Reflections of Mathematician Administrators in the Year of the Plague

Curtis Bennett, Robin Forman, Phil Hanlon, Herbert A. Medina, Sastry G. Pantula, Wayne Raskind, and Rachel Vincent-Finley

In the first half of 2021, the Notices asked a collection of mathematicians who had risen to administrative ranks to reflect on how they and their universities had navigated the financial, educational, logistical, and social difficulties in an unprecedented year. Their contributions here cover the range from private to public universities, from small to large, and conclude with reflections on the sustainability of the pre-pandemic business model for universities. Herbert Medina of the University of Portland writes about making difficult and unpopular decisions with limited data; Robin Forman of Tulane University tells a story of success beyond expectations; Phil Hanlon of Dartmouth College reminds us of the importance of mathematical and statistical knowledge in guiding policy; Curtis Bennett of California State University, Long Beach reflects on the challenges of leadership in social isolation; Rachel Vincent-Finley of Southern University and A&M College describes the experiences of a historically Black land-grant university; and Sastry Pantula of California State University, San Bernardino focuses on the crushing burden on department chairs. In a final piece Wayne Raskind, formerly Dean of the College of Liberal Arts and Sciences at Wayne State University, and currently Director of the Institute for Defense Analyses, Center for Communications Research, Princeton, ponders university business models, reaching the sober conclusion that they are not sustainable. A common thread in all of the

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contributions is the sense that the pandemic has exposed weaknesses in the way colleges and universities do business and brought about an openness to change and new thinking that decades of national reports have failed to do; concluding that after the tragedy of the pandemic there is room for learning and opportunity.

Reflections on 2020–21

Herbert A. Medina

What a couple of years!

It was the Thursday after spring break in March 2020 when the University of Portland (UP) made the decision to switch to online instruction for what we thought would be a couple of weeks. Our university had mostly avoided online instruction as we pride ourselves on engaging our students fully in their personal educational journey; so our faculty were very challenged in making a transition to online instruction in a week's time.

I was Dean of the College of Arts & Sciences when we made that decision, and I distinctly remember being on the phone with a mom who was at the San Jose Airport on her way to visit her daughter, who was in a theater production that was supposed to be performed that night. She asked why the show couldn't go on. There had only been a few

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dozen COVID cases in Oregon at that time, so her request was not unreasonable. Nevertheless, I had made the call to cancel the production. It was the first of so many difficult to make, easy to question, unpopular decisions that I participated in during the pandemic.

On July 1, 2020, I found myself assuming the role of Provost. I had applied for the position the previous fall, interviewed via Zoom in May (the interview was delayed by a couple of months in the hope that it could take place in person), and was selected for the position, which I enthusiastically accepted. "I am so sorry that you've become provost during a pandemic," was a comment I heard often. My response was (and continues to be) that I followed a career in higher education in order to serve, and if there ever was a time to serve, that time was now.

My time as provost has been filled with pivots and decisions affecting our entire university community. It is hard to say which group has found the consequences of my actions and decisions more challenging: faculty, staff, or students. Two examples are the decision to hold instruction fully online in fall 2020 and the decision to close our dormitories for the semester. The former resulted in almost 200 cancellations or deferrals from students who had already committed to being part of the first-year class in 2020, which resulted in a first-year class that was 19% smaller than it had been each of the previous three years. The latter meant forgoing room and board revenue. Both led to significantly lower revenue resulting in unpopular fiscal measures, including temporary salary reductions and suspension of university contributions to retirement benefits, staff furloughs, reduction in the number of adjunct faculty, significant reductions in university spending, and a dip in morale that was hard to combat since the university community was largely hunkered down at home. The first day of fall semester 2020 was probably the hardest emotionally. I had been going into the office in a largely empty campus on a regular basis in summer. Somehow, foolishly, I thought that the start of the semester would bring the campus back to life. It was so sad to stare out my office window and continue to see our beautiful, but empty campus.

Since those darkest days, we've been able to bring back around eight-hundred students to the dormitories in single-occupancy rooms and are offering about fifty in-person courses this spring 2021 semester (including an elementary statistics class that I am teaching). Robust safety protocols and a surveillance testing program have resulted in our campus being mostly COVID-free the entire semester. (Indeed, UP's COVID dashboard currently shows more than fourteen thousand tests administered with a 0.3% semester positivity rate.) An improved financial picture for this fiscal year allowed us to bring back full salaries in January and discontinue most staff furloughs. Most recently, the university was able to reinstate its retirement contributions

retroactive to when they were suspended. All of these steps towards normality have been significant successes.

What does next fall have in store for us? We are planning to return to mostly in-person instruction this fall. We will keep about a fifth of our courses online so as to relieve classroom pressures, allow some faculty who, for various reasons, want or need to continue to teach remotely, and also to accommodate working graduate students. This plan is not without a significant amount of uncertainty. We have yet to get guidance from state or federal authorities on basic matters such as indoor/outdoor physical distancing parameters, face covering policy, classroom capacity, dormitory occupancy, etc. In fact, the lack of guidance from state, federal, and professional organizations on COVID safety policies for higher education has been and continues to be one of the significant challenges (perhaps "frustrations" is a better term) of the pandemic. The financial picture for next year continues to be lean since the small first-year class entering in 2020 will be at the university for three more years. Thus, the university has instituted some budget tightening going forward including reductions in faculty and staff lines achieved almost exclusively through retirements and currently unfilled positions. So, the financial hardships brought about by the pandemic will not go away as quickly as the health effects of the virus itself.

As I glance back over the past few months, what are some impressions and lessons learned?

Learning to pivot quickly and without having full (sometimes very little) knowledge of the important variables now seems routine. The decisions made are almost all in a gray area and, whether we like it or not, often they will be viewed through a political lens. For example, as we start May, The Chronicle of Higher Education has a running list of colleges and universities that have decided to require vaccines of students or employees in the fall. Each entry in the list is colored blue or red depending on which way the school's state voted in the last election; the list is almost all blue. University of Portland's decision to hold virtual commencement ceremonies in 2020 and 2021 have been met with dissenting editorials in the school newspaper and emails and phone calls to the president and provost expressing both disdain and support for the decision. Similarly with the decision to deliver instruction mostly virtually for the 2020-21 academic year. Almost all faculty supported that decision, and they also were cognizant that the loss of revenue from a smaller first-year class and from keeping dormitories empty or with limited capacity would result in staff furloughs, as well as reductions in salaries and benefits.

The necessity to make difficult decisions sometimes within a very short time window and without the full

¹https://www.chronicle.com/blogs/live-coronavirus-updates/heres-a-list-of-colleges-that-will-require-students-to-be-vaccinated-against-covid-19.

(usually very deliberate) process of shared governance has also been a challenge. For example, our decision to remain with remote instruction in fall 2020 had to be made in late July with almost all faculty off campus and certainly without the possibility of convening the Academic Senate for a full discussion on the matter.

I am starting my 30th year as faculty/administrator in higher education this fall. The past year+ has been like no other and more difficult than any other. Every month brought new challenges that required "we've never handled this before but let's try..." approaches. It was certainly very different than the fully-defined, structured playground of real analysis in which I was trained. And I am eagerly looking forward to a more defined set of axioms, spaces, and variables in the next academic year.



Herbert A. Medina

Credits

Photo of Herbert A. Medina is courtesy of the University of Portland.

What If It Had Been COVID-09?

Robin Forman

In June 2020, we committed to opening our campus for the fall semester and inviting all students back to participate in a primarily in-person education. We also introduced a slate of fully online courses for students who wanted to study remotely or who could not travel to the US. As we started the fall, about 75% of our classroom offerings had a significant in-person component—some of these were also open to remote learners—with the remainder fully online. The response from our students and their parents was very positive. There was certainly tremendous uncertainty and anxiety about what it meant to offer an in-person education during a pandemic, as well as pushback from some students, staff, and faculty who advocated for another path forward, such as a de-densified campus or a more fully online semester. But when classes began, 95% of our domestic students had chosen to come to campus. In addition, our undergraduate college opened a program in Shanghai that combined on-the-ground and online courses for a cohort of

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about 180 students who could not join us in New Orleans. While a total of around 350 of our students—domestic and international—were studying remotely, about 750 students who had planned to study abroad in the fall had to change their plans and stay at Tulane. The result was that in the fall we had the largest number of students in residence in Tulane's history.

To carry out this education in a manner that was as safe as possible for our community was a heavy lift and required hundreds of faculty and staff working seven days a week starting with that June announcement. We created a welcome center at a downtown hotel, with the idea that on-campus students would stop there upon arriving in New Orleans, would be tested for COVID at the hotel, and would have to receive a negative test before heading to campus. We implemented surveillance COVID-testing for all faculty, staff, and students-starting at once a week for the undergraduates and increasing to three times a week as we improved the testing process, and our capacity grew. We turned one dorm into an infirmary to isolate COVID-positive students and rented a downtown hotel to quarantine students who had been identified as close contacts of COVID-positive students. We outfitted all classrooms with high quality AV equipment and all classes were zoom-accessible for those students who were required to isolate or quarantine. We experienced three surges of varying degree during the semester. But in each case, with aggressive testing/contact tracing/quarantining, we were able to quickly bring the numbers back to a low, manageable level. One advantage we had was a strong relationship with public officials at the city and state level who have been forceful in combatting COVID, with a consistent message and willingness to make unpopular decisions to keep the community safe while prioritizing the reopening of schools. In particular, the infection numbers in the city were at a low point at the time when our students returned, and continued to decline for weeks afterwards, reassuring those who were concerned that we would be importing the infection to the city or vice versa.

There were significant expenses associated with all of this. As a result of an enhanced focus on fiscal discipline, five years ago we transitioned from years of deficits following the devastation of Hurricane Katrina, to years of modest and growing operating surpluses. With a continued commitment to keep non-essential costs down, we were able to invest significant funds in furthering the academic mission. As a result, we were in a strong financial position when called upon to respond to the pandemic, able to invest tens of millions of dollars in keeping our community safe without compromising our ambition for our research and teaching missions. If COVID-19 had been COVID-09 instead and had arrived ten years earlier, I am not sure how well we would have fared. In response to the extraordinary financial challenges and uncertainties of the

past year, we froze salaries and paused non-essential hires. But we continued to hire faculty central to our teaching and research missions and backfill essential staff positions when vacancies occurred. Fortunately, we did not have to implement any of the more extreme measures seen on many campuses, such as salary cuts, layoffs, furloughs, or a temporary reduction of benefits.

To offer our classes in a safe, socially distanced manner, we had to schedule our classes in rooms that were at least four times the usual size, and that meant that we needed more very large classroom spaces. In response, we rented 13 large temporary classrooms and installed them on our campus and "borrowed" several other large spaces, including our basketball arena, chapel, museum, event ballroom, and performing arts theater, converting them temporarily to classrooms outfitted with appropriate AV equipment. When the semester started, it became clear that some of these spaces needed more work to be fully useable as classrooms, and so the improvements to these spaces continued through the fall. As the semester progressed, it became increasingly clear that we were not seeing any evidence of any COVID-19 transmission occurring in our classrooms, and faculty and students began to be much more comfortable in these spaces.

Building on our historic commitment to the study of infectious diseases (we were founded in 1834 to help protect the region from tropical diseases) we invested in helping many of our medical researchers transition their research to COVID-related work and offered them support in applying for funding for this new work. We are currently attracting federal funding, as well as other sources of research support, at a rate far outpacing that of previous years. I am immensely proud of the ways that our faculty have contributed to our understanding of and our fight against COVID-19. Our work includes that of Mac Hyman, a Tulane mathematician who participated in several AMS events on mathematical models and the pandemic.

All of that said, it is impossible to talk about the fall 2020 semester and our remarkable accomplishments without also referencing the historic levels of stress. In addition to COVID-19, we spent about 30 days, cumulatively, under the threat of approaching hurricanes. The first six hurricanes veered away from us before landfall. Such close calls still require significant preparation and take an enormous emotional toll. And then the 7th, Hurricane Zeta, was a direct hit. We also experienced the unprecedented turmoil of the presidential election season, and the growing urgency of our anti-racism work. We had cancelled all of the breaks in the academic calendar in order to limit travel and shorten the semester, and the students and faculty struggled at times with the unrelenting pace of the semester. We heard from students and faculty who felt stretched to the limit, and others who were struggling to make the sort of social

connections they craved. (We added days off back into the academic calendar for spring 2021.)

We administered a campus-wide survey in November and most faculty, staff, and students expressed strong support for the path we were following and great appreciation for the many hundreds of faculty and staff who made it possible. But the most consistent message was the great appreciation that our faculty and students had for each other and their mutual commitment to creating a challenging, engaging, rewarding education, even in the most trying of circumstances. This did not happen without an enormous amount of work from our faculty. They had to devote more time to their teaching than ever before, and a great majority did so with energy and creativity. In fact, the student course evaluations from the fall were a bit higher than in previous non-pandemic semesters! We added a year to the tenure clock of all our tenure-track faculty who are in their probationary period (faculty may opt out if they wish) in recognition of the extraordinary stress, challenges, and demands on their time.

Taking advantage of lessons learned, as of writing this in February 2021, our spring semester is off to a good start. And the students seem to agree. Our fall-to-spring retention is higher this year than in any recent year, and almost half of the students who studied remotely in the fall have chosen to come to campus for the spring. With study abroad still impossible, we have even more students in residence in the spring than in the fall.

We have already begun planning for the fall 2021 semester and exploring what a post-COVID era might look like—whether that arrives in time for the fall or at some later point. What new practices have we learned that we would like to preserve? How will our experiences influence the way we do the office work that supports the university operations, and how can we use our newfound comfort with technology to enhance the traditional liberal education? What have we learned about student engagement and well-being that can inform future practices? And even after we get COVID-19 under control, it will likely not be the end of the virus, nor will it be the last pandemic. So how do we continue to grow our research in response to all that we have learned over this past year and play our part in keeping the world safe from another year like this one?



Robin Forman

Credits

Photo of Robin Forman is courtesy of Tulane University.

Mathematics and Leadership

Phil Hanlon

Throughout my administrative career in academia—both while I was provost at Michigan and even more so as president of Dartmouth—the skills and knowledge that have been required of me to lead those institutions seem far afield from anything I was taught while earning my PhD in mathematics. Yet the onset of the COVID-19 pandemic has, for me, brought into sharp relief the ways in which mathematical training is so important to leadership. Without numeracy and agility with statistics, strong logic and critical thinking skills, and the ability to separate correlation from causation, leading a college or university through this pandemic would not only be nearly impossible, it would likely be catastrophic.

What makes leading in this particular moment so difficult is that we're managing through a set of compounding challenges for which there is no playbook. And this came at us with unprecedented speed. Over a 72-hour period last March, everything about the way we carry out our mission changed dramatically. On top of that, none of us who are alive today have experienced anything of this magnitude. As we grapple with how to keep the members of our communities healthy, we're also faced with how to continue delivering on our mission in the midst of all the disruption, while still maintaining our institutional financial footing. Any one of these challenges would be difficult to overcome on its own, but addressing all three simultaneously is a monumental task.

This is especially true given the significant tradeoffs that exist between each of these important components. For example, the more you lower density in dorms to protect human health, the higher price you pay financially with lower room and board revenues.

At Dartmouth, we've chosen to prioritize the health and safety of our community, employing rigorous enforcement of masking, distancing, testing, and contact tracing. And I'm happy to report that so far, it's worked! From the beginning of July through the first of this year, we had only 92 confirmed cases on our campus out of more than 75,000 tests. That level of success on the health front has allowed us to operate with nearly half of our undergraduates and all of our graduate students back on campus since shortly after the onset of the pandemic last spring. However, despite the favorable case numbers, we've still received passionate pushback on our actions from students and parents alike, who contend that the restrictions we've imposed to achieve them have compromised too much on an essential

element of the overall college experience: student social life. Whether one agrees with that contention or not, we are constantly re-evaluating our actions based on current data and projections to understand the ramifications of adjusting various levers while trying to strike just the right balance between them.

Even as I look to the post-pandemic future of my own institution and of higher education more generally, balance comes into play. As much as COVID-19 has reminded us of the value of in-person teaching and research, it has also taught us volumes about the limitations and possibilities of online instruction and remote work. That's nothing to shake a stick at.

In fact, one of the most influential consequences of the pandemic as it relates to higher ed is that it has nearly obliterated the stigma associated with online teaching and removed the reluctance among those of us in academia to use it as part of our educational toolkits. I can attest to both of these points myself having taught an online course in the fall of 2020 on Representations of Symmetric Groups.

As a result, every institution should be asking itself these fundamental questions: Can we broaden our reach and impact through remote educational offerings? And with more flexible work from home arrangements, can we lessen our built infrastructure and thereby lower our operational and facilities maintenance costs?

Without a doubt, COVID-19 will lead to fundamental changes across all of higher education as it has forced us, for some period of time, to blur the lines between residential, commuter, and online institutions. Thankfully, living and leading through it has prepared us well to strike the right balance, whatever comes next.



Phil Hanlon

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A Dean's Experience (the Sequel)

Curtis Bennett

In early June of 2020, I wrote a brief vignette which appeared in the 2020 August/September issue of *Focus* on what it was like to be a dean during the first three months of the COVID crisis. Things have settled down a lot since then. At the start of the crisis, it felt as though we were constantly reeling under the onslaught of a new problem. While the pandemic continues to create unprecedented issues, typically they are more spread out and we are better prepared to find solutions. For example, the December–January COVID spike in California required last minute changes for our spring 2021 semester, but the upheaval was minor compared to last year. Moreover, with people getting vaccinated, the end is in sight.

We continue to have worries, many borne of the pandemic. Student and faculty mental health is at an all-time low. When crises arise, they take significantly more time to address than they did pre-pandemic. And in the unfortunate case when there are multiple fires at the same time, I still find myself working late nights on little sleep. What I find most difficult, however, is the lack of informal personal contact. I believe in management-by-walking-around, but walking around my living room just doesn't cut it. While I've instituted more formal contacts with faculty and staff, they can't replace the informal spur-of-the-moment contacts that are so useful for generating ideas and preventing crises. I'm sure that for some deans this is less of a problem, but for me it has made the job much harder.

The crisis has its pewter lining though. Faculty members have come together to help each other and their students in new ways. My leadership team, safety staff, and technicians all showed their value in solving problem after problem. The money the university spent for professional development last summer created the most successful faculty learning communities I have ever seen, and faculty were excited to join them. Faculty found themselves wanting to learn new teaching techniques and technologies, while the CARES act provided money to cover the costs. We even found ways to cut through some of the red tape that can make it difficult to manage change.

Personally, I am trying to focus on our successes, both little and big. In the fall of 2019, I committed to teaching a problem-solving course in the fall of 2020. Having taught problem solving many times, I reasoned it would be a relatively easy course to teach while being dean, but of

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course, I wasn't ready for it to be online. After the pandemic started, I decided I would still teach the course. I reasoned it would give me a tiny taste of what the faculty were going through in their teaching. It certainly did that! However, in the end, the course was a great experience for me. On the bigger side, on a Friday in January, I received a phone call from the Provost at 10 am asking if the college could provide a -80 degree freezer. The city of Long Beach had Pfizer vaccines sitting on dry ice, and if we had a place to store them, then the campus could start vaccinating our employees on Monday. Since earlier we had been told that there would be no need for our freezers, we hadn't prepared for this. However, my college safety team and microbiology technician worked at breakneck speed to get a -80 degree freezer over to the health center in time for CSULB to start vaccinations. A win in any book.

I imagine when I look back on this article in 6–9 months, I will again marvel at how much has changed in that time and how much being a dean has reverted to what it was pre-pandemic. But I hope most of all, looking back I will continue to see how lucky I am to have so many great faculty members and such a great leadership team that kept the college afloat during the worst of the pandemic.



Curtis Bennett

Credite

Photo of Curtis Bennett is courtesy of Daniel Ames/California State University, Long Beach.

Lessons Learned in Response to COVID-19

Rachel Vincent-Finley

On March 12, 2020, the senior administration at Southern University and A&M College announced that because of COVID-19, in-person classes would be cancelled from March 16 to March 20, Spring Break would be moved to March 23–27, and classes would resume remotely on March 30, 2020. Students were encouraged to vacate

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residential halls; though, accommodations were made for those students who were unable to relocate.

During March 16–27 faculty participated in "boot camps" to transition face-to-face courses into virtual courses. This included revising syllabi, modifying assignments and assessments to be administered via Moodle, and planning to teach using Microsoft Teams or Zoom.

Barriers to student participation in remote learning included access to computers and internet service for those away from campus. In response, the university purchased laptops for students to check out via the university library, and the university, the Southern University System Foundation, and the SU Alumni network reached out to support students who requested further assistance.

Planning for summer 2020 and fall 2020 courses commenced shortly after spring 2020 classes resumed. Summer classes were to be taught online, while fall classes were to be taught in three modes: traditional (in-person delivery), hybrid (in-person and synchronous remote delivery), and online (asynchronous delivery). Class sizes for traditional courses were reduced to allow for social distancing in classrooms. Hybrid courses gave students the option to participate in the class remotely or in-person, with in-person attendance schedules set to maintain social distancing requirements.

To prepare for summer and fall 2020 courses, the Southern University System offered a series of faculty workshops. Faculty who were experienced with online instruction and instructional designers facilitated workshops, and served as resources for course design and implementation. In addition, the university purchased laptops and audio-visual equipment for faculty to use in course development and delivery, and equipment to build multimedia classrooms across campus.

Prior to the return of students and faculty to campus in fall 2020, Southern University (SU) partnered with local, state, and federal officials to offer free COVID-19 testing on campus which was open to the public. The university also worked with CareSouth to host an employee wellness clinic in the School of Nursing, with plans to use the facility as a teaching location for nursing students. The wellness clinic offered COVID-19 testing and flu shots to Southern University employees at multiple locations. The Student Health Center administered COVID-19 tests for students. Campus checkpoints were established for temperature checks, and the Southern University System masking policy was advertised broadly via email, on the university website, and during new student orientations. A series of virtual town hall meetings were held in July and August for students, faculty, and staff to discuss plans for a safe return to campus and to address concerns about fall 2020 preparedness.

Unfortunately, the required classroom technology was not in place at the start of the fall 2020 semester to

adequately manage hybrid course delivery. Nonetheless, faculty were flexible in administering courses and engaged students remotely and in person when possible, while the Division of Information Technology worked tirelessly to facilitate the installation of classroom technology. As installations were completed, more classes returned to campus with the goal of all classes being run as originally planned by September 28, 2020. Additional faculty meetings and trainings were held to facilitate this process.

Concerns about course delivery and intra-campus communications were common during the fall 2020 semester. The Office of Academic Affairs reported results from fall 2020 student surveys indicating that students expressed dissatisfaction with the assistance received and with responses or response times by instructors. Customer service protocols and information dissemination practices were reviewed as Southern University and A&M College began the spring 2021 semester.

While fall 2020 end-of-semester enrollment was slightly below fall 2019 enrollment data (a 3.1% decrease), the institution successfully managed recruitment and enrollment virtually. New student orientations were administered virtually and in-person. To the pleasure of fall 2020 graduates, Southern University hosted fall 2020 commencement in-person outdoors while abiding by social distancing guidelines and university protocol.

The spring 2021 semester is now in full swing with course delivery again in three modes: traditional, hybrid, and online. Southern University continues to closely monitor state and federal guidelines concerning COVID-19 as the administration plans for the fall 2021 semester.



Rachel Vincent-Finley

Credits

Photo of Rachel Vincent-Finley is courtesy of Kari Walters Photography.

Sastry's Soliloquy

Sastry G. Pantula

Striving for excellence, enhancing diversity, and fostering harmony have been three of my core values for decades.

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These values brought me to California State University- San Bernardino (CSUSB) where the impact on social mobility in the Inland Empire offers infinite possibilities. It is gratifying to be surrounded by a diverse set of majority first-generation students eager to pursue their dreams and to work hard to reach their full potential. I joined CSUSB in August of 2018 as the Dean of the College of Natural Sciences which has nine departments covering physical, computational, and health sciences. Student success, measured in terms of increasing graduation rates and retention, and decreasing equity gaps, is our number one priority. CSUSB recognizes that faculty and staff are a key to our student success.

With student success as our primary goal, we have invested in increasing our advising services and training faculty in evidence-based pedagogical methods. I am thrilled that we recruited 10 and 22 new tenure track faculty in 2018–19 and 2019–20 academic years, respectively (seven in the Department of Mathematics!). Things were progressing very well, and then the pandemic hit. In the 2020 spring quarter we had to pivot quickly to virtual teaching and learning with a week's notice. It was chaotic, but our faculty worked hard to move the materials to teach in a virtual mode, staff learnt to use Jabber and work from home, and students juggled their computer time with family. Students were given the option to switch their grades to Credit/No Credit. When it was realized that we are in for a long haul, during summer 2020, CSUSB invested significantly in training its faculty to be better virtual teachers, and we continue to invest in such training. CSUSB distributed laptops and hotspots to students, faculty, and staff.

In addition to the pandemic, systemic racism, unemployment, elections, and budget challenges, CSUSB had an extra challenge in the fall 2020 semester of converting from a quarter system to a semester system. Fall semester felt extra-long as the need for emotional and mental support for our students continued to grow. Unlike some of our neighbors in the community, most of us still have our jobs. However, it is an understatement to say that our faculty and staff are exhausted. I can say this not just based on several surveys, but from the comments posted on forums and from responses to email requests from students and administrators. This is where it is important to prioritize what must get done and what can wait. A good outcome has been making most processes more efficient and electronic. A student doesn't need to go to four buildings and chase people down to add a class anymore! It is important to keep in touch with our students, faculty, and staff regularly. We are engaging our students, because engaged students excel. Podcasts, Instagram live, showing the documentary "Unlikely," workshops about careers and skills, and various virtual seminars have been helpful. I found tutoring a couple of students in statistics and linear algebra rewarding. Staff have a weekly hour to play games and socialize virtually.

I have weekly zoom hours with students on Tuesdays and with faculty and staff on Wednesdays. New faculty have had challenges with investing their start-up funds with an expiration date while there are no conferences to travel to or to renovate their research labs during the stay-at-home orders. Some have requested an extension of their tenure clocks. The budget and the pandemic are also having an impact on sabbatical leaves.

One group that requires particular attention is our department chairs. As it is, being a chair is one of the hardest jobs on any campus. The pandemic only increased their burdens in dealing with a number of issues including: reductions in student credit hours, reduced budgets for part-time faculty funding, vacant staff positions not being filled, faculty and staff in COVID-19 isolation, faculty on medical leave, finding replacement instructors mid-semester, student performance and cheating issues online, hybrid labs, listening to pressure pitches from salespeople, adjusted roadmaps for semester conversion,

The list is unending. Some stress and time management workshops and timely fun recharge activities are critical. Extra pats on the back and having their back are a must! Our chairs have been outstanding, they have a lot to be proud of themselves for, and I am proud of them.

Finally, you have to put the oxygen mask on yourself before you put it on your child next to you. Self-care is important and it has not been easy for deans to be problem solvers. This is where I am so fortunate to have colleagues who meet weekly for *Drinks with Deans*, virtually of course. An hour or two every Friday evening to w(h)ine down. Even the Provost joins us occasionally. We are fortunate to have very supportive leadership at CSUSB. Also, CSU deans across the 23 campuses met regularly to support each other and find common solutions. What a great bunch! We are all in it together, and we can thrive, not just survive.

What do I miss? I miss being on our beautiful campus, passing out donuts or popcorn, taking selfies with students and distinguished visitors, and smelling the science in the air. I look forward to being back, vaccinated, and enjoying a new normal. I remain optimistic that science will be back at the table, and at CSUSB, We Define the Future!



Sastry G. Pantula

Credits

Photo of Sastry G. Pantula is courtesy of Brigette T. Borjon/California State University, San Bernardino.

Is the Business Model of American Higher Education Sustainable?

Wayne Raskind

By the "business model" of an organization that may be for-profit or not, I mean how they get revenue and how they manage expenditures (costs) to pursue their mission. My comments pertain mainly to non-profit institutions.

I attended the University of Pennsylvania (Penn) from 1977–81 and was very fortunate to be there at the same time as my good friend and fellow author of this article, Robin Forman. You can find on Penn's webpage tuition, fees, and room and board expenses year-by-year going back to 1900.² In my first year, tuition and fees were \$4450, and room and board \$2350, for a total cost of \$6800.

Fast forward to the present. With my good but not outstanding high school academic record, currently I would almost certainly not be admitted to Penn. This is not false modesty, but rather my experience interviewing applicants a few years ago. All looked strong, but *none* were admitted. Tuition and fees at Penn for the 2020–21 academic year are \$58,000, with room and board \$15,000, for a total cost of \$73,000. Thus tuition now is about 13 times what it was in 1977, while the Consumer Price Index is 4.5 times and the average price of a new car is 6.4 times. This leads me to ask:

- 1. Why has tuition increased so much more than other prices?
- 2. Why is it that institutions with the largest endowments are among the most expensive?
- 3. What is the true cost of graduate education?
- 4. Is COVID-19 a temporary problem for higher education, or will difficult financial conditions persist?
- 5. Is the "business model" of American higher education sustainable?

Of course, I don't have definitive answers to these questions, but here are some comments and ideas:

In short, expenditures have increased faster than revenues other than tuition, and the difference is made up by raising tuition. Some attribute the increase to the growth of administrations, and lament what they view as bloated staffs and salaries of deans, provosts, and presidents. At public universities, flat or declining appropriations from their funding bodies (state, city,

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²https://archives.upenn.edu/exhibits/penn-history/tuition/tuition-1970-1979.

county, ...) has driven tuition increases for many years, but even more since the Great Recession and in this COVID era. It has become harder to maintain sufficient enrollment, especially at tuition-driven private and public institutions in economically disadvantaged regions. The cost of performing research (personnel, equipment, buildings, compliance,...) has increased greatly, while external grant funding has not, and with more competition than ever. Some institutions may be driven to the brink financially by their medical schools. The price of faculty and staff benefits rises inexorably, especially healthcare. For institutions with many students who are underprepared or otherwise at risk, academic support services have improved, but at a cost. At wealthier institutions, there are lavish student centers, recreational facilities, and other perks that did not exist a few years ago. All of these factors (and more) have contributed to the increase in costs and tuition. Average faculty salaries have certainly increased over time, but this does not appear to be as much of a driver of tuition increases as those just mentioned.

- 2. Institutions with the largest endowments tend to be older, more prestigious, and have more influence on higher education. They offer a premium good that many wealthy people will pay for, no matter what the price. This has accelerated in recent years because of the growth of their undergraduate applicant pools, including more international students. To their credit, they provide generous financial aid to students who are not as wealthy, but it is harder for those students to get in than before. The *New York Times* did a survey of colleges and universities a few years ago, and found that in a group of 38, including five from the Ivy League, there were more students from the top 1% of socioeconomic status (2017 family income of \$630,000 or above) than from the bottom 60% (\$65,000 or below).³
- 3. If you read in detail about the cuts that universities have made as a result of COVID, many are to graduate education in the form of reducing the size of PhD programs, placing moratoria on admissions, or even shutting some down altogether. These programs often provide generous support to students in the form of fellowships and teaching assistantships, including tuition waivers. Graduate education is very expensive, and in my experience, we don't know how much it really costs (it varies widely by field). Programs claim to be unique and innovative, and yet they often closely resemble those at other institutions. If we are to reduce costs and increase efficiency, institutions are going

³https://www.nytimes.com/interactive/2017/01/18/upshot/some-colleges-have-more-students-from-the-top-1-percent-than-the-bottom-60.html.

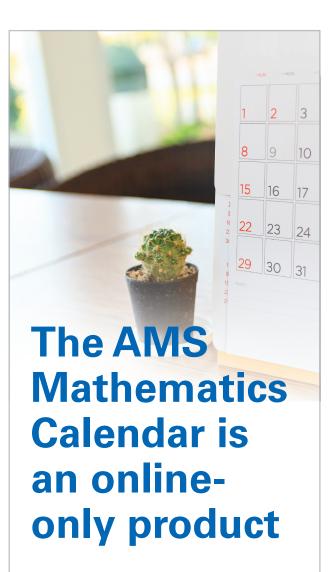
- to have to work together to get the most out of the resources they enjoy.
- 4. COVID has been a big challenge for most institutions, private or public, wealthy or not. I believe that prestigious private institutions will recover quickly because of their tuition structure and endowments, but public universities, especially non-flagship institutions, will take longer. Some may never recover, and I predict that there will be more mergers and some may have to cease operations altogether.
- 5. I really hope I am wrong, but I have come to believe that the current business model of American higher education is not sustainable. The only way to make it more sustainable is to contain costs, which will require making difficult choices about academic programs, the administrative structure of institutions, research expenses, and the relationship with local, state, and federal governments. If academics are unable to do that, governing boards will, and the results may not be to our liking.



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Credits

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