THE MICHIGAN ENGINEER

UNIVERSITY OF MICHIGAN | COLLEGE OF ENGINEERING | SPRING 2016

SET IN MOTION

HOW MUNSON'S LEADERSHIP PROPELLED MICHIGAN

University of Michigan
College of Engineering
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Ann Arbor, MI 48109-2112

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A DECADE OF VOICES

What's so special about being a Michigan Engineer during the last ten years? Alumni and students from the tenure of David C. Munson Jr. describe it in their own words.

While in undergrad, I had my first abroad experience travelling to India with Dean Munson. That experience opened my eyes, and has helped me develop into an engineer who sees the complexities of the world and engages fully as a team member and leader. Dean Munson's encouragement and support were the catalysts of many of these transformations, and I cannot imagine where I would be today without them. Thank you Dean Munson!
Jenna Bertke
BSE/MSE IOE '13/'14

When I was a high school senior, I got to meet Dean Munson on my visit to campus, and I thought that meeting a real college DEAN was the coolest! Meeting him was one of many things that convinced me to choose Michigan, which turned out to be one of the best decisions of my life. Go blue!
-Dara Fisher BSE AOSS '11

Dean Munson,
Thanks for creating a wonderful environment for students to pursue their ideas, and helping us to make them reality. Always will remember your great encouragement during office hours & our work in the Pantanal. Excited to see what you'll be up to next.
Best,
Julie Bateman
Civil+Env'r '12

"With this, I hope you go on and do something great." ~DM

I'll never forget those words from Dean Munson who always challenged me to be more than an engineer with just a few good ideas, but instead a true game-changer, a true Michigan Engineer! Go Blue!
– Rama Mwenesi
IOE BSE '13 MSE '16
Mr. Engineer 2013 :)

Without Dean Munson's push to get every engineering student to travel abroad, I wouldn't have spent 20% of my undergrad career internationally... and the majority and enriching part of my learning and career direction would not be the same.
- Ryan Thomas
BSE BME '16

Dean Munson is by far the coolest dean on the planet! Rap videos, chest bumping at graduation, student office hours... the list goes on. My favorite memory is when we got to go to India together and I was so fortunate to grow closer to him AND his wife, Nancy (my AA mom! :)). Thanks for the positive influence you have had on my life, Dean Munson! (and now, my entire family!) Munson-initiatives that have inspired me forever.
Go blue, Sita Syal
BSE ChE '13
MEng ESE '14

Every time I met with Dean Munson, it was clear how dedicated he was to serving the Engineering students at Michigan. He inspired me to think broadly about the many roles of engineers in today's society, which helped motivate me to pursue a PhD in Bioengineering!
– Jon Muncie, BSE BME '14
Go Blue!

The trait I admire most about Dean Munson is his ability to encourage us to think big, then turn our ideas into reality. My only regret from my time on student government is I couldn't talk the Ann Arbor fire marshall into letting us build a bonfire on north campus (one of many great ideas Dean Munson encouraged me to pursue). I take the same energy & sense of possibility with me wherever I go.
- Courtney Holscher
BSE BME '09

I'm so grateful for Dean Munson's support of student organizations, social entrepreneurship, and international experiences for engineers. These initiatives added breadth and richness to my CoE education!
– Julia Samorezov BSE BME '09

Whenever I visited Dean Munson to update him on the Solar Car Team, he always made sure I was learning not only on the team, but in classes, job searches, etc. This trickled down throughout the college as every faculty member helped to make sure that I learned throughout every aspect of being a Michigan Engineer.
Eric Hausman BSE IOE '14

I would never forget how inspired I feel every time after hearing a speech from Dave. Doesn't matter if it's at the graduation, or at the fireside chat in Michigania, or even just in his office, his commitment to the college & thoughts for the students are affectionous & unparalleled. I'm fortunate & grateful to get to know Dave, & honored to have him as my mentor.
Danny
BSE ChE '10 Feb 25th 2016

DEAN MUNSON HAS ALWAYS HAD A PASSION FOR THE STUDENTS AND THEIR ENDEAVORS. HIS INITIAL SUPPORT FOR OUR IDEA FOR THE MICHIGAN AUTONOMOUS AERIAL VEHICLES TO DEVELOP AUTONOMOUS DRONES WAS CRUCIAL IN THE IDEA GETTING OFF THE GROUND. OUR START-UP, SKYSPECS, WOULD NEVER HAVE HAD THE CHANCE TO GET WHERE IT IS TODAY WITHOUT DEAN MUNSON'S SUPPORT. WE WILL FOREVER OWE OUR SUCCESS TO THE FOUNDATION WE WERE ABLE TO BUILD AT U OF M UNDER HIS TENURE. MICHIGAN IS A GREAT PLACE BECAUSE OF DEAN MUNSON.
– DANNY ELLIS &
THE MAAV TEAM & SKYSPECS
BSE & MSE AEROSPACE ENGINEERING
2010 2013

My fondest memory of Dean Munson was during Homecoming weekend 2013. I was at the Alumni tailgate at the golf clubhouse. There had to be a couple hundred alumni and donors at the tailgate, but Dave found time to talk to me and the other Engineering Student Ambassadors about our experiences at the University of Michigan. He even took a picture with us! I still display that picture proudly on my facebook.
– Duane Gardner
BSE ME '14

When my time to chat with Dean Munson came, it was an hour past the end of office hours. I was concerned he was too busy, but he made sure to meet me and get to know me. It showed me he values students first – the best quality to ask for in a Dean.
– Samantha E. Rahman '17
BSE CHE

I wouldn't have been able to travel across the world with the Solar Car Team if not for Dave's enthusiasm for student projects. I'll always remember him fist pounding and chest bumping students at graduation when swine flu prevented all hand shaking!
– Steve Hechtman
BSE EE '09

IT TAKES A VILLAGE...

Associate Deans and Department Chairs at Michigan Engineering have a big hand in shaping the College's trajectory. These are the people who held those posts during Munson's tenure.

Associate Deans

Anthony England; Academic Affairs, 2004-09
Alec Gallimore; Research/Graduate Education, 2011-14; Academic Affairs, 2014-16
Erdogan Gulari; Research/Graduate Education; 2009-11
Gary Herrin; Undergraduate Education 2006-07
James Holloway; Undergraduate Education 2007-13
S. Jack Hu; Research/Graduate Education, 2007-09; Academic Affairs, 2009-14
Jennifer Linderman; Graduate Education, 2014-16
Brian Noble; Undergraduate Education, 2013-16
Stella Pang; Graduate Education, 2004-06
Dawn Tilbury; Research, 2014-16
Levi Thompson, Jr.; Undergraduate Education, 2004-06
Thomas Zurbuchen; Entrepreneurial Programs, 2009-15

Department Chairs

Dennis Assanis; Mechanical Engineering, 2006-07
Mark Burns; Chemical Engineering, 2008-16
Steve Ceccio; Naval Architecture & Marine Engineering, 2011-16
Mark Daskin; Industrial & Operations Engineering, 2009-16
Brian Gilchrist; Electrical Engineering & Computer Science, 2006-07; Electrical Engineering, 2007-08
Ron Gilgenbach; Nuclear Engineering & Radiological Sciences, 2010-16
Tamas Gombosi; Atmospheric, Oceanic and Space Sciences, 2006-11
Peter Green; Materials Science Engineering, 2006-14
Kim Hayes; Civil and Environmental Engineering, 2011-16
Roman Hryciw; Civil and Environmental Engineering, 2007
Dan Inman; Aerospace Engineering, 2011-16
Farnam Jahanian; Computer Science & Engineering, 2007-11
Ron Larson; Chemical Engineering, 2006-07
Nancy Love; Civil and Environmental Engineering, 2007-11
Bill Martin; Nuclear Engineering & Radiological Sciences, 2006-10
Amit Misra; Materials Science Engineering, 2014-16
Khalil Najafi; Electrical Engineering, 2007-08
Marios Papaefthymiou; Computer Science & Engineering, 2011-16
Panos Papalambros; Mechanical Engineering, 2006-07; Integrative Systems + Design, 2010-16
Kenneth Powell; Aerospace Engineering, 2010-11
Lawrence Seiford; Industrial & Operations Engineering, 2006-09
Wei Shyy; Aerospace Engineering, 2006-10
Jim Slavin; Climate & Space Sciences & Engineering, 2011-16
Armin Troesch; Naval Architecture & Marine Engineering, 2006-11
Kon-Well Wang; Mechanical Engineering, 2007-16

“I DIDN’T GO TO MICHIGAN, BUT I WISH I HAD.”

The Robert J. Vlasic Dean of Engineering David C. Munson Jr. – or just plain “Dave,” as he’s more generally known –

is extolling the College’s various virtues, speaking at a luncheon from the elevated platform of a spiral staircase in the expansive atrium of the Ann and Robert H. Lurie Biomedical Engineering Building.

It’s a warmish Tuesday afternoon in late January, and Dave is hosting a group of underrepresented minority and other underserved high school students from around the country wh o have been offered Fall 2016 admission to the College but have yet to accept.

Dave raves about the University’s “amazing school spirit,” and the Michigan alumni who will be “your friends for life.”

“When you come here,” Dave tells them, “*you join a family*.”

If this is a sales pitch, it doesn’t feel that way. The head of the Michigan Engineering family is speaking from his heart.

Story by: Randy Milgrom

Photos by: Joseph Xu

Addressing admitted high school students and their parents in the atrium of the Ann and Robert H. Lurie Biomedical Engineering Building

Following the luncheon, Dave walks briskly back to his office on the second floor of the Robert H. Lurie Engineering Center.

"What you see here," Dave says, referring to his office with a sweep of his long arm, "is a dean in his last year." "Stuff" has piled up, and Dave says he plans to go through it when he leaves.

"Truthfully, that's the reason I'm being asked to step down as dean – because my office is such a mess," he jokes. "The University would like to reclaim its office."

Dave works in an adjacent conference room – a relatively ordinary space just large enough for a table that might seat 10. And this is where he conducts the vast majority of the College's business – developing the broad vision for myriad new programs and initiatives and delving into the most intimate details of building planning, fundraising, hiring practices and even outdoor sculpture design.

Associate Dean for Graduate Education Jennifer Linderman is already waiting for Dave in the small area just outside this inner sanctum. (Someone is almost always waiting, one after another after another. Much of Dave's time is devoted to standing meetings, often several times each month, with his associate deans and cabinet; the Executive Committee; department chairs; directors of various offices, centers, and other initiatives; and many others.)

This meeting's agenda concerns the annual Graduate Student Forum, which this year will focus more specifically than usual on diversity, equity and inclusion – a University-wide emphasis. When Dave learns from a recent graduate student survey about a perceived lack of "visible support" for LGBT issues on campus, the news disquiets him – if only mostly below the surface.

"Visibility" rises and falls based on student leadership, Dave says.

"I think our student societies do a great job. And when they do well it couldn't be better, because it's ground up." And whenever student groups are active, Dave attends their events, and provides support in other ways.

"I have a gay brother, so LGBT issues are important to me," Dave says.

And historical perspective is in order.

"Whether people are unhappy or not, progress has been made. We're leaders – but we need to do more, and we know that."

Diversity is about numbers. Inclusion is the sense that everyone feels welcome – "a part of the family." But equity is about opportunity. And though merit is a given, we need to look further.

"We ought to be recruiting based on what we think you can do, not just on what you have done – especially if you've not had all the advantages. We have an obligation to look at potential."

"...PROGRESS HAS BEEN MADE. WE'RE LEADERS – BUT WE NEED TO DO MORE, AND WE KNOW THAT."

NEW RECRUITMENT IDEAS DRIVE SMART GROWTH

Alec Gallimore still remembers the meeting with Dave that transformed the College's recruitment strategy. They launched a completely new philosophy, centered on the idea that growth alone isn't enough.

The real goal, Dave believed, isn't just to attract more people, but to attract precisely the right people – from undergrads to faculty members – to make sure that every person on campus plays a specific role in making the college stronger.

"Dave challenged us to grow not just for growth's sake, but strategically," said Gallimore, Associate Dean for Academic Affairs and Dave's succesor. "He showed us that we had the opportunity to attract a cadre of leaders, of world-class students and faculty members. We knew we could do it. But we also knew that we'd have to do things differently."

That meant a far more aggressive approach to finding the right people, and doing more to show them what the college has to offer.

The team initiated with a new summer outreach program that brought top prospective graduate students at other institutions to U-M for the summer, where they could develop relationships with faculty. They also used symposia, recruitment weekends and other tools to bring the best minds to campus.

The college also found new ways to attract and retain the best faculty members, establishing new named professorships and endowments to create more advancement options for top talent.

"Named professorships are important because they offer a career path to those who are already full professors and aren't interested in other paths like administration," Gallimore said. "It gives us another way to be competitive and make sure our best people stay with us."

The new philosophy extends to the undergraduate level as well, where administrators have become more strategic about attracting undergrads who help create a richer university experience for every student.

Executive Director for Student Affairs Jeanne Murabito says they've worked hard to identify the right students and forge personal connections. For example, a group of staff members now works directly with community college students, helping to bring in students from a wider variety of ages and socioeconomic backgrounds.

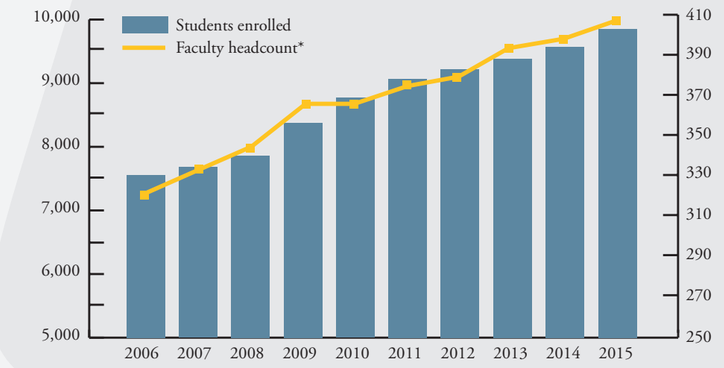
"Some students have the potential to succeed, but have trouble seeing themselves here," she said. "They worry that they're not ready academically or that they don't have the social capital of other students. We've found that having a face and a person in the college that they can go to is often what makes the difference."

Another success has been the college's HAIL program, which pairs U-M alumni with prospective students. The program has grown from 125 to 700 alumni, who interview and answer questions from thousands of prospective students from across the United States.

Ten years in, the strategic approach has helped create a better mix of students and faculty, driving growth in key areas like robotics, autonomous vehicles, computer science, nanotechnology and bioengineering. It has increased both enrollment and selectivity, laying the groundwork for continued success.

"When I started here, our acceptance rate was about 70 percent," Murabito said. "Today it's 24 percent. Dave likes to say that a we're only as good as our people, and if that's the case, I think we have every reason to be optimistic for the future."

STUDENT & FACULTY COUNT



**Tenure and Tenure-Track Faculty. Source: Dean's State of the College Address*

A week earlier, during the MLK Spirit Awards Celebration & Reception – which annually recognizes individuals and organizations within the North Campus student community whose leadership and service exemplify the spirit of Martin Luther King, Jr. – Dave was in his element.

As one of the presenters, Dave quickly buttoned his coat before posing with award winners (most of whom Dave knew well) – often whispering smile-inducing comments just before photos were snapped. Toward the end of the evening, Dave and Christopher Kendall, former dean of the School of Music, Theatre & Dance, were honored as longtime champions of inclusion and diversity. Dave was surprised and thrilled – though demonstrably uncomfortable with the attention.

Dave is an engineer, of course, but he's a mathematician first – a grade school whiz who'd amaze his friends and later even his college cohorts with the speed and ease with which he'd calculate figures in his head out to several places. ("There wasn't anything to it," Dave says. "Everything just instantly came to me.")

His thinking is disciplined and orderly, and up close it is often captivating to watch as he counts and gesticulates with his fingers and looks up and away as if arranging his thoughts before enunciating them. Others give the appearance of it, but here the conclusion is inescapable: Dave is in deep thought.

"Yeah…," Dave might say, melodically elongating the word. "That's actually a really great question…." And then he inevitably gives you a really great, comprehensive – which often means lengthy – answer.

Also, Dave is tall. Everyone notices that. Many comment on it. "People used to expect me to play basketball," he shrugs, "but nobody cares anymore."

Dave did play a little high school basketball, but he describes a childhood in Iowa and Ohio filled with rockets made from cardboard tubes and balsa wood that were "launched so high you couldn't see them, so you'd track them with binoculars and you'd use your walkie-talkies and your recovery team would find the thing out in some farmland."

When Dave was a high school junior his family moved to Delaware. He took his first course in electrical engineering in circuit analysis as a sophomore at the University of Delaware and was hooked – "just all mathematical modeling, and I loved that." After pursuing a PhD at Princeton, he chose the University of Illinois over industry, figuring if he didn't like teaching he could still probably get a job afterward at IBM or Bell Labs.

Turned out Dave liked teaching – a lot. And Dave and his wife, Nancy – whom he met as an undergraduate at Delaware – made many good friends at Illinois, where Dave spent more than two decades as a top scholar and faculty member.

But Dave eventually needed a new challenge. And when the job as chair of Electrical Engineering and Computer Science (EECS) at Michigan was offered, he was eager to accept.

But first he had to get Nancy on board. Though unfamiliar with Ann Arbor, Nancy was excited about doing something different. And once she visited the church they still attend, they "never looked back." Soon their only question was, "Why did it take us so long to get here?"

Dave immediately was taken with the "absolutely crazy, over-the-top" spirit on campus, and with the unwavering enthusiasm and support of the alumni. He also understood it: Michigan was nearly unparalleled in its excellence at every college, school and department throughout the University.

Two years later, Stephen Director, who had recruited him, sheepishly told Dave he was stepping down as dean. Dave said that's fine: "I love this place!"

Dave also loved his situation at EECS, but after he was repeatedly asked to pursue the dean's post, he developed a list of potential initiatives that included a comprehensive entrepreneurship program, a multidisciplinary design curriculum and an enhanced set of international learning opportunities.

Once appointed, Dave "twisted the arms of some really great self-starters" to take the lead in each area. In entrepreneurship it was

At lunch at Pierpont Commons with wife Nancy

A bobblehead keepsake presented by staff at 2015 Halloween party sits in a cabinet full of mementos in Dave's home

THOUGH UNFAMILIAR WITH ANN ARBOR, DAVE AND NANCY WERE EXCITED ABOUT DOING SOMETHING DIFFERENT. SOON THEIR ONLY QUESTION WAS, "WHY DID IT TAKE US SO LONG TO GET HERE?"

BREAKING BOUNDARIES THROUGH INTERDISCIPLINARY COLLABORATION

When Dave took the helm of the college ten years ago, he recognized the power in connecting top faculty in other U-M schools, who identify and contend with challenges in arenas such as medicine and health, with talented problem-solvers in engineering.

Doctors know what tools they wish they had, and which devices and tests should work better. Collaboration with engineers can help them find the solutions. Dave and James Woolliscroft, former dean of the Medical School and the Lyle C. Roll Professor of Medicine, worked hard to forge closer ties between the College of Engineering and the Medical School, enabling these projects.

To help their faculty team up more easily, they started the process that led to the joint biomedical engineering department. They offered lab and office space in the new North Campus Research Complex, purchased in 2009, to faculty and students in these nascent collaborations so that they could work side by side.

"It gave us a physical place where we could realize our dreams for collaborative research around a problem, totally agnostic of school or college," said Woolliscroft.

But quality healthcare requires more than the right tools. Running a hospital or health system is an enormously complex task, and better management can reduce the risk of mistakes, boost efficiency and ultimately improve patient experiences. Amy Cohn, an Arthur F. Thurnau Professor, said of Dave and Woolliscroft, "They recognized that we have not tapped the full benefit of the systems perspective to improve how healthcare is delivered."

Cohn is the associate director of the Center for Healthcare Engineering and Patient Safety, started in 2011, which examines hospital processes and educates nurses and doctors. The students and faculty take a hard look at the U-M Health System to find opportunities for better efficiency and improved safety in processes that have long been taken for granted.

Beyond patient care, public health offers fertile ground for collaborations, such as those to clean up air and water. "We now operate on the principle that it's not enough to study the problem. We have to find sustainable solutions to the problem," said Martin Philbert, dean of the School of Public Health. His attitude is reflected across the university.

Engineering faculty are also crucial partners in an effort to develop driverless car technologies – including the vehicles, road and traffic infrastructure, and transportation policy. With involvement from over 55 companies since its launch in 2013, the Mobility Transformation Center (MTC) is already one of the largest industrial partnerships at U-M.

"The college and university have a long history at the forefront of automotive and mobility technology, and this initiative strengthens that position," said Huei Peng, the Roger L. McCarthy Professor and director of MTC.

Computer simulation and the handling of big data sets are becoming critical tools for scientists of all stripes. Engineers apply advanced computing to solve problems and also enable more effective simulations and data analysis. Engineering is a supporting pillar of two new data science institutes, launched in 2015: the Michigan Institute for Data Science and the Michigan Institute for Computational Discovery and Engineering.

"Dave set the tone for new interdisciplinary collaborations," said Gallimore, the Richard F. and Eleanor A. Towner Professor of Engineering, and an Arthur F. Thurmau Professsor. These ongoing partnerships across campus, industry and government will help open new avenues toward meaningful advances for society, a journey that will continue for many years to come.

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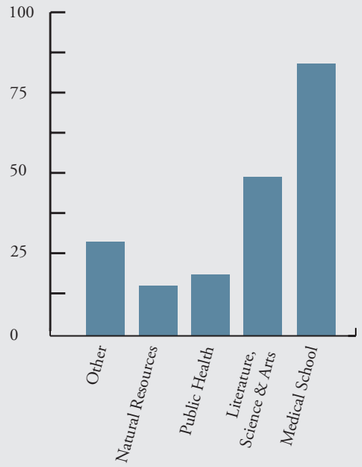
INTERDISCIPLINARY COLLABORATIONS

INITIATIVES INCLUDE:

- American Lightweight Materials Manufacturing Innovation Institute
- Biointerfaces Institute
- Center for Entrepreneurship
- Center for Healthcare Engineering and Patient Safety
- U-M Coulter Translational Partnership
- Michigan Energy Institute
- Graham Sustainability Institute
- Mobility Transformation Center
- Robotics Institute

RESEARCH COLLABORATIONS



Congratulating new graduate Rama Mwenesi (BSE IOE '13, MSE '16)

Greeting [Michigan Engineering alumnus ————————] at Crisler Center

Climate and Space Sciences and Engineering (CLaSP) Professor Thomas Zurbuchen, who formed a task force to study what was possible. Dave loved every single recommendation – and asked Zurbuchen to implement them.

He repeated the process in multidisciplinary design, where EECS and CLaSP Professor Brian Gilchrist took the reins. And with international programs, Dave put James Holloway – then associate dean for undergraduate programs – in charge. Dave also relied heavily on former astronaut Tony England as his associate dean for academic affairs; on Jack Hu, who at that time was associate dean for research and graduate education; and later on Gallimore, who has held two associate dean posts.

While Dave is quick to recognize the work of others in nearly every aspect of the College's affairs, its growth – another prime initiative – seems a particular source of pride, and Dave takes a large share of credit for it.

Dave believed the College needed to grow if it were to become a major player in important new research areas, such as robotics, autonomous vehicles, computer science and biomedicine. "And because whether it's rankings or anything else, we want to be the best. There was no way we're going to compete with MIT if we're way smaller."

Many were resistant, citing space and other concerns. But Dave made a back-of-the envelope calculation – "it literally was a scrap of paper; it wasn't even a full sheet" – and determined it was possible to take tenure track faculty from 315 to 360 within a several year period.

"I wanted to go toe to toe – and I made no bones about it – with MIT and Illinois and Georgia Tech, and I wanted to create both the image and the reality that if you're looking at the top engineering schools in the U.S. you've got MIT on the east coast, Berkeley and Stanford on the west coast, and the rest of the country belongs to Michigan," Dave says. "I tried to sell that to the alumni and to everyone else."

And it worked. The number of tenure track faculty today is 405, with a three-year projection of at least 425 – and Dave continues to encourage department chairs to be entrepreneurial in their hiring practices, and to seek out future academic leaders.

Late one afternoon, students stream into Dave's conference room during his regularly scheduled office hours. A senior Dave knows well provides an update on her work with the Elementary Engineering Partnership at an Ann Arbor STEAM school. A PhD student seeks assurance and advice about an upcoming job interview. A freshman struggling with his workload asks about shifting his major to data science ("That's a lot of math," Dave warns. "You like math?"). A 5th year student about to graduate with a master's degree "just wanted to come by, meet you and say thanks. I've really enjoyed my time here." And a sophomore seeks advice on an early-stage software venture (which Dave gladly provides, in detail).

It's early evening now – though still not nearly the end of a typically long day – and Dave is at his conference room table, working on email, as usual. Dave mentions his "wacky" sense of humor – he's well known among students for his Halloween costumes, his chest-bumping at graduation ceremonies and his holiday rap videos. And over the years he's been lucky enough to get to know some students really well.

But a fun-loving spirit and sense of humor – wacky or otherwise – is no balm when "something really bad happens."

A traffic accident. A suicide. A memorial service. The parents of a foreign graduate student who died have never been to Ann Arbor and want see it, for closure. A freshman dies of cancer two months after classes begin. Parents who start a scholarship fund, "and then we see those parents every year. They're a very loyal part of the Michigan family, even though their kid never got to graduate."

Dave's eyes fill with tears. "That stuff is way harder than anything," he says.

Dave misses spending classroom time with students every week, but his relationships with alumni seem to meet a similar need.

"They're not turning in homework and exams, but they're showing you their companies and their successes, and you get to see what they've done with what they learned here."

Engaging with alumni is a big part of the job, and Dave has grown very fond of it. One of his most pleasant surprises, in fact, has been how close he and Nancy have become with so many of them – "friends for life," he says.

They've grown to know each other's families – their trials as well as their joys – and they've stayed overnight at their homes.

"You find yourself sitting up late at night, talking about things that matter a lot more than money."

And this intimacy has developed "partly because we all share something in common. We love the University of Michigan." Love it so much that they willingly help in tangible ways to achieve their shared goals – more dynamic faculty and students, free-flowing ideas and an environment that supports both – by participating in leadership discussions, getting involved with on-the-ground activities and establishing thoughtful funds they know will have an impact long after they're gone.

There's plenty of travel, but some of the most meaningful relationship-building opportunities take place right here on campus – and Game Day visits to the Big House are a nice bonus.

"This job probably wouldn't be as much fun if I didn't enjoy college sports so much," Dave admits.

As for fun, when Dave first arrived on campus he says he felt it was "a little too uptight. A little too constrained."

DAVE IMMEDIATELY WAS TAKEN WITH THE "ABSOLUTELY CRAZY, OVER-THE-TOP" SPIRIT ON CAMPUS, AND WITH THE UNWAVERING ENTHUSIASM AND SUPPORT OF THE ALUMNI.

Meeting with Deborah Mero, Executive Director of Resource Planning and Management

FOSTERING AN ENGAGED, COLLABORATIVE COMMUNITY

In 2008, the Michigan Daily lauded Dave as "a different kind of dean." Over the years, it hasn't been alone in that statement.

The blurring of lines between roles at the College has led to an altogether dramatic shift in how people interact with each other, much of which is attributed to Dave's influence. Staff feel more comfortable proposing new ideas. Students are encouraged to visit administration. Faculty are enabled to collaborate across disciplines, and with people outside of the University.

"Dave was definitely a huge culture change," said Christina Truskowski, director of human resources at the College of Engineering. What sets Dave apart, she said, is the fact that he actually doesn't set himself apart at all. "He's just a genuinely caring human being. He's created a sense of community by building an administration that is willing to sit down, hear people out and come up with solutions."

That community has expanded past the campus borders as well. Programs such as alternative spring break trips to Chicago high schools and the Michigan Engineering Zone (MEZ) in Detroit have created a bridge for outreach that aims to excite students about a Michigan Engineering education, and ensure a population with diverse backgrounds.

"The MEZ is linking FIRST Robotics, a national program that's really well-recognized and has quantitative impact, and bringing it into a community that is very important for us. Making a tight and lasting link between campus and the community in Detroit is key to ensuring the success of Michigan, and our entire region," said Michael Drake, senior director of research relations.

Creating that link with the other schools and colleges on campus has been just as important to Dave, who started his term by reaching out to the deans of fellow schools on North Campus to find opportunities for collaboration. Some of the facilities changes on North Campus have stemmed from the desire to create spaces for students from engineering, art, design, music, theater, dance and architecture to collaborate.

The ArtsEngine program is an example of that collaboration. The brainchild of the North Campus deans, ArtsEngine's mission is to stimulate and support integrative, project-based creative work to spur new solutions. Part of that occurs in the Living Arts program in Bursley Dormitory.

"We've been enabled to make the boundaries within campus, and beyond to the external world, much more permeable," said Drake. "We've taken a much broader approach to look at what research has academic merit, and how we can work with industry to make research that is meaningful and adds value."

Fifteen years ago, the promotion and tenure process discouraged faculty from branching out to create their own startups or work with corporations. That has changed under Dave's tenure, and the creation of specific programs to enable researchers to pursue research dollars and collaborate with startups and industry has created a more outward-facing culture.

"With the complexity of the problems we are dealing with now in the world, we can't answer them with the resources at only one college," said Drake. "We have to continue to grow the culture of collaboration to support people working together to solve those problems. We're now able to create systems that support students and faculty in finding and sustaining those collaborations."

Dave grew up in a musical family – he's played various instruments, he sings, and he's had experience in community theater – and he had long cultivated an arts agenda relative to the sciences. The first time he visited North Campus, he thought, "You've got to be kidding me. Engineering and arts all in one place? Did someone design this for me?"

Christopher Kendall already had formed an organization called Arts on Earth with Bryan Rogers (the deceased former dean of Art and Design) and Doug Kelbaugh (former dean of Taubman College of Architecture and Urban Planning), and when Dave arrived he joined them – and these three would be among the closest friends Dave would make. Together they and staff member Theresa Reid took the collaboration to another level with ArtsEngine – which later spawned the nationwide Alliance for the Arts in Research Universities (a2ru).

"I just love to go over to Walgreen (the Charles R. Walgreen Drama Center) and see the dancers walking around in their puffy socks, and the musical theater students sitting outside practicing their vocals," Dave says. "I really wanted – and I still want – to see even more of a mix between engineering and the arts, because I think it creates an environment that's good for everybody."

On February 18 the Michigan Board of Regents approved Alec Gallimore's appointment as the new dean of Michigan Engineering. Several days before the official announcement, Dave and Alec were enjoying a chummy one-on-one discussion in Dave's conference room, mostly catching up on the lives of mutual friends and talking about Dave's recent meeting in D.C. with other engineering deans around the country.

"So there was buzz about the search?" Alec asks.

"Two questions, that's all I heard," Dave laughs. "Who's the new dean? And what are you going to be doing?"

Dave has several hobbies he hasn't had much time for since becoming dean – music, photography, woodworking, gardening. He spends some occasional time Up North, where Nancy inevitably complains, "You're on email too much!"

Dave recognizes he's not able to shut it off, and he knows that's probably not a good thing. So when his final day as dean comes, he'll be ready. But until then, he is "very focused on what I have to get done before I leave office."

The morning after Alec was announced as the new dean, Dave hosted a Staff Brunch, where he delivered his final State of the College address.

"Let's see, not too much going on," Dave deadpanned. "Oh yeah – a new dean," he smiled, to much laughter.

"Alec's a good friend of mine," Dave told those assembled. "I have no concerns at all. He's a highly accomplished researcher, a wonderful teacher and an experienced administrator."

And in response to those who've asked if there will be changes: "I hope there are changes. And I look forward to seeing what they'll be."

After his presentation, Dave took questions.

What will he do next? ("Are you going to Disneyland?") Dave said he plans to take the one-year administrative leave he is due – "which may just be a kind way of saying, 'Please get out of here for a while'" – but he has no plans to retire.

"I want to thank you for your service," said a woman in the back. Dave stood quietly, humbled by the applause.

"I appreciate all of you so much," Dave finally said. "Now get back to work!"

Which is precisely what Dave did next.

GETTING STUDENTS REAL-WORLD EXPERIENCES

Right now, higher education is in the midst of a shift, at the core of which is striking the right balance between teaching concepts, and fostering opportunities for students to build skills as practicing engineers.

"Being excellent in all of your theory classes is necessary but not sufficient," said Gail Hohner, Director of the Multidisciplinary Design Program. "The magic of engineering happens in the syntheses of everything you know in an ambiguous or real world environment. That's where creativity and intuition start to play in."

Over the past ten years, Dave and college leaders have enabled the College to launch a variety of initiatives, with the goal of helping students discover that magic. Success required the College to challenge the status quo in carefully planned ways.

Task forces were formed. New programs were initiated and the College began to experiment with how to best get students into real-world situations. Interdisciplinary teamwork, international experiences and entrepreneurship became key ingredients in an ambitious recipe.

"Before Dave took over there was a very small international program in the College of Engineering," said James Holloway, Vice Provost for Global and Engaged Education.

Dave set an ambitious goal for 25 percent of all engineering students to have an international experience before graduation – and later increased that goal to 100 percent. Today the College is a leader in international education abroad, and oversees the two largest study abroad programs at U-M. "We've created a culture of expectation with students where going abroad is what they should do," said Holloway.

Woven throughout this evolving paradigm of education is entrepreneurial empowerment – the ability to translate high-potential projects and ideas into real-world solutions. Hands-on experiences have also been created through the introduction of the Multidisciplinary Design Program (MDP), which started as a small academic minor in 2007. Taking inspiration from what was already occurring within student teams – exposing students to the ambiguity and messiness of real world problems – MDP set out to curricularize that experience.

"Dave has given us the permission and mandate to pilot different ways of teaching an engaged learning experience, and then studying the results," said Hohner.

Hugging alumnae Sita Syal (BSE ChE '13, MEng '14) at a student organization event

Starting in Engineering 100 courses and continuing through capstone senior design projects, Michigan Engineering students are exposed to more situations where they have to recognize and solve problems that aren't preformatted, and those experiences are in turn teaching the College how to do a better job of delivering a 21st century engineering education.

IN RESPONSE TO THOSE WHO'VE ASKED IF THERE WILL BE CHANGES: "I HOPE THERE ARE CHANGES. AND I LOOK FORWARD TO SEEING WHAT THEY'LL BE."

CHAMPIONING INNOVATION, IN ALL ITS FORMS

A culture of "yes." Yes to divergent thinking and charting your own course. Yes to an exciting experiment that might fail, and seeing "failure" not as a setback, but as a step toward success.

These ideas reflect the entrepreneurial and innovative spirit of Michigan Engineering today. And Dave was, in a big way, the impetus behind the shift, working with College leaders to put key programs in place that encourage students and faculty to think like entrepreneurs and look beyond traditional boundaries.

They understood that to be successful in these times, graduates would need more than a traditional engineering education. They'd need to know how to innovate, define new problems and markets, have big ideas and then push them out of the lab and into society.

"There was a recognition that we live in a world that has an expectation for innovative thinking regardless of your role, and Dave wanted to make sure he provided the foundation for that," said Tom Frank, director of Michigan Engineering's Center for Entrepreneurship (CFE).

The CFE is a cornerstone in that foundation. It was launched in 2007, upon the recommendation of a group of faculty and students convened to determine how to awaken the community's inner entrepreneur. As its first director, Dave appointed Zurbuchen. Among Zurbuchen's and the CFE's charges were to design classes, incubators, mentorship opportunities and grant programs.

Now, almost a decade later, they have trained or supported almost 8,000 students, faculty or businesses.

Zurbuchen, who was named Associate Dean for Entrepreneurial Programs and later Senior Counselor to the Provost on Entrepreneurship, then went on to lead the launch of Innovate Blue, an entrepreneurial program for the entire university. The success was possible, believes Zurbuchen, because of an open approach from the start.

"I realized quickly that the best ideas came out of teams with mixed backgrounds," said Zurbuchen, who felt strongly that its offerings should be open to students outside engineering.

It works the same for faculty research. When Chemical Engineering Department Chair Mark Burns, Gallimore and Zurbuchen teamed up to bring the radical, grassroots idea that is Mcubed to Dave, he listened – even though the premise sounded crazy.

Mcubed sparks innovative research by rapidly awarding $60,000 seed grants to teams of three professors from different disciplines, with no traditional review.

"The goal is to really give faculty the opportunity to work on things they're passionate about – things they would have a hard time getting funding for through standard practices," Zurbuchen said.

Many decision-makers were uncomfortable with the "no review" aspect. But Dave's support helped convince the university's other 18 schools and colleges to buy in. So far, Mcubed has funded nearly 400 projects and brought in an additional $33 million in external funding.

At the heart of both endeavors – entrepreneurship and Mcubed's brand of innovation – is the trust that Michigan Engineering leadership placed in its students and faculty: empowering them to believe in their ideas, and giving them tools to make those ideas real.

"From those seeds," Frank said, "it's become a culture of yes."

5000+
undergrad students enrolled in entrepreneurship classes

963
graduate students enrolled in entrepreneurship classes

2000+
students participated in experiential programs, events and treks

300
businesses started

$151M
in follow-on funding to CFE-supported startups and projects

1300+
faculty trained in commercialization curriculum nationwide

VIEW FROM NORTH CAMPUS

BLOCK BY BLOCK

The popular game Minecraft is good for more than just killing mobs and making diamond swords. It can be used to build entire worlds.

Three Michigan students teamed up with engineering to create this virtual North Campus in the "Michcraft" world – a server created by U-M student Dakota Lambert just for fellow students to collaborate. Seems rather fitting for the real North Campus, a place informally dubbed as the "creative campus" by the folks who spend their time there.

Building this real-life creative community for engineers, artists, musicians, dancers and architects hasn't happened accidentally – it's been strategically designed with the work of all four North Campus deans under the tenure of David C. Munson, Jr., the Robert J. Vlasic Dean of Engineering. The goal? Creating spaces for students to collaborate, and for interdisciplinary work to happen.

Under that ten-year tenure, five buildings and one giant landscaping project have taken bloom. There are more projects on the horizon, including the building of the future Robotics Center and major renovations for nuclear, mechanical, chemical and materials science engineering. With those and plans being pursued for additional student spaces, it looks like North Campus could continue to evolve over the coming years into a hub of creativity.

EXPLORE THE WORLD, UP CLOSE AND PERSONAL

See it's creation (think epic explosions and painstaking sculpting) plus tour the entire campus, in this video.

Find it on YouTube (http://----------)

CRAFTING THE CAMPUS

1: The computer science and engineering building, named the Bob and Betty Beyster Building, was opening as Munson began his first term.

2: Spaces for biomedical collaboration have been added, including the Ann and Robert Lurie Biomedical Building and the North Campus Research Complex (not pictured).

3 & 4: The Robert H. Lurie Nanofabrication Facility (3) and the Center of Excellence in Nano Mechanical Science and Engineering (4) enable state-of-the-art research in nanotechnology.

5: The Phoenix Memorial Laboratory addition has created a collaboration space for nuclear engineering initiatives, which will be facilitated further by the renovation of the Nuclear Engineering Laboratory.

6 & 7: Student spaces to facilitate experiential learning and creative collaboration have sprouted through the creation of the Wilson Student Team Center and Gorguze Family Laboratory.

8. The renovation of the North Campus diag to the Eda U. Gerstacker Grove aims to tie it all together as a dynamic center for North Campus, and destination spot for the community.