compact power-distribution transformer is designed for portability and convenience as well as durability and features an elevated base platform for protection from standing water and weatherproof construction.

The transformer is encased within a weatherproof NEMA-3R rated enclosure and produces minimal interference with wireless radio receivers. The primary input on this unit accepts either 120 or 240 volts AC at 50/60 Hz depending upon configuration, and is connected through a 5-ft. cord with the choice of a general area cord cap. For additional information on Larson Electronics products visit [www.larsonelectronics.com](http://www.larsonelectronics.com).






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sanitizers from binding with the towel, so the cleaning solution in the bucket gets into the towel and releases to the surface in the proper amount. Too little will result in an inadequate reduction of microorganisms; too much can be toxic, corrosive to equipment, and lead to less cleanability over time. For further information on HOSPECO visit [www.hospeco.com](http://www.hospeco.com).

**BRONTO SKYLIFT** introduces their Model S-174 XDT truck-mounted aerial platform. Model S-174 XDT is a telescoping/articulating aerial device that features a 174-ft. working height with a whopping 100 ft. of horizontal outreach, and up to 1,400-lbs. capacity in the spacious 93-in. x 36-in. platform. Mounted on a "go-anywhere chassis," the S-174 XDT allows you to drive to a location and raise the boom to precisely place the working platform almost anywhere on the tower. Setup is a breeze—a single control button activates the outriggers and leveling system, which can be positioned in less than a minute. Identical control panels are located on the platform and at the turntable control station for additional safety. For more information on Bronto Skylift visit [www.brontoskylift.com](http://www.brontoskylift.com). 



New Products listings are provided by the manufacturers and suppliers and selected by the editors for variety and innovation. For more information or to submit a New Products listing, email Gerry Van Treeck at [gvtgvt@earthlink.net](mailto:gvtgvt@earthlink.net).

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# Transforming Facilities to Achieve Student Success

## 2017



## PART 1

### Section 1: *Executive Summary*

The year was 1973. The Carnegie Commission on Higher Education released a comprehensive report summarizing six years of investigating colleges and universities across the United States. Higher education was facing unprecedented challenges, including changing social norms and turmoil over the Vietnam War. One of the most pressing concerns, however, was very familiar to audiences today: money.

Students were flocking to degree programs at unheard-of rates, and institutions were struggling to keep up. The commission predicted a nationwide shortfall of \$26 billion a year by 1980 if enrollment trends continued. What to do?

“Weed ’em out,” the commission said.

“Encouraging higher educational institutions to use their resources more effectively, the commission report proposes that ‘reluctant attenders’ should be encouraged to leave,” reported *The New York Times*. Pushing less-than-enthusiastic students out the door could slash nearly \$10 billion—roughly 20 percent—of annual costs.

Other recommendations of the Carnegie Commission wouldn’t be out of place in a report written today—the commission called for institutions to clarify their purposes, preserve and enhance quality, and achieve more

effective governance. But the charge to show students the door is almost shocking in 2017.

It's not clear how the commission identified "reluctant attenders," but it's not hard to imagine many were students struggling to adapt to higher education. Today, institutions recognize their responsibility is **not to weed out, but to invite in**. What's more, today's colleges and universities are taking seriously the charge to help all students succeed.

### Fostering student success in higher education

In April 2017, representatives of colleges and universities from across the United States and Canada assembled at the APPA Thought Leaders symposium to discuss the topic of student success. Attendees included senior campus leaders and representatives of academic affairs, student affairs, and facilities organizations. They debated broad trends and issues confronting higher education and considered how institutions can help students succeed.

Success is a complex term, and participants at the symposium struggled to define it. Success starts with retention and graduation, but it can expand to include factors from personal career goals to social responsibility. However success is defined, **colleges and universities recognize that they have a responsibility to prepare students to succeed**, and they are investing in programs and projects to help identify at-risk students, improve academic support, and expand student services.

The primary question of the symposium was **how the facilities organization can help further the success of every student**. The APPA members represented at the symposium—all dedicated members of the broader campus community—believe they have a crucial role to play in fostering success. Without safe, clean, functional spaces, education cannot thrive. Participants at the symposium identified the following priorities for the facilities organization:

- Address the basics.
- Create a student-focused built environment.
- Support the academic goals of the institution.

- Strive for inclusivity and fairness.
- Integrate technology.
- Promote sustainability.
- Serve as good stewards of campus resources.
- Engage students in the facilities organization.
- Do no harm.

Thought Leaders participants recognized that, all too often, facilities get in the way of student success when campus buildings fail. The high cost of upkeep of aging structures, many constructed during the boom of the 1960s and 1970s when the Carnegie Commission was active, has left many buildings in disrepair. Outdated heating, ventilation, and air conditioning (HVAC) systems, leaking roofs, and unreliable elevators plague campuses. **Students don't learn well next to buckets positioned to catch dripping rain.**

No institution has the funds to fix every pesky detail of every building, but colleges and universities are finding ways to make strategic investments in their existing buildings through **facilities revitalization and modernization**. This approach uses capital funds to revive, renovate, and reset the clock on campus buildings. It is a forward-thinking process that can encompass a range of tasks including maintenance (i.e., fixing leaks or repairing infrastructure) and programmatic updates (i.e., renovating classrooms to address changing pedagogy). The goal is to thoughtfully target reinvestment in existing assets to extend their life and revitalize their role on campus.

It is important to differentiate revitalization and modernization from the old—and utterly exhausted—term “deferred maintenance.” The concept of deferred maintenance may have been useful once, but at this point it only serves to prompt a rash of finger-pointing. Most facilities leaders have come to dread the phrase, which smacks of failure on their part to maintain their campuses and discounts the hard work they have done to keep colleges and universities running smoothly. It is time to shift the focus away from backlogs of repairs and instead consider the goals of the institution.

This is a key message of this report: that **through strategic investment in their facilities, colleges and**

**universities can support student success, position the campus for the future, and serve as good stewards of campus assets.** Thought Leaders participants agreed on the importance of an approach to campus facilities investments that is student-centered and future-focused. The process must reflect the mission and vision of the campus—the objective is to make the greatest impact possible on the college or university’s goals.

### Achieving success through collaboration

Undertaking a facilities modernization program involves years of effort from facilities leaders and requires the backing of the campus community. Without strong support from departments across the entire campus, modernization efforts will founder.

Gaining support while identifying the needs and goals of campus leaders demands a collaborative process. For help understanding effective collaboration, the Thought Leaders symposium turned to the Arbinger Institute, whose process emphasizes an outward mindset that recognizes the goals and priorities of others. Crafting a collaborative facilities modernization program not only helps the facilities organization achieve its goals, it also helps the entire institution achieve broader goals and move toward student success. Symposium participants outlined strategies for creating a collaborative facilities modernization program and examined ways to make the entire facilities organization more collaborative.

The symposium concluded with participants developing a list of self-assessment questions. APPA encourages facilities organizations in particular, and college and university leaders in general, to consider these questions as they seek to support the success of their students:

1. How does our institution define student success? How can the facilities organization specifically support student success at our college or university?

2. How does facilities revitalization and modernization contribute to student success?
3. How is the facilities organization a barrier to supporting student success?
4. How will investment in modernization support long-term institutional success?
5. Where do we start in making our processes more collaborative? What is our plan for adopting a collaborative approach to facilities revitalization in particular?
6. How do we select and engage stakeholders in a collaborative modernization process?
7. How do we prioritize modernization needs?
8. How do we establish and maintain discipline in the facilities renewal and revitalization process?
9. How do we say “no” without alienating those who have partnered in collaboration?
10. How do we communicate the risk of using capital dollars for work that does not further modernization?

When the Carnegie Commission wrote its report nearly 45 years ago, higher education was very different than it is today. Perhaps it’s not surprising that institutions, overwhelmed by a deluge of students, wanted to turn some of them away. But by 1973, the doors of higher education had been thrown wide open, and it was too late, even then, to slam them shut again.

Today, colleges and universities are not only propping open the doors, they are waving from the front steps. Once students are inside, colleges and universities are finding concrete, creative ways to help students thrive. As caretakers of the structures of higher education, facilities organization leaders will continue to do their part to support students as they reach their goals and proceed to their futures—well-prepared for whatever comes next.



## Section 2:

# Improving Student Success in Higher Education

### Student success and the big picture of higher education in 2017

Student success has become a top priority for colleges and universities. There's an air of urgency around the topic—a sense that institutions have an imperative to better support their students. One way to understand the issue is to place it in the context of two colliding crises in higher education: increased demand for a degree and reduced state support for colleges and universities.

Not so long ago, a degree from a college or university was a rare achievement. Today, **Americans without a degree are hard-pressed to support their families.** Of the 11.6 million jobs created after the Great Recession of 2008, 8.4 million went to those with at least a bachelor's degree, according to the Center on Education and the Workforce at Georgetown University. Another 3 million jobs went to individuals with an associate's degree or some college education. The long-term financial payoff for a degree is enormous: People with a bachelor's degree earn 40 percent more over the course of their lives than those with a high school diploma. It is difficult to overstate the significance of this societal shift. Until the early 1980s, more than 70 percent of Americans entered the workforce right out of high school.

At the same time, **public support of higher education has declined precipitously across the United States.** Most states are contributing less to public colleges and universities than they did before the recession. While state support for higher education increased slightly in 2016<sup>1</sup>, it has yet to recover from a high point in 2008, according to research by the advocacy group Young Invincibles reported in *U.S. News and World Report*. Colleges and universities turned to families to make up the difference, and so tuition has soared, dragging student debt along with it. Average undergraduate debt for the class of 2015 is a staggering \$30,100, according to the Institute of College Access and Success. (This figure

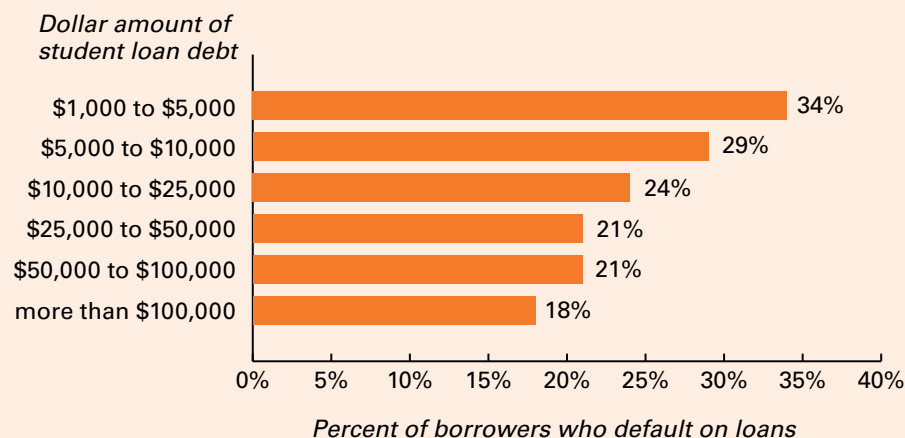
might actually be much higher, since it does not include debt for students who attended for-profit institutions.)

These two crises have focused attention as never before on student success. The need for an education has never been greater, and the cost to the individual student has never been higher. To shortchange students attempting to secure their place in the middle class—and often finding themselves in debt before earning their first paycheck—is irresponsible. Colleges and universities have a **social and ethical imperative** to help their students succeed.

And yet too often, students fail. Around 61 percent of full-time undergraduates enrolled in public colleges and universities graduate with a degree in six years; the rate is 66 percent for students at private nonprofit institutions, according to the National Center for Education Statistics. **That leaves roughly a third of students with some college experience but no degree, and often with significant debt.** The situation is far worse at public community colleges, where only 22 percent of full-time students complete a degree or certificate within four years.

These students have not only failed to accomplish what they set out to do, they also are far more likely to struggle to pay back the debt they acquired in the attempt. While it's shocking to learn about students who have borrowed hundreds of thousands of dollars, those students generally make steady progress paying back their

1 The actual situation is difficult to summarize. According to the 2016 *State Higher Education Finance* report from the State Higher Education Executive Officers, overall support for higher education fell by 1.8 percent per full-time equivalent student in 2016. However, the nationwide average is dragged down by Illinois, where a budget crisis forced appropriations to drop by 80 percent from 2015. Eliminate Illinois from nationwide calculations, and overall support increased by 3.2 percent. Support rose in 33 states and declined in 17.

**Data Point:****Understanding the student loan crisis****Low debt, high default**

On the surface, it would be much harder to pay back \$100,000 than \$5,000—but not without a college degree. In fact, the higher the debt, the more likely it is to be paid back, since those who have borrowed significant sums most likely land well-paying jobs in medicine or law.

Source: Federal Reserve Bank of New York Consumer Credit Panel and Equifax, *The New York Times*. Data represent graduate and undergraduate borrowers who left school in 2009 and defaulted by 2014.

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loans. They likely either graduated from well-regarded institutions or completed graduate degrees, and their income is higher as a result. Only 7 percent of graduate-school borrowers default. Conversely, **borrowers with the smallest debts are the most likely to default.**

In one 2015 study of students from Iowa's 16 community colleges by the Association of Community College Trustees, the default rate for students who had borrowed less than \$5,000 was nearly 32 percent. (Nationally, the rate is slightly higher, at 34 percent.)

Why is it so difficult for low-borrowing students to keep up with payments? Because they likely never completed a degree. Almost 90 percent of Iowa community college defaulters left college with no degree or certificate, and 60 percent had fewer than 15 credits. Less than a semester's worth of credit is unlikely to increase a student's income at all, and that \$5,000 debt could haunt them for decades.

There is a growing sense that **institutions must help their students avoid the pitfalls of the current higher**

**education environment.** Campus leaders are compelled to aid students in reaching their potential—to graduate on time, with as little debt as possible, and with the qualifications that will enable them to repay that debt and secure a future.

Moreover, **society as a whole is pressuring institutions to better serve their students.** Accreditation is beginning to be tied to student success (although the accreditation agencies generally have not defined success or explained how success will be measured). What's more, many states have linked some percentage of funding to metrics such as retention, graduation, and job placement. There is clear logic in rewarding effective institutions with higher funding, but such programs have often failed to achieve their goals, according to a study by the Century Foundation. "Research shows that tying financial incentives to performance measures rarely results in large or positive outcomes that are sustained over time." In this study, states that use performance-based funding do not outperform other states; any differences between them are statistically insignificant.

Why is this the case? Paying for performance is highly successful in many other economic situations, but, as the report points out, those are generally fairly straightforward transactions. **The reasons any student thrives or fails are complex and multifaceted and involve numerous factors outside the institution's control.** There is no single, clear path institutions can take to improve results. Certainly, institutions can—and have—identified many of the factors that contribute to success, and they are working to improve those factors.

Ineffective academic advising is a good example—poor advising can delay time to graduation by failing to help students keep their focus on their end goal. Many campuses are seeking to improve advising and are seeing real results, according to the Association for the Study of Higher Education report, *Piecing Together the Student Success Puzzle: Research, Propositions, and Recommendations*.

Another major challenge in tying student success to state funding comes down to definitions. What do we mean by “success”? How do we measure it?

### Data Point:

#### Defining student success

##### San Jose State University

San Jose State University (SJSU) works actively and collaboratively to help students identify and strive toward their maximum potential, whether it leads to an SJSU degree or not. San Jose State University's student success framework provides a rich and diverse learning environment to engage students not only in mastering core subject areas but also in developing and refining their competencies in creativity, critical thinking, problem solving, quantitative literacy, information literacy, communication, and collaboration. The ultimate goal of our student success efforts is to produce citizens who possess intellectual, social, and life skills that are adaptable, culturally respectful, transformative, productive, and responsible.

### The challenge of defining success

So far, we've discussed “student success” without defining it. Sometimes, success is presented as shorthand for graduation; at other times, it is presumed to encompass much more. But operating without a definition is a problem. The old adage “You can't manage what you can't measure” comes to mind—because you can't measure what you can't define. **Individual institutions need to decide what they mean by success** so they can determine if they're making progress toward improving it.

During the 2017 APPA Thought Leaders symposium, participants were asked to give their own definitions of success. Some definitions were straightforward and, therefore, would be relatively easy to measure:

- Maximum throughput in shortest time with highest graduation rate.
- Graduate on time. Increase income over lifetime of employment, over alternative of not attending college. Improve standard of living.

Others wanted to emphasize the personal nature of success:

- Student graduates “on time” based on their individual goal. Student acquires the knowledge, experience, and growth that he/she desired.

Many wanted success to include a societal component, with the assumption that higher education has a broader purpose than training students for careers:

- Student success is preparing an individual to be a productive member of society by educating them so that they can get a job, continuously educate themselves to understand current events, and value other perspectives.

And some framed success in the broadest terms:

- Student success is graduating with a degree and the life skills to be an enlightened contributor to society. It's making considered decisions and taking productive steps in life's journey. It's looking back at your educational experience with no regrets.



- Student success is full, rewarding emotional, personal, intellectual, societal, and academic development leading to timely matriculation and an academic degree coupled with key tools to acquiring future success/fulfillment.

The two statements above are highly ambitious and inspiring in their vision for higher education—and difficult to prove with a data set.

Thought Leader participants aren't the first and won't be the last to struggle with a definition of student success. Campuses across the country have held long, difficult meetings to hammer out definitions for their institutions; in fact, we're presenting many of those definitions as examples throughout this report.

Education experts have also penned reports considering the topic of student success; a few points merit attention.

First, while definitions of student success general include graduation, the **definition of success will vary widely** by institution. Attempts to hold all institutions, even all public institutions within a single state, to the same success standards will be difficult to achieve, since a state flagship campus operates in a very different environment than a small institution in a rural region.

Second, the goal of success sometimes comes into conflict with another major goal of many institutions: access. **The more open the admission standards of a college or university, the lower its retention rate**, according to the National Center for Education Statistics. (Retention is defined as the percentage of students who return to the same institution for a second year.) Community colleges and many public institutions were created with the goal of making higher education available to as many students as possible. Unfortunately, those who are least prepared for higher education are also those most likely to fail to complete a degree. Institutions with open admission see a retention rate of only 51 percent; more selective colleges and universities have a 76 percent retention rate.

Finally, most higher education leaders believe that **the quality of education matters, not simply the quantity**. It would be easier if success were defined only by retention and graduation rates. It would also be tempting, in that case, to reduce coursework demands, simplify degree programs, run everyone through with an A or B, and graduate students in four years whether they had learned anything or not. The leaders of our colleges and universities are serious people who believe in the responsibility of higher education, and most reject a narrow view that makes a degree and a job the sole measures of success. Therefore, a definition of success shouldn't be dismissed because it includes difficult-to-measure elements. Otherwise, ill-considered reward systems could end up elevating degree mills over thoughtful institutions.

Keeping all these points in mind, is it possible to develop a unified theory of student success?

### Data Point:

#### Defining student success

##### University of Iowa

The definition of student success varies between individual students. However, in general, it includes several components, each of which contributes to a student's personal measure of their success. We take a holistic, or broad, approach to defining and supporting student success. Student success can be:

- Reaching academic goals.
- Social, personal, and emotional development.
- Appreciating diverse perspectives and developing a clearer sense of personal identity.
- Displaying resiliency and engaging in help-seeking behaviors.
- Developing a sense of belonging and ownership
- Financial literacy and stability.

Most institutions would generally agree that success encompasses some of the following elements:

- **Retention or persistence**—Entering students remain, re-enroll, and continue their education.
- **Graduation or attainment**—Students reach their education goals, whether a certificate or a degree. They move through their program in a timely manner.
- **Advancement**—Students succeed at subsequent endeavors (whatever those might be) and progress toward the next step in their degree plans or work in their desired field.

- **Achievement**—Students achieve satisfactory levels of academic performance.
- **Personal development**—Students grow as individuals, advancing intellectually, socially, and ethically.
- **Social engagement and civic responsibility**—Students are equipped to become good citizens of their community, their country, and the world.

It's not a perfect list, and not everyone will agree with every element, but it captures the broad outlines of meanings proposed by participants at the Thought Leaders symposium. It will serve as a working definition of "student success" for the purpose of this report.

## Data Point:

### Student success

#### *Four trends that drive success identified by the Bill & Melinda Gates Foundation*

Colleges and universities across the country are under enormous pressure to transform themselves to meet the needs of today's students. Is this transformation possible, and if so, what does it look like in successful institutions?

- **Laser-like focus on students.** Everyone—faculty, administrators, and advisors—knows their students. They study them, they understand their needs and aspirations, and they build educational, coaching, mentoring, and counseling services tailored to their students' needs.
- **Professional development for faculty and advisors.** Driven by the integration of technology, institutions support and encourage routine engagement of their faculty and advisors with learning science and with best practices in instruction, coaching, and mentoring.
- **Data analysis.** Institutions evolve their practices, gathering data about students, finding out where they are struggling in their courses, why and at

what points they are slipping behind or dropping out, and experimenting with innovations that target those friction points. The continuing quest after improvement is scientific and intensely data-driven.

- **Courageous leadership.** Evolving traditional academic practices so they meet the needs of today's students is a complex and challenging process. It requires a willingness to explore new cost and revenue models and a commitment to supporting the professional development and training of dedicated experts working in fields undergoing fundamental transformation. What's more, it calls for a combination of patience (because fundamental change takes time) and urgency (because today's students cannot wait for us to address their needs tomorrow).

*Source:* Adapted from Daniel Greenstein, director of education for postsecondary success, Bill & Melinda Gates Foundation, "4 Trends that Drive Success in Higher Education," World Economic Forum, December 2, 2014.

## Case Study in Facilities Modernization: Wellesley College

Wellesley College was founded in 1870 by a group of educators passionate about higher education for women. While investment had been made over the decades to the historic campus, by 2010, college leaders recognized the need to address both maintenance and programmatic needs. “There was a realization that the campus did not meet the needs of today,” says Dave Chakraborty, chief facilities officer and assistant vice president for facilities management and planning. “So the campus kicked off a three-year process to develop a plan for improvements.”

The planning process was highly collaborative, reflecting the character of the institution. “A vast cross-section of faculty and staff were involved,” says Chakraborty. Initially, the college outlined a highly ambitious program of improvements—a program that actually turned out to be too ambitious. Running the numbers revealed it would cost more than \$1 billion. Leaders went back to the drawing board and crafted a more feasible \$575 million plan.

The end result was *Wellesley 2025: A Plan for Campus Renewal*. This plan charts a multiyear approach to campus modernization and incorporates academic, residential, athletic, and dining plans. Goals identified by the campus community include:

- Enabling academic initiatives and improvements to student life and providing opportunities for collaboration and community-building.
- Meeting current and anticipated program needs, with enough flexibility to accommodate evolution of programs and pedagogies.
- Facilitating stewardship of Wellesley’s rich heritage of buildings and landscape and—in particular—securing the longevity of its existing buildings.
- Building on and enhancing sustainability initiatives throughout the campus.
- Improving accessibility throughout campus.

- Considering the campus as an embodiment of a forward-thinking college with a rich history and meaningful traditions, emphasizing both preservation and innovation.

Several projects have reached completion. For example, Pendleton West, which houses fine arts programs, hadn’t been updated since it was constructed in 1936. The interior of the building was completely demolished and features a new layout, updated heating and cooling systems, and improved ventilation for hazardous art materials. Classroom spaces were designed with the flexibility to adapt to future needs.

Other projects are ongoing—a new science building is in the design stage, and residential life improvements will be addressed in the next five to seven years. The college has also recognized outstanding needs that will not be met by the 2025 plan and are discussing options for infrastructure and building improvements that will need to be tackled once this plan (which will probably extend beyond its original deadline to 2030) is complete.

The Wellesley 2025 plan has been embraced by the college community. None of the faculty or staff feels like “losers” in the modernization program, or resent that others are “winners.” Chakraborty credits the provost and other senior leaders of the college for “ensuring that everyone was heard—and seriously heard.” Leaders took seriously the input of the community. “Nothing was done in a back room,” he says. “Certainly this approach takes much longer, but in the end the right decisions were made.”

Kim Bottomly, president of Wellesley College from 2007-2016, said of the modernization at Wellesley, “Each generation at Wellesley has the great responsibility of stewarding our lovely campus buildings. We have inherited these buildings from those who came before us, and we must take care of our spaces, anticipating future needs, so that they serve Wellesley well into the future.”



## Section 3:

# *The Role of Facilities in Fostering Student Success*

If the goal is student success, how are institutions to realize it? What is the role of facilities in student success?

The facilities organization is rarely part of the discussion of student success. However, **a student's experience on campus can be significantly enhanced, or diminished, by the facilities themselves.** How well a space is designed, operated, and maintained shapes the user's experience in that environment.

Participants at the Thought Leaders symposium believed that facilities have a critical role in student success. Understanding that role can help senior facilities officers target their efforts to improve student outcomes.

### Data Point:

#### Defining student success

##### California State University

At the California State University (CSU), we work every day to help ensure one thing for our more than 474,000 students: **the timely completion of a rigorous, quality degree in preparation for a lifetime of achievement.**

- Student success means improving graduation rates and ensuring more students get a degree sooner.
- Student success means reducing the number of students who drop out of college before graduating.
- Student success means making college more affordable to more Californians.
- Student success means helping more prospective students understand what it takes to earn their degree.

### How the facilities organization supports students

**Address the basics.** Fundamentally, the facilities organization is charged with ensuring that campus spaces are safe, accessible, clean, and functional.

**Create a student-focused built environment.** The campus can be an imposing and confusing space, especially for students who may have never set foot in a college or university before. The campus needs to be examined with the eyes of a total outsider and made easy to navigate for every student.

**Support the academic goals of the institution.** Pedagogy changes faster than architecture. The facilities organization needs to understand where the institution is headed in terms of teaching and learning styles and work with their academic counterparts to create appropriate learning environments.

**Strive for inclusivity and fairness.** Achieving Americans with Disabilities Act (ADA) standards is part of the baseline for facilities, but beyond that, the campus should be designed and operated so that all students can participate fully in the life of the institution.

**Integrate technology.** A close partnership with IT will help the facilities organization make spaces as usable as possible.

**Promote sustainability.** Facilities should continue to make strides in greening campus operations and reducing the carbon footprint of the college or university.

**Serve as good stewards of campus resources.** The facilities organization controls a major portion of the campus budget and can demonstrate responsible use of resources to a wide audience.

**Engage students in the facilities organization.** More and more facilities organizations are reaching out directly to students. Sometimes the goal is improved communications—facilities staff use Facebook and Twitter to keep students up to date on facilities projects. Other departments hire students as interns. Senior facilities officers teach courses in engineering, architecture, or environmental programs. Some schools have found ways to make their campuses into living labs where students can understand the real-world effect of decisions about space management, utilities use, and other critical facilities factors. Working with other departments gives the facilities organization allies across the campus.

#### Data Point:

#### Supporting success through facilities

##### *Designing classrooms for modern pedagogy*

Ninety-nine percent of teaching spaces were anticipated either in an image of an ancient Syrian palace school 4,000 years ago or in the Greek amphitheater: rows or rings of seats meant to focus the attention of the many on the one. But education is not about transferring information from one to many; it is about learning within the student. When printed books were new, transferring information was vital, but today, information is ubiquitous and readily available, and students can pick it up when and where they want. Instead, the classroom ought to focus on assimilation and application of knowledge to new contexts. The teacher becomes the guide on the side, instead of the sage on the stage, requiring wholly new learning spaces and teaching techniques.

*Source:* Eric Mazur, Balkanski professor of physics and applied physics, Harvard University, quoted in Lawson Reed Wilson, Jr., *Classroom Design*, Prepared for the Special Committee on Classroom Design, Princeton University, Summer 2013.

**Do no harm.** Facilities projects can be disruptive to a busy campus, but the organization can take steps to minimize that disruption. The goal should be to stay out of the way as much as possible and to be conscious of the experience of students and faculty.

#### The view from different disciplines

The 2017 Thought Leaders symposium sought the input of leaders from different corners of the campus as participants considered the role of facilities in student success. Alongside senior facilities officers, representatives from academics and student services were on hand to contribute. The distinct groups had different insights on how facilities can best contribute to student success.

**Academic representatives** emphasized the student experience. They urged facilities leaders to try to see spaces from the perspective of students who might be new to college and university life. “**Facilities need to meet students where they are,**” one academic expert noted. “Navigating campus can be really difficult, but students don’t want to ask questions. How can we help those students find their way?”

They also encouraged facilities to **give students agency**. “Let them shape the space,” one person said. Academic representatives discussed spaces in which students can move the tables and chairs and write all over whiteboard-covered walls. At the same time, facilities should set expectations and encourage students to take responsibility for their spaces.

Finally, academic representatives encouraged senior facilities staff to **make a place for themselves on campus as experts**. “You’re our resident expert—a real resource,” observed one academic expert. “Facilities staff can be invisible, just taking care of things behind the scenes. But you know things we don’t. We need to hear what you have to say.”

**Data Point:****Defining student success****South Dakota State University**

Student success is defined as supporting student achievement to develop graduates who have a high level of self-confidence, are professionally competent, and are prepared to assume leadership roles in their communities as well as their chosen discipline.

The facilities organization has **insights that the rest of the campus needs**, said student affairs leaders. “You understand how spaces work—or don’t work. There’s a sort of anthropology of how people use campus spaces that facilities understands.” This is particularly significant in designing new spaces. Often, campus leaders know the outcome they want for a space, but only facilities leaders know how to achieve that outcome.

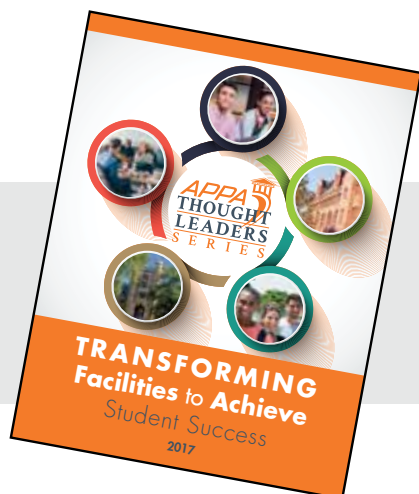
**Student affairs representatives** encouraged facilities staff to think in terms of **breaking down barriers and promoting a safe environment**. “That means all kinds of barriers—both physical barriers that might be limiting access to someone with a disability and more subtle barriers limiting collaboration,” one student affairs expert

noted. “Our physical space needs to reflect our values of open interaction.”

Facilities play an **essential role in campus safety and security**, the group emphasized. Elements such as lighting, open sightlines, and monitoring systems can enhance the security of students, faculty, and staff. “We need to get facilities staff more involved in the passive measures that keep students safe, like clear lighting for walkways,” observed one student services representative.

Finally, student affairs experts noted that **facilities staff sometimes play an unexpectedly large role in students’ lives**. “Sometimes, the custodian in a residence hall is the first person to notice that a student hasn’t been out of their room in days—that there’s some kind of a mental health problem,” said one symposium participant. “We need to make sure that these people, who are on the ground interacting with students, have a way to report their concerns.”

Ultimately, the message from academic and student affairs dovetailed with what facilities experts themselves believe: Facilities support student success every day. Investments in the physical campus return rewards in successful students.



Look for Part 2 of this series in the November/December 2017 issue of *Facilities Manager*. Download the full report at [www.appa.org/bookstore](http://www.appa.org/bookstore).



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