

CORNELL'S DUARTERLY AAGAZINE PRING 2015 SPECIAL SESQUICENTENNIAL ISSUE









features

CORNELL IN 2065: 'WHAT I SEE HAPPENING'

We asked faculty, staff and students what Cornell, and their fields, might be like when the university turns 200

Timeline: Key moments from Cornell's first 150 years

CHARTER DAY WEEKEND

April 24-27 will be an on-campus and around-the-globe celebration of Cornell's beginning

CORNELL AT 150

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Looking into the crystal ball: The 1960 predictions of President Malott, who looked 40 years ahead at a future Cornell

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ON THE COVER:

Design by Clive Howard and Christopher J. Kelly of University Communications, University Relations

from the publisher



Here we are: After so many months of preparation and planning by so many Cornellians, we are celebrating our sesquicentennial, with Charter Day Weekend (April 24-27) right around the corner.

Our 150th year has been an exciting one with so many changes, both big and small. I came to Cornell in 2006, just as we announced that David Skorton

would become the university's next president. Today, as we look back at his legacy and appreciate his near-decade of leadership, we also can look forward and see exciting times ahead as we get ready to welcome Elizabeth Garrett as our 13th president.

This year has also been a year of change for Ezra magazine. This is one of those seemingly small changes — but to me, it has been a very important change. The magazine was relaunched with a thematic approach and has, for the past several issues, explored big topics in a deeper way than was possible in the past. We integrated our creative and editorial teams to tell our stories in a more interconnected and impactful way. Our covers became bolder, with the goal of creating provocative images that make you want to look inside. The interior layout is contemporary and more accessible. Each image is carefully considered and selected to tell a story and give the reader a better experience.

This has been a fun year, and we have more changes to come. I thank the thousands (yes, thousands!) of you who sent us feedback when we asked. I was pleased with how positive your comments were, and I look forward to continuing to share the story of Cornell in new and different ways as we move into our 151st year.

Tracy Vosburgh

Associate Vice President, University Communications

University Relations









\$50M Verizon gift

names Cornell Tech executive ed center

A \$50 million gift from Verizon to Cornell Tech will support the Verizon Executive Education Center, Cornell Tech officials announced in February.

The center will be a gathering space for the tech

community and will leverage the campus's impact on technology beyond its degree programs. It will be part of the campus's first phase being built on Roosevelt Island.

"This is a transformative gift that will help enormously to advance our mission of bringing academia and industry together," said Cornell President David

J. Skorton. "The campus will welcome everyone interested in using technology to advance the economy and to make the world a better place, and the Verizon Executive Education Center will be at the center of it."

The gift will facilitate direct collaboration between companies and Cornell Tech students to bring cutting-edge ideas to market. The center's programs and events also will allow Verizon to develop customized programs for its executives and customers.

"Cornell Tech is a place for technology innovators and leaders in New York City and around the world, and we are thrilled that Verizon is joining with us to create an executive education center built to provide novel educational and collaborative

educational and collaborative programs focused on the digital age," said Cornell Tech Dean Daniel Huttenlocher.

Verizon's partnership with Cornell includes philanthropic support and recruitment of students into internships and full-time positions.

"Our donation to Cornell Tech is an investment in the future and fits perfectly with our mission to use

communications technologies to solve big challenges and make people's lives better," said Verizon Chairman and CEO Lowell McAdam '76. "The Verizon Executive Education Center will be a magnet for developers, entrepreneurs, educators and innovators across all industries, building on the great talent and creativity we already have in the tech sector here in New York City."

The Cornell Tech campus will span 12 acres on Roosevelt Island and house approximately 2,000 students and hundreds of faculty and staff.

'OUR DONATION TO CORNELL
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BIG CHALLENGES AND MAKE PEOPLE'S LIVES BETTER.'

Lowell McAdam '76,
 Verizon Chairman and CEO



'Jennie's Will'

staged on campus

Two performances of the musical "Jennie's Will" were staged on campus Feb. 7 and 8, telling the story of Cornell benefactor Jennie McGraw (McGraw Hall, McGraw Tower, the Cornell Chimes) and her controversial 1880 marriage to Cornell's first librarian, scholar Willard Fiske.

The production was commissioned by the town of Dryden in 1997 to celebrate its bicentennial; the music was composed by Mark Simon, DMA '85, with libretto by Pamela Monk. The revival was staged in Barnes Hall by the Cornell Savoyards as part of Cornell's School of Continuing Education and Summer Sessions' celebration of the university's sesquicentennial; a Cornell Chimes concert preceded both performances.

Several Cornell alumni were among the show's company, including "Jennie," played by Karen Dumont,

DVM '02; "Mrs. Fiske," Kristen Park, M.S. '99, who reprised her role from the 1997 production; stage manager Ellie Hobbie '74; and music and orchestra director William Cowdery '73, M.A. '81, Ph.D. '89.

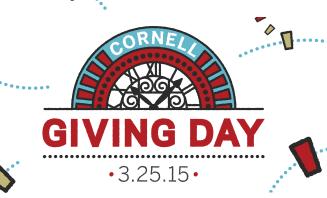
Division of Rare and Manuscript Collections

"What fun to share all the inside Cornell jokes with a savvy crowd," said director Rachel Hockett. "It was a joy to collaborate on an operatic production, and to work with this stunning company of actors and artists, to bring Pamela Monk and Mark Simon's exquisite piece to our community."

What difference did one day make?

Cornell's first-ever giving day — a 24-hour online fundraising sprint conducted March 25 — aimed to be the single biggest day of philanthropic participation in the university's 150-year history. It also introduced friendly competition between colleges and units for various pots of special challenge money.

Ezra went to press before Cornell Giving Day, but you can learn about what amazing things were (and will be) made possible by the power of the crowd joining together to provide support: Visit givingday.cornell.edu or check out #cornellgivingday on Twitter.



2055: 'What I see happening'

// e asked professors, administrative leaders and students: What will Cornell be like, and what will your area of expertise be like, in the year 2065, when the university celebrates its bicentennial?

Pulitzer Prize-winning historian and Vice Provost for International Affairs Fredrik Logevall pointed out, modestly, that historians are not that good at predicting the future. And professor Joe Fetcho reminded us that science, by its very nature, is unpredictable.

But these are Cornellians working at the cutting edge, doing work that is defined by questions like "What if?" and "Is there a better way?" and "What does it mean and why?" They are in the habit of thinking beyond constraints, limitations and the status quo. In short, these are the perfect people to ask about the future of cancer treatment, architecture, music and flying saucers.

We received more responses than we had room to run in this issue — see additional "Cornell Looks Forward" items in this issue of Ezra online, at www.ezramagazine.cornell.edu/spring15/cover.html.

Clockwise from top left: Estomih Mtui, Marjolein van der Meulen, Lorin Warnick and Susanne M. Bruyère



One-size-fits-one medicine Working from work

Marjolein van der Meulen is the James M. and Marsha McCormick Chair of Biomedical Engineering, the Swanson Professor of Biomedical Engineering and a professor in the Sibley School of Mechanical and Aerospace Engineering.

Before biomedical engineering became a fully recognized specialty in engineering with the founding of the Biomedical Engineering Society in 1968, Cornell engineers were already at the leading edge of work at the intersection of engineering, medicine and biology. For example, Cornell engineer Wilson Greatbatch created the world's first practical implantable cardiac

pacemaker in 1958.

As Cornell celebrates its 150th year and the field of biomedical engineering nears its 50th anniversary, one trend I see is the move away from medical devices and toward cellular, organic and biological solutions to health problems. The field of tissue engineering will continue to grow, and these biological solutions may look very different than they do right now, but they are coming.

This move toward cellular treatments is linked closely to another trend that will continue in the next 50 years: personalized medicine. Biomedical engineers will take advantage of the growing ability to query an individual's RNA and DNA at the single-cell level. We will learn how to interpret and synthesize massive amounts of information to design medicines and treatments specifically for particular patients.

The next five decades also will see ever-increasing collaborations between biomedical engineers and researchers in other fields. The White House's BRAIN Initiative is an excellent example of the sort of collaborative efforts that are possible. The ultimate goal of biomedical engineering is to translate our knowledge and understanding into clinical applications. To do this requires collaboration across disciplines - and collaboration is in Cornell's genes.

Susanne M. Bruyère, the ILR School's associate dean of outreach and a professor of disability studies, says, "The challenge will continue to be: How can we educate more effective leaders and managers of people in the workplace? And how can we protect the rights of

the individual worker?"

There will be adjustments to be made, Bruyère anticipates. "And tensions between a more virtual workplace - with flexible hours because people have more complex lives - and the recognition that people need the affiliation of working together, eyeball to eyeball, in teams. With employers having more dispersed teams of people, we could see a pulling back" from the virtual workplace, she predicts.

Beyond a fundamental awareness of diversity, Bruyère says, "We have to change the dialogue, to talk about being inclusive. Inclusion means people are individually valued for the contribution that they make to the organization."

A school such as ILR, with approximately 40 percent international undergraduate and graduate students - and many American-born students provided with opportunities for studying abroad - is an ideal place to learn about the increasingly global workplace, Bruyère believes. "Our students are asking for internships abroad, in private sector workplaces and unions, social enterprises and nonprofits in many, many different countries. We want them to bring back those experiences to enrich the conversation in the classroom."

"We are preparing professionals, whether they are coming from other countries or [are] young Americans, for these kinds of globalized contributions," Bruyère concludes. "We really have a responsibility to prepare a global workforce, and we have that opportunity."

Vice Provost for International Affairs Fred Logevall agrees. "My No. 1 priority in the coming months," he said in January, "is to internationalize the curriculum. We have an obligation to educate global citizens."

- Roger Segelken

High-speed doctors

In the Human Structure and Function class at Weill Cornell Medical College, first-year medical students, who once spent valuable time hunting down anatomical information in libraries and anatomy atlases, now have the Weill Cornell Dissection Manual iPad app at their fingertips.

Without fumbling through books, notes or cards, the students work with cadavers and boost their essential anatomy knowledge more with an iPad, according to **Dr. Estomih Mtui**, professor of anatomy and director of the Gross Anatomy and Body Visualization Program at Weill Cornell. Mtui led a digital initiative that integrated iPad technology with the anatomy curriculum.

"It's made life easier for the medical students, giving them the ability to absorb more information, giving them a better foundation, as they are better trained and better prepared to face the challenges of the future," he says.

After the iPad tablets were incorporated into the curriculum, grades improved eight points, on average, for the first exam in the anatomy class, according to Mtui.

Mtui advocates exporting quality health care around the world and spends each summer teaching anatomy at the Weill Bugando University College of Health Sciences in Mwanza, Tanzania, and Kilimanjaro Christian Medical Centre in Moshi, Tanzania.

With tablet apps on anatomy and other medical topics, students in the United States and abroad can become excellent doctors faster, Mtui says.

In about 25 years, Mtui estimates, the medical education knowledge gap will close between Western and developing countries, learning for health care personnel will become bi-directional, and disease outbreaks like the "catastrophic situation" presented by the recent Ebola virus crisis in western Africa

"It's going to take time, for sure, to significantly close the gap between health care learning in the United States and places like Tanzania," says Mtui. "This technology revolution is moving fast. But it is not fast enough."

- Blaine Friedlander

will be reduced.

Bedrock of vet medicine will remain the same

Lorin Warnick is associate dean and director of the Cornell University Hospital for Animals at the College of Veterinary Medicine.

Veterinary education has come a long way since James Law arrived at Cornell in the 1860s. His state-of-the-art teaching tool was a papier-mâché horse with removable organs. What would Law make of PowerPoint animation?

The veterinary profession also has changed. Today's veterinarians provide clinical care for pets and performance animals, help ensure a safe and plentiful food supply, conduct biomedical research, promote wildlife conservation and work to prevent the transmission of disease from animals to humans. They have equipment and medications that Law could only dream about.

In 50 years, some of today's new faculty will be retiring after teaching generations of students. Veterinarians routinely will use gene-based testing, treatments being developed today and will find innovative solutions to current problems such as drug-resistant pathogens. Scientific and technological advancements will yield improved methods for preventing, diagnosing and treating disease.

However, the bedrock of veterinary education and medicine will remain the same: In-person, hands-on work with animals to protect and promote their health and well-being.

Meditation libraries

Anne R. Kenney is the Carl A. Kroch
University Librarian at Cornell University
Library; Xin Li is the associate
university librarian for central library
operations.

Fifty years from now, we will still need places where people come together, but the spaces may look very different. Cornell's library may still be headquartered in Ithaca, but it will be present in every single place, all

around the world, wherever Cornellians are learning and working and solving problems.

Data about us will be collected around the clock and will affect most of our lives. Education will be completely different; the current model, where all 7-year-olds sit together and learn the same thing at the same pace, will disappear and be replaced by individually tailored experiences for each student.

Libraries could step into the virtual void in that environment – not to provide solutions but to help students be inspired globally, but act deeply personally, in developing their own sense of authority. And libraries have a sacred trust to tailor experiences in a protected space.

We believe wealth and power will be even more unevenly distributed, and that these social inequalities will drive international policy. So our library needs to be an honest broker of information, serving not just Cornellians but those who are disenfranchised.

The library can provide the sense of a cultural and residential experience, the opposite of dispassionate distance. For example, how great would it be for the library to re-create a medieval city, drawing on textual evidence, visual resources, the laws of physics and engineering? You could immerse yourself in what life would have been like.

There will be a huge desire to go retro, because at some point you'll want to know what things are or were like physically; otherwise we'd all feel more and more like robots. Libraries can fill that void. We believe they will remain places for reflection and deep concentration. There will be precious few places for that kind of reflection – neutral places that have no agenda, that aren't mining you for data. There's a kind of brainrobbing that goes with collecting and linking data for profit; libraries need to resist that, and we think we will.

Staying connected with big data

The platforms through which we communicate, store and share information, and create and consume media are becoming inseparable, according to **Mor Naaman**, an entrepreneur who co-founded Seen.co and is an associate professor at Cornell Tech, where he directs the Connective Media program for the Jacobs Technion-Cornell Institute.

Naaman foresees a future where big data will continue

to balloon and new technologies will enable individuals and communities to access and integrate this overabundance of information in day-to-day affairs.

Imagine, for example, a scenario where it's the norm for people to be sharing their physical location and other personal information at all times, perhaps because technology exists that allows them to do it in a privacy-and battery-preserving manner. "Among other things, we will be able to model and predict traffic much better than we can now," says Naaman. In cities like New York, where density will be an even more urgent issue, he predicts data science and connective media will help control the spread of illnesses and help optimize services, from public health to park maintenance.

Naaman points out that technological advances will need to be regulated and tempered by policies, safeguards and a deeper understanding of "the human and social aspects of technology."

Glimpsing an era where everyone is even more widely connected to anyone and anything, he poses a question that is at the heart of his research and teaching: "How can we use these new technologies to improve our ties to the people that matter to us – not to everyone out there – but to our friends, our family, our neighbors?"

- Jose Beduya

Fantasy recruitment

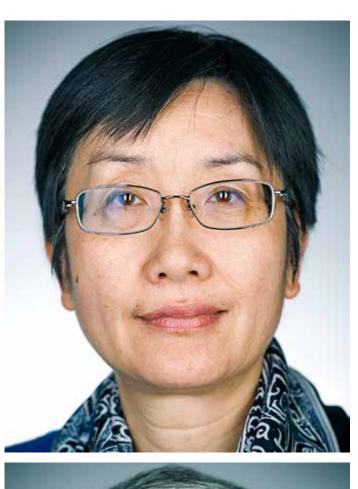
Andy Noel is Cornell's Meakem Smith Director of Athletics and Physical Education.

For all of humankind, competition has been one of the greatest forms of communication. In half a century, as people continue to tether themselves to their digital footprint, athletics will separate itself as one of the key areas in which humanity will be united in a meaningful way.

The NCAA's shift toward autonomy for its major conference schools allows them to play by rules that often deviate from the traditional model of collegiate amateurism. Cornell, and its partnership with the Ivy League, will assure that our student-athletes will still compete at the highest levels without sacrificing the ideals of sport within the context of collegiate education.

Over the next many decades, there are plans for central campus to expand Cornell's Ithaca footprint. The future may include the creation of a "varsity village" that will

Clockwise from top left: Xin Li, Mor Naaman, Wendy Wolford and Andy Noel









accommodate a desire to populate central campus with additional state-of-the-art academic facilities. Innovations in equipment and sports medicine will continue to make athletics safer for its participants.

Technological advances, like virtual reality,

will likely bring prospective studentathletes to campus. Seated in their own living rooms, prospects and their parents will be able to feel the chill of the ice while their classmates chant in Lynah Rink, experience the football team marching to Schoellkopf on game day (led by the Cornell Marching Band) and experience a last-second, three-point shot for a win as part of Newman Nation.

What can be assured is that whatever collegiate athletics has become when the university celebrates its bicentennial, Cornell will be at the forefront of empowering student-athletes in the classroom and in the arena.

Too close to call

Wendy Wolford is the Robert A. and Ruth E. Polson Professor of Development Sociology and is faculty director for economic development programs at Cornell's Atkinson Center for a Sustainable Future.

Charles Dickens said it best: It is the best of times, it is the worst of times. Perhaps never before has the field of economic development seemed to hold so much potential for growing new economies, healthy citizens and responsive, democratic societies – the best of times – while being fraught with growing inequality, environmental degradation, human deprivation and social unrest – the worst of times.

Over the next 50 years, it will become clear whether the best we can do is enough to address

the worst of what we have done. We

have no real precedent for this: the field of economic development

has always been the study of the past, where developed countries like England were held up as examples for developing countries to follow. But the next five decades will see new issues and actors, ones that seem to have no exact historical parallel, like the rise of China, climate change, transnational civil

society, mass species extinction and widespread resource degradation.

China and the rest of the emerging economies (Brazil, Russia, India and South Africa) are reshaping the international agenda through what is optimistically called "South-South Development," where emerging countries partner with developing ones to transfer knowledge and experience. Climate change requires new strategies in rich and poor nations alike, ones

that address both overconsumption and poverty. At the same time, transnational civil society, from international nongovernmental organizations to farmers' movements and Twitter followers, will play an increasingly visible role. The rapid loss of species in the Anthropocene (the first geological era dominated by human activity) will require this transnational coordination if whole ecosystems and

'Over the next 50 years, it will become clear whether the best we can do is enough to address the worst of what we have done.'

yaruta/iStock

- Wendy Wolford

Key Moments From Cornell University's First **150 Years**

On the occasion of Cornell's sesquicentennial, we look back at our history even as we look toward our future. On the following pages are highlights and historical moments, stretching from even before Cornell University's founding to the present day.

Explore the full set of nearly 600 historical facts and events online at the sesquicentennial timeline at 150.cornell.edu.

April 27, 1865

Comell Charter signed into law, founding the university as the landgrant institution for New York

Oct. 7, 1868

Original set of nine bells of the Cornell Chimes ring for the first time at opening ceremonies

July 2, 1862

U.S. Morrill Land Grant Act Enacted 1866

Morrill and White Halls built Oct. 7, 1868

Cornell University opens, welcoming 26 professors and 412 students populations are not to be lost.

Finally, the question of whether or not the next 50 years of development are sustainable is, not surprisingly, the most pressing issue for the future. The next 50 years will be pivotal in determining whether we see the best of times or the worst: Whether development can generate fertile land, clean water, living forests and renewable energy, or leads to increasing exclusion and war over limited resources. At the very least, there is still a choice.

Agricultural balancing act

"As a plant breeder, I feel the looming challenges for our discipline are huge," says Margaret Smith, professor of plant breeding and genetics.

Challenges include a growing world population that will require farmers to produce as much food in the next 50 years as has been produced in the entire history of settled agriculture, says Smith. She researches sweet and field corn breeding to develop new varieties for farms in New York state and internationally.

She also seeks to enhance understanding of corn adaptation to marginal environments.

When Smith looks into the crystal ball of her research area, she envisions a world that will require more nutritious food grown on limited arable land. That finite amount of land must also bear the burdens of soil degradation and increased meat production, as populations become more affluent, creating shifts in dietary patterns that include more animal protein.

"Demands [for food on limited land] will go up rapidly, and as if that's not enough, we have to lump climate change onto it," she says.

Shifts in climate patterns pose risks for unpredictable rainfall in the U.S. corn belt, where four states produce a quarter of the world's corn, Smith says. And countries across the developing world, including those in sub-Saharan Africa, will have greater stressors from projected high temperatures and drought.

"The discipline of plant breeding will need to be alert to being as efficient as we possibly can," Smith says.

She advocates using traditional breeding methods to create new populations of plants that tolerate modern stressors, and then use the tools of genetics to evaluate how adaptations occur.

- Krishna Ramanujan

Scare tactics will get less scary

Instead of "Ebola hits New York," the risk-savvy headline should have been "Texting while driving kills New Yorkers."

> Katherine McComas, department chair of communication in the College of Agriculture and Life Sciences, is realitysavvy enough to know what kinds of information drive the media world – and what that landscape might look like in the future.

"The risk of catching Ebola as we go about our daily lives," McComas says, "is just about zero - yet people don't always pay attention to what the scientists think are the most dangerous things; they fixate on others that have much less likelihood of happening to them."

That's too bad for the general public in an increasingly perilous world, but McComas and her Cornell colleagues in the social sciences have moved beyond that perception glitch to explore the deficit of trust in what's becoming the Too Much Information Age.

"We have to move past a knowledge-only paradigm - this

1871

College of Architecture established. becoming the first four-year architecture school in the U.S.

1875

Sage Chapel opens (architect: Rev. Charles Babcock, professor of architecture, 1871-1913)

1890

George Washington Fields, a former slave, becomes Cornell's first African-American law graduate

March 21, 1894

State legislature charters New York State Veterinary College

March 17, 1901

Architecture students, enacting Willard Straight's recommendation, stage first "Dragon Day"

May 1873

Emma Sheffield Eastman becomes the first woman to graduate from Cornell

1876

Outdoor electric lights shine on campus, powered by the first U.S. gramme dynamo

1891

University Library dedicated

April 14, 1898

Cornell's Medical College founded in New York City

belief that if people just knew the risks then they would act the way we think they should – because people in their day-to-day lives have to make decisions on so many things; [it's] a field of messages from so many different sources. One of the things they're going to base a decision on is: 'Can I trust the person who's talking to me? Can I trust in the process?'"

She cites two areas of research where Cornell is thoroughly engaged and nonscientists

frequently question the process: Climate change and genetically modified foods.

Here at Cornell, McComas says, "there is a genuine effort to try and understand these wicked problems" that will challenge humanity throughout the 21st century. "This is where the transformational research will happen."

- Roger Segelken

diversification to buffer market fluctuations, smaller energy sources that are spaced out from each other "will make the system more robust," Anderson says.

These same principles of decentralization and distribution apply to low-carbon, renewable energy sources such as wind farms. For example, a large wind farm gets in trouble when winds die down, but if many,

smaller wind farms are spread out over a larger

area, there is more diversity and resilience built into the system, she explains.

"I don't think we can ever replace fossil fuels completely," Anderson says. "But I would hope to get to 50 percent" of energy needs met by solar, wind and geothermal, for example, in 50 years.

Solving our energy issues will require improvements in math, computational power and speed, environmental,

electrical and mechanical engineering, and policy. "It's an interdisciplinary problem," she says.

- Krishna Ramanujan

Power up locally

In 50 years, people can expect that renewable energy sources will be better integrated with traditional power sources and energy systems will become less centralized, says **C. Lindsay Anderson**, assistant professor in the Department of Biological and Environmental Engineering.

Anderson, the Norman R. Scott Sesquicentennial Faculty Fellow, researches how to improve integration of renewable energy into existing power systems.

Currently, the U.S. has huge centralized power sources that distribute energy to residences and commercial interests and serve entire regions of the country. But Anderson predicts that the U.S. will move to smaller sources that are geographically distributed and serve smaller areas.

Much like how financial investors recommend portfolio

Buildings as organisms

"The future of architecture, paradoxically, is in its past," says assistant professor of architecture **Aleksandr Mergold**. "Not in the nostalgic reference to the older built forms, but in the radical change in design thinking, driven by necessity in favor of adaptive reuse, re- and up-cycling, creative and radical reappropriation of old materials, technologies and ideas in the face of adverse climate and scant resources.

"The future of architecture is in the pursuit of resiliency, and it will require all the tools available to us. The future is in the understanding that we are a part of a continuum much grander than we can observe on our personal horizons of history and the future," Mergold says.

1904

New York State College of Agriculture established by Legislature with Liberty Hyde Bailey as first dean

1910

First fruit trees planted at Cornell Orchards

June 12, 1919

Statue of Ezra Cornell unveiled on the Arts Quad

1922

Classes begin in four-year hotel management program in the Department of Home Economics

Nov. 18, 1925

Willard Straight Hall, one of the country's first student unions, opens; it is a memorial to Willard Straight, Class of 1901

Dec. 4, 1906

Seven undergraduates, known as "The Seven Jewels," found Alpha Phi Alpha African-American fraternity

Sept. 28, 1915

Cornell defeats Gettysburg 13-0 in first football game on Schoellkopf Field

1921

College of Engineering established, unifying mechanical and civil engineering

1925

New York State Legislature establishes the College of Home Economics, the first such state-chartered college in U.S.

"Buildings in the U.S. account for nearly 40 percent of total national energy consumption," assistant professor of architecture **Jenny Sabin** says. "Most contemporary sustainable approaches to the problem offer technological solutions through sanctioned rating systems. These measures adequately address issues of resource consumption in buildings, [but] do not address the systemic ecology of the built

environment over the long term. How might we rethink our conceptual approach toward the problem?

"A developing field in architecture – matter design computation – places emphasis upon adaptive architecture and programmable matter. In 50 years, buildings will behave like organisms in their built environments. ... Like the cells in our bodies, sensors and imagers will learn and adapt, making materials not only smart, but also aware, sensate and beautiful. We will be able to tune our spaces, to personalize architecture.

"Architecture as we know it will change, but the role of the architect will become ever pressing."

- Daniel Aloi

Goodbye, tray. Hello, conscious eating

Campus dining of the past included trays, mystery meat and few options from your residence hall's kitchen.

Campus dining of the future might look more like restaurants serving super healthy choices made from ingredients grown on campus.

And there might not be a tray in sight.

"People will bring their own flatware to cafes the way

many people now bring mugs for coffee," says **Jane**Mt. Pleasant, associate professor of horticulture and a member of the food focus group of the President's Sustainable Campus Committee.

"Everyone on campus will have an understanding of what it means to be an environmentally conscious eater," she says.

Tray-free dining, already in effect at Robert Purcell and North Star,

Cornell's two biggest all-youcare-to-eat facilities, saves on resources to clean trays and prevents wasted food – two key steps toward making dining at a large university sustainable.

Increased sustainability –
using limited resources to feed
a large campus efficiently and
effectively – is the future of campus

dining, says **Steven Miller**, executive chef of Cornell Dining.

"Cornell Dining is a beacon for many other dining services." Miller says, because it uses fresh ingredients from local sources, some of them on Cornell land.

Miller would like to increase this partnership in the future. Cornell Dining pays market price for sweet corn, potatoes, squash, onions, peppers and other crops. In the summer, the only vegetable that does not come from local or campus ("hyper-local") sources is lettuce.

Cornell composts 1 million pounds of postconsumer food scraps every year, another major step toward sustainability.

Brian Wansink, the John Dyson Professor of Consumer Behavior, and his team at the Cornell Food and Brand Lab are working with engineers at Google to develop an app (currently in prototype) that will create a calorie count based on a photo of your meal.

1929

December 1936

1942

September 1946

University Christian Association changes its name to Cornell United Religious Work to include all religious communities Professor Peter J.W. Debye receives Nobel Prize in chemistry; he is Cornell's first Nobel science laureate Cornell's support of World War II includes major military presence on campus, the Army Specialized Training Program, the Navy V-12 program and Army ROTC School of Business and Public Administration opens, offering business programs to graduate students

May 23, 1931

April 27, 1940

1945 Legislature es

WWI War Memorial dedicated between Lyon and McFadden halls, honoring the 265 Comellians who died in the war Professor Carl Becker delivers "The Cornell Tradition: Freedom and Responsibility" address in honor of university's 75th anniversary New York State Legislature establishes School of Industrial and Labor Relations

Highly customizable food is the future of dining, Wansink says. The more a person is involved in creating her meal, the more she has a sense of ownership, and the more healthy choices she makes.

Future dining is healthy dining and healthy dining is within reach, says Wansink: "Make salad as enticing as BBQ pizza," he says, "and people will eat salad."

- Kate Klein

The braineverything barrier

Joe Fetcho is a professor in and associate chair of the Department of Neurobiology and Behavior.

I was once asked early in my career, when interviewing for a faculty job, where my research program would be 10 years forward. My answer was that it was not predictable and, if it were, I would have a colossally boring career, with minimal scientific contributions. Scientific discovery by definition is not predictable, but discoveries are what determine the trajectory of scientists and of the field.

I can't predict in any specific way where the field of neuroscience will be in 50 years. What I can say, with confidence, is that the discoveries that drive our understanding of the brain, one of the most fundamental and still most mysterious inventions of evolution, will come at the interfaces

between disciplines including physics, chemistry, engineering, computational sciences, mathematics and humanities, along with the more conventional biologically oriented disciplines. I expect that the already-fuzzy boundaries between these areas will dissolve further. This is essential if we are to move toward building the tools that allow us to explore the brain, interpret massive

streams of data collected from it, and place

that evidence in the context of the behavior of humans and other

animals. This is what it will take to reveal what makes us who we are and to understand ourselves well enough to fix the increasing number of broken brains.

Cornell's interdisciplinary

tradition and excellence
places us in a special position
to contribute to the goal of
understanding the mysterious
lump of cells that governs
how we think and feel. The
trajectory toward that goal is
unknowable, but I think it will
require a dissolution of traditional
academic boundaries and
training that will change the
character of universities in the
coming decades.

'This is what it will take to reveal what makes us who we are and to understand ourselves well enough to fix the increasing number

of broken brains.'

- Joe Fetcho

Targeting cancer precisely

In 2014, doctors diagnosed an estimated 1,665,540 new cancer cases in the United States, with about 1,600 people dying each day, or 585,720 cancer deaths last year. Among all causes of

death, cancer remains number two, and accounts for one death in every four.

Oncologist **Dr. Himisha Beltran**, assistant professor of

Nov. 10, 1951

Cornell Big Red football stomps Michigan's Wolverines, the defending Big 10 Conference and Rose Bowl champions, 20-7, in front of 35,300 fans, the largest crowd in Schoellkopf Field history

1965

The Committee on Special Educational Projects (COSEP) is established by President James Perkins to attract and support African-American students

December 1965

Physicist Richard Feynman shares Nobel Prize in physics for his work in quantum electrodynamics

1954

School of Hotel Administration established

1958

Student protests on campus defeat proposed additional restrictions on social life and special rules for female students

1965

Cornell celebrates its centennial at Lincoln Center with a series of concerts

1967

Wilson Synchrotron opens below ground as the world's largest particle accelerator



Top row, from left: C. Lindsay Anderson, Aleksandr Mergold and Susan Murphy. Second row: Anne Kenney, Himisha Beltran, Katherine McComas and Margaret Smith. Third row: Kent Hubbell, Todd Cowen, Joe Fetcho and Steven Miller. Fourth row: Jenny Sabin, Brian Wansink, Mason Peck and Corinna Loeckenhoff. Bottom row: Jane Mt. Pleasant, Travis Apgar and Thomas J. Campanella.

December 1967

Hans Bethe, the John Wendell Anderson Professor of Physics, wins Nobel Prize in physics for his contributions to the theory of nuclear reactions

March 18, 1967

Big Red men's hockey team, playing in its first Frozen Four, wins its first NCAA title

April 19, 1969

Members of the Afro-American Society occupy Willard Straight Hall for 36 hours, protesting perceived racism; the takeover receives national attention Oct. 2, 1969

Center for Afro-American Studies opens medicine at Weill Cornell Medical College, believes that over the next few decades, those statistics will improve, thanks to a better understanding of cancer biology and genetics and its role in the disease.

With more information available, Beltran says that within a decade, there will be continued development of new

targeted therapies, allowing doctors to treat cancer more effectively.

Beltran works with a team of doctors and scientists at the new Institute for Precision Medicine at Weill Cornell to understand how genetic alterations across many cancer types influence patient response to cancer therapies.

"Beyond chemotherapy and radiation, we ask, 'Are there molecular therapies?' We are trying to match the best therapy and the right, precise medicine for the patient based on their cancer's underlying molecular alterations," Beltran says.

Beltran conducts research on an aggressive type of prostate cancer, neuroendocrine prostate cancer. In research led by Beltran and her colleagues, a molecular target for neuroendocrine prostate cancer was found and currently is being tested in clinical trials.

A half-century from now, she predicts there will be more nonchemotherapy strategies, more molecular-based approaches and less unnecessary treatment.

Looking toward that 50-year mark, Beltran said: "We'll see more patients surviving cancer, if not find that it's been cured."

- Blaine Friedlander

Not just older, but wiser

Corinna Loeckenhoff is an associate professor of human development and a gerontologist whose research focus is in health care choices.

A few decades down the road, patients may not only

ponder the best treatments for life-limiting conditions, but also consider interventions to substantially extend their life spans. But even if 120 becomes the new 80 and someone discovers the ultimate wrinkle treatment, gerontology will not become obsolete.

Only recently, the field has moved beyond an emphasis on age-related mental and physical decline to consider the role of other factors such

as accumulating life experience or the awareness of passing time. Such mechanisms are likely to drive agerelated shifts in the way we think, feel and relate to others, no matter how long and healthy our lives one

When I teach classes in gerontology,
I jokingly tell my students that they
should listen well, because by the time
they're at the tops of their careers, I will be

old. I can only hope that by then, the people in charge have a good understanding of aging.

day become.

'I jokingly tell my students that they should listen well because by the time they're at the tops of their careers, I will be old.'

- CORINNA LOECKENHOFF

Greek life: Changing faces

Student demographics and changing modes of learning will have an effect on the future of Greek life at Cornell and elsewhere, says **Travis Apgar**, the Robert G. Engel

March 21, 1970

Men's hockey claims its second NCAA crown after the only unbeaten, untied national championship season in NCAA hockey history

1972

The Women's Studies Program is founded, one of the earliest of its kind in the country

Sept. 28, 1980

"Cosmos: A Personal Journey," a 13-part PBS science series hosted and co-written by Cornell astronomer and astrophysicist Carl Sagan, debuts

June 2, 1971

In the first-ever NCAA lacrosse tournament, Big Red lacrosse beats Maryland, 12-6, to win its first NCAA title

May 23, 1973

The Herbert F. Johnson Art Museum, designed by I.M. Pei & Partners, opens

December 1981

Professor Roald Hoffmann shares the Nobel Prize in chemistry for theories concerning the course of chemical reactions Associate Dean of Students.

"I have to imagine that, in many ways, fraternities and sororities will look similar [to today] - in the sense that I think that many of them will still have a housing component," Apgar says. "But if we look at the trends of what's happening in higher ed in general, you can imagine that there won't be as much need for

housing in 50 years - there is a possibility that more people will utilize online instruction."

On campus, he says, "I think the experience may be very different, however, because of the type of student that will end up here, and at most colleges - literally, the face of our students will change over 50 years' time.

"The demographics will change drastically. We live in an age now where there are more women attending than men - 50 years ago, that wasn't the case. Fifty years from now, it's likely that we will have more people of Hispanic or Latin descent, and many other ethnicities and races. And their interests likely will be different.

"This means that the organizations will have to change in order to be relevant."

Greek organizations that in the beginning were devoted to "educational and academic achievement, literary societies, law societies - these organizations will go back to their core roots," Apgar says. "There will be a resurgence of focus on why they were founded."

Recent measures to eliminate pledging and hazing, and changes in policy at national organizations led by alumni, are spurring this return to founding ideals, Apgar says.

– Daniel Aloi

Environmentalists as happy as clams

Todd Cowen is a professor of civil and environmental engineering and the faculty director for energy at Cornell's Atkinson Center for a Sustainable Future. He was also part of the Climate Action Plan Acceleration Working Group that recommended the Cornell campus become carbon neutral by 2035 - an acceleration of the 2050 goal President Skorton signed eight years ago.

"My hope is that by 2065, we will have generations of Cornell graduates for whom it is normal to be living on a carbon-neutral campus and in a carbon-neutral world, and [to have been] raised in a carbon-neutral household," Cowen says. "And that Cornell was instrumental in setting that path because we were one of the first major institutions to make that commitment and get there."

Cowen, who researches the kinetic energy of fluids and the design of wind turbine systems, says work in this area in coming decades likely will involve bio-inspired positioning of wind turbine farms.

Learning from the way nature is able to harness energy will inform better design of renewable energy systems, he says.

For example, beds of clams living on coastal mud flats have unequal access to nutrient-rich water - the clams located near the edges of the patch get the best-quality water first. So clams in the middle of those densely populated patches rely on the natural turbulence in the water above to mix food down into their area, and the design of the clam bed itself actually enhances that turbulence. "So they don't have to totally rely on nature to mix that food down to the middle of the patch," he says.

Cowen is using that inspiration in learning how to best

December 1982

Kenneth Wilson, professor of physics and nuclear studies receives Nobel Prize in physics

1988

Professor and plant breeder Susan McCouch publishes the first molecular map of the rice genome

Aug. 24, 1992

Carl A. Kroch Library opens

December 1996

David M. Lee, professor of physics; Douglas D. Osheroff, Ph.D. '73; and Robert C. Richardson, professor of physics share Nobel Prize in physics for discovery of superfluidity in helium-3

1985

1991

1993

April 30, 1998

Medical college in New York City named for Joan and Sanford I. Weill with \$100 million gift

locate turbines in a wind farm array, or, for tidal energy, a hydrokinetic array.

"If you go out to Nebraska or Colorado, you'll see pretty regular grids of wind turbines on flat planes. And that works fine," he says. "But it turns out that there are probably better ways to do it that would

let you put those turbines closer together, use less land space and decrease your costs."

Cowen says that his research group is one of the first to be looking at bio-inspiration for designing systems like this, and that what they learn will improve how they work on both large and small scales. "I can imagine putting small grids like this on the tops of buildings or across the avenues in New York City or

Chicago," he says. "As the winds funnel up and down, why not grab that energy and harness it for individual buildings right there?"

- Joe Wilensky

Hubbell, who was a freshman in 1963, is confident that in another 50 years, "Cornell will still be Cornell. If we looked around there will be a lot that will be familiar. And if you talked to the students of that time you will hear many of the same things that you hear now."

more fluid educational experience."

'My personal dream is that we have a more residential campus.'

- KENT HUBBELL

Both say they favor having all freshmen and sophomores live on campus.

"My personal dream is that we have a more residential campus - that we house more of our students, and, in doing so, we support [them] more effectively," Hubbell says. "The first-year living experience on North Campus has been an unequivocal success. Students think fondly of that first year on campus." Requiring students to live on campus can "level

the experience," he adds, with fewer apparent disparities of race, class and income.

Both also support the expansion of mixed-gender Greek chapters in the system, and Hubbell says that "more house scholars and house mentors would enrich the experience for fraternities and sororities."

"I am a supporter of small residential communities," such as co-ops and program houses, Hubbell says. "They break down a great big anonymous campus into bitesized pieces for our students."

Changing demographics also will affect the student experience.

"We will see a population shift, an increase in the international community, and we'll be more ethnically diverse," Murphy says. "In this year's first-year class, only 40 percent are Caucasian. Fifty years ago, the female population was maybe a quarter of students - now it is 51 percent."

And while Murphy notes that in 2065 many graduate students may "only know Cornell through distance-

Residential life in 50 years

Dean of Students Kent Hubbell '67, B.Arch. '69, and Vice President for Student and Academic Services Susan Murphy '73, Ph.D. '94, have seen incredible changes at Cornell in the decades since they were students. But despite growth in distance learning, offcampus housing construction and a new tech campus in New York City, they believe that a residential campus will remain vital to the undergraduate experience 50 years from now.

"I would suspect there will be much more flexibility of students coming and going," Murphy says. "They may be able to start some of their Cornell experience away [from campus]; they may, when they go away, be able to stay more connected academically - so I think it will be a

January 2001

Cornell establishes Weill Cornell Medical College-Qatar in Doha; first American medical school overseas

August 2009

Flora Rose House opens, completes West Campus House System

Dec. 19, 2011

Cornell wins bid for NYC tech campus following \$350 million gift from Charles Feeney '56

2013

Cornell Dairy reopens in renovated Stocking Hall

2004

Mars Rovers Spirit and Opportunity land on Mars; astronomy professor Steven Squyres is principal science investigator on both missions; rovers carry many Cornell-designed and -built instruments

Oct. 28, 2010

David Atkinson '60 and his wife, Patricia, give \$80 million to create Atkinson Center for a Sustainable Future

2013

First day of classes for Cornell Tech graduate students, held in donated space in Manhattan

based education," there should be no worry that Cornell is going anywhere.

"The heart of campus will remain in Ithaca," she says.

– Daniel Aloi

Finally, your own spacecraft

Mason Peck is an associate professor of mechanical and aerospace engineering who served as NASA's chief technologist from January 2012 to December 2013.

By the mid-21st century, innovations in flight beyond the Earth will form the core of aerospace research. Entrepreneurial space companies are building rockets, Earthobservation satellites, satelliteservicing platforms and asteroidmining robots. There are private plans to send people into orbit. to the moon, and to Mars in the coming decade, most of which will happen with the support of venture capital.

At the same time, NASA has sponsored development of new technologies to push the boundaries of science and

exploration. It's now commonplace for students at universities (and even some in high schools) to build small satellites. Members of the so-called Maker community are passionately taking ownership of technology development, and we find that using 3-D printers and other additive-manufacturing technologies can accelerate putting hardware into orbit.

In the coming decades aeronautics will embrace consumer electronics paradigms to reject the old principles that drive cost and schedule for space systems. Fifty years from now, academic research will personalize exploration with small spacecraft, vehicles built in orbit and on other planetary bodies.

> Aerospace research will change the face of our planet and beyond, enabling robotic and human spaceflight, all thanks to innovations underway

right now.

That research will focus on the use of in-space resources such as regolith [loose rocky material] and water from the moon and asteroids - to build exploration infrastructure across

the solar system. Aerospace will remain a fundamentally multidisciplinary field, and its impact on our daily lives will continue to grow, as more of us travel to Earth

orbit and beyond.



- MASON PECK

Hospitality sprawl

The hospitality industry is dynamic, evolving and intricately interwoven with numerous other industries. But what makes it a rich space for careers and academic study also makes its long-term trajectory tricky to extrapolate.

Rohit Verma, the Singapore Tourism Board Distinguished Professor in Asian Hospitality Management, professor of services operations management at the School of Hotel Administration and co-director of the biennial Cornell Hospitality Research Summit, offers five projections based on his hospitality research and interaction with industry:

April 15, 2013

Fredrik Logevall, professor of international studies, wins Pulitzer Prize in history

Sept. 13, 2014

Sesquicentennial begins in the Big Apple with Lincoln Center extravaganza, hosted by university's Sesquicentennial Committee and Alumni Affairs and Development

March 2013

Cornell launches four massive open online courses (MOOCs)

2014

Library celebrates its eight millionth volume, a Civil War photograph album

Oct. 17, 2014

Sesquicentennial celebrations begin in Ithaca during Homecoming Weekend

Charter Day Weekend

April 24-27, 2015

Cornell's signature sesquicentennial event in Ithaca will begin with a community celebration and will include performances, discussions, readings and a ceremony to commemorate the signing of the university charter.

"We won't have a regional hospitality industry; everything will be global," he says. "We are already seeing the trend. Companies from all parts of the world will have operations in all parts of the world." He foresees similar trends in space tourism, as exemplified by SpaceX and other companies making similar plans. Regional compartmentalization isn't adaptive, he says, when the new frontier is, perhaps, the moon.

Verma predicts, "We won't have an industry that we call the hospitality industry" in the traditional sense. "It will be part of health care, part of retail, part of manufactured goods and so on."

"Traditionally, [hospitality] has been about humans delivering service to other humans," Verma says. "But we're seeing evolution of more technology-based service, and service will increasingly have a huge technology component ... Months in advance of people coming to a hotel, they will use technology to do things like take a virtual tour, and digital media factors ever more heavily into the post-service experience."

"Right now, we are seeing new stages of the 'sharing economy,' like Airbnb," Verma explains. "In 25 to 50 years, this sharing economy will become a big, dominant sector of the industry. People will be looking for far more personalized options."

Cornell and other high-ranking institutions will adapt with industry, he predicts. "I think there are already indications that the generalist degrees and education programs will be less in demand, whereas more specialized knowledge and skills will be highly in demand, because everything will become more specialized."

- Mike Webb

Smart law

Thomas R. Bruce is the director of Cornell Law School's Legal Information Institute (LII), which since 1992 has provided online, open access to the laws that govern us. About 29 million unique visitors a year from 240 countries and territories use the LII website.

The LII's mission is to help people find and understand the law. The technical challenges of finding those laws – so prominent when we started 20 years ago – are melting away, unevenly. So unevenly, in fact, that I bet that 50 years from now we will still be helping people somewhere in the world obtain the level of access to legal information that people in many Western democracies have now.

But simply making law available is not enough. Understanding is a stiffer challenge. Right now, we communicate the text of laws but we convey little about procedure. It's as though we publish a ranked list of poker hands, but say nothing about the rules of dealing or betting. Conveying the full panorama of the legal process to those who are or might be involved with it is an obvious next step.

In 50 years I hope that we will be working on – maybe we will have solved – the vast problems involved in presenting the law, via whatever technologies we then have, in a way that embraces the full context of economics, politics and social trends. By then we should be building systems that can respond to questions like, "What unforeseen legal risks are embedded in my business plan?" or "Why have no bankers gone to jail for the events of 2008?" with answers that comprehend not only the scaffolding of primary law involved but integrate those materials with the legal, economic, social and political perspectives that are tied to them. We'll be presenting the user with an integrated, explanatory view.

We have spent more than 20 years making the law available, with computers and the Internet as our best tools. Right now we can disseminate the law that's in the books. Disseminating law in action, in full context, seems to me a five-decade challenge.

The cure(s) to obesity

Ling Qi, associate professor of nutritional sciences, is doing groundbreaking work to understand how fat cells develop and act in the body.

In 1990, about 10 percent of the adult U.S. population was obese. Today, roughly two-thirds of U.S. adults are overweight or obese; even more alarming is the rising prevalence of obesity in children and the elderly. Obesity is in large part responsible for a dramatic increase in type-2 diabetes and other chronic diseases. Bringing these problems under control will take a concerted, global effort across many disciplines.

A few decades down the road, Qi says: Humans will have a much better understanding of

Clockwise from top left: Rohit Verma, Maureen O'Hara, Ling Qi and Thomas R. Bruce



disease-causing genetic mutations for many disorders. The latter will remain a focus of basic research scientists;

Gastric bypass will have become the best approach to curing obesity-associated complications;

Scientists will have developed pills that effectively keep obese people "metabolically healthy"; and

Type-2 diabetes will no longer be a prevalent disease in aging populations.

Qi's laboratory is working to determine the effects of protein folding, misfolding and aggregation in various cell types involved in metabolism, as well as pathogenesis of obesity and type-2 diabetes.

Working with biochemists, cell biologists, chemists, nutritionists

and food scientists, Qi hopes the coming years will establish research paradigms in these areas, as well as lead to novel

paradigms in these areas, as well as lead to novel therapeutic strategies for targeting protein folding and secretion.

– Anne Iu

Transparent markets

Markets have become increasingly fragmented, says **Maureen O'Hara**, the Robert W. Purcell Professor of Management and professor of finance at the Samuel Curtis Johnson Graduate School of Management. U.S. stocks once traded on either NYSE or Nasdaq, but trades now take place in virtual and physical exchanges worldwide.

O'Hara is an expert on market microstructure, and her recent research has focused on high-frequency trading.

"In the old days on the stock exchange floor, there were hundreds of people milling around. Now there are far fewer, and most of them are reporters," she says. "We have 13 physical equity exchanges, and more than 50 places altogether where you can trade equities."

In the decades ahead, there will be more virtual exchanges and fewer people working in and with them, O'Hara says.

High-frequency trading, where traders use complex algorithms to analyze markets and execute orders at very fast speeds, will lose its distinctiveness because technology gives everyone in the market the same speed and latency. Yet the pressure to execute more quickly than competitors will remain.

"Even 50 years from now, when we are trading at the speed of light, someone will be faster," O'Hara says.

Markets have innovated with the power of technology, yet regulatory structures lag

behind. This is leading to a period where changes in markets will

slow while regulatory structures

increase significantly. This process is beginning to affect bond markets; the result is a bond market that's not transparent in which it's difficult for traders to know if they are getting a good price.

"Regulators have indicated that this is the area that will be changing dramatically," O'Hara says. "That's all for the best – there's nothing to be gained

from not moving to a more transparent bond-trading system."

- Shannon Dortch

Giant cities

Susan Christopherson, professor and chair of city and regional planning (CRP), points out that there will be more cities, bigger cities, and that a larger percentage of us will live in cities. "Of the projected 41 megacities over 10 million, 13 will be over 20 million in size. Many of these megacities will grow in Asia and Africa and will be places of profound poverty, struggling to provide health services and education as well as water, sanitation and transportation infrastructure. They will also be places of creativity and human resilience."

CRP associate professor **Thomas J. Campanella** says that "prevailing trends bode good and ill for cities over the next half-century." Older city centers in the United States will continue to have new value, "as educated elites at both ends of the life spectrum flock there – the young seeking local grit and 'authenticity' to counter the anomie of globalized mass culture; the old seeking culturally rich communities in which to retire and 'age in place."

A walkable city "is a scarce commodity in our sprawledout nation," Campanella says. "In time, the trend back to the city will pay huge environmental dividends by reducing automobile use and encouraging investment in public transit. Its pace will only accelerate as millennials enter the workforce."

On the downside, he notes, "rising demand will force property values through the roof in places like Brooklyn and San Francisco, and eventually extend to cities and neighborhoods far off the radar

of urban chic. Gentrification of the core will create a new geography of race and class in America. As the poor are forced outward to declining first-ring suburbs, the prevailing pattern of suburban affluence and inner-city blight will be turned on its head. Ferguson, Missouri, will be the new South Bronx."

Christopherson believes urban planners "will create the links between our urban past and our urban future" and "will play a 'big picture' role in responding to the challenges ... searching for solutions that tackle underlying dynamics – not just symptoms like urban congestion."

Planners seeking long-term solutions will promote new approaches to "create dense, energy-efficient cities where the automobile plays a minor role and engage communities and real estate developers in an urban design process in which good design adds value," Christopherson says.

Urban planning "will emerge as a prominent educational model for combining theoretical knowledge about the urban condition with civic engagement and action," she says.

- Daniel Aloi

'Soon, such apps will be able to alter the key, tempo and instrumentation of your music in real time to suit (or improve) your state of mind.'

- Roger Moseley

musicians and live performances have already countered the digital doom and gloom that engulfed the music industry at the turn of the millennium. But I believe that two current trends look set to accelerate.

First, music will continue to develop as a spatial art form as well as a temporal one. This tendency

is evident in sound art installations

and advanced electro-acoustic composition – areas in which

Cornell's Department of

Music excels – but is also driven by the simple fact that music is no longer tied to a single place of origin: it travels with its listeners, whether they are on the bus, at work, in bed or at the beach.

Via developments in virtualization technologies, musical signals will respond to

these changing conditions and playback will be adjusted accordingly, perhaps via implants or bone conduction rather than headphones or speakers. As for the content of that music, it's likely that your smartphone apps already presume to know your tastes better than you do. Soon, such apps will be able to alter the key, tempo and instrumentation of your music in real time to suit (or improve) your state of mind.

If this sounds too utopian or apocalyptic, my other

prediction is more down to earth: the musical past will have a future, too. Cornell has a proud history of pioneering research into the historically informed performance of music. Currently, the Department of Music is collaborating with the Westfield Center for Historical Keyboard Studies to establish a center for Cornell's unique collection of harpsichords, (forte) pianos and organs, making them available to local and international communities of musicians and scholars.

By safeguarding the future of these wonderful instruments, which constitute an invaluable resource for preserving and reanimating musical soundscapes

Far out music

Roger Moseley is an assistant professor of music as well as a music historian and ludomusicologist (a researcher devoted to musicological approaches to videogame music).

When looking to the musical future, the extrapolation of current trends – such as the commodification of music as binary information – can only take us so far.

In recent years, the resurgence of independent

ranging from Mozart's "Vienna" to Bob Moog's "Trumansburg," we hope to ensure that they will be still be heard loud and clear in 50 years' time.

Resist roommatematching algorithms

Sushmitha Krishnamoorthy '17 is from New Delhi, India. She is a computer science major in the College of Arts and Sciences.

What makes Cornell amazing is that it draws a transient mix of diverse people and ideas. Every day, I meet someone who is radically different from me, simply by chance. And I learn things I might otherwise never have known. I watched the South African stand-up comedy show "That's Racist" with a friend from Zimbabwe and realized how similar the challenges faced by young democracies – India and South Africa – are. From the rants of my roommate, an exchange student from Switzerland, I learned about the cultural differences between Europe and America. Ever since, South Africa and Switzerland have been on my travel list.

But in 50 years, personal data and machine learning might make that kind of serendipity impossible. Freshmen would love their like-minded roommates because the algorithm would match them perfectly based on personal information. An app would accurately predict which parties they are most likely to enjoy, based on other attendees. It might even tell them who they should be friends with.

While some of these ideas sound exciting, I'm afraid it would completely reshape the Cornell experience as I know it. Cornell's bicentennial students wouldn't interact with people unlike themselves or take a class in something they know little about. Although I'm a computer science major, I really enjoyed Introduction to Acting and a seminar in urban planning.

However, I know there is one thing that will not change. As climate change causes extreme weather conditions, the winters here are unlikely to mellow in the future. In 2065, perhaps my grandchildren will be at Cornell, telling me that the university doesn't cancel classes even during terrible snowstorms. I shall nod in agreement, knowing that Cornellians of all ages can bond over memories of harsh Ithaca winters, if nothing else.

Privacy and peace

Jon Kleinberg '93 is interim dean of the Faculty of Computing and Information Science, a Tisch University Professor, professor of computer science, and professor and chair of information science.

In my freshman year at Cornell, I would sometimes sit working in the stacks of Uris Library, a little awed by the surroundings, and I would think, "This is college." And later in the day, passing through a crowd of fellow students in front of Willard Straight Hall, the thought would come to me again, this time mingling with the din of the plaza – "This is college." And both those opposite thoughts still feel true today.

It would be fair to say that higher education created the World Wide Web in its own image, and it imparted to the Web those two powerful guiding structures – the library and the crowd. The library has been there since the Web's beginning, with the movement of human knowledge so rapidly online, and with the rise of search engines as reference librarians to the world. And the crowd – the teeming online mass of people who react in real time – is there as well, to tweet and tag and post viral content before an event has even concluded.

This is the digital world, and it has given us a set of big questions to keep us busy for the next 50 years. In the universal library of human knowledge and understanding, how do we decide what is featured and who gets to provide the answers to your questions? When we bring crowds together online, can we help them understand each other better as fellow human beings, reducing discord and polarization, rather than increasing it? And how do we reason about a world in which all these decisions are increasingly arbitrated by algorithms that we might no longer fully understand or control?

The technologies we build are influencing the architecture of everyday life, and addressing that transformation will require that we as computer scientists and information scientists engage deeply across the academy and with the world in all its complexity.

See additional "Cornell Looks Forward" entries at www.ezramagazine.cornell.edu/spring15/cover.html.

Clockwise from top left: Sushmitha Krishnamoorthy, Susan Christopherson, Roger Moseley and Jon Kleinberg



CHARTER DAY 15 CORNELL UNIVERSITY

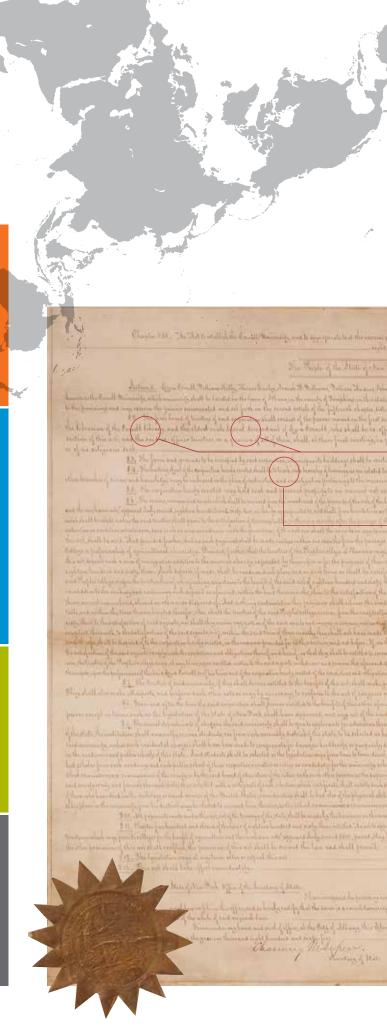
A MULTI-DAY, ON-CAMPUS, AROUND-THE-GLOBE CELEBRATION OF CORNELL'S BEGINNING.

On April 27, 1865, the governor of New York signed into law the charter to create Cornell University. The very next day, the board of trustees held its first meeting, during which they walked together along a ridge overlooking the Cayuga Lake valley, evaluating the lay of the land for a prime spot to erect the university's first buildings.

Now, **150 years later**, over the weekend of **April 24-27**, the signing of that charter will be celebrated at more than two dozen events on the Ithaca campus and approximately 60 events around the world, from Oregon to Australia.

A COMPLETE LISTING OF CAMPUS EVENTS, TIMES AND LOCATIONS:

http://150.cornell.edu/events/charterday/weekend-events



WHAT'S IN THE CHARTER?

Of the 10 charter trustees in Section 1. two besides Ezra Cornell would became long-standing supporters of the university with buildings bearing their names: John McGraw and Hiram Sibley. Horace Greeley, a former U.S. Congressman and editor of the New-York Tribune, was also among the charter trustees.

Nonsectarianism was built into Cornell's founding document: "at no time shall the majority of the board be of any one religious sect, or of no religious sect." The charter later states "persons of every religious denomination, or of no religious denomination, shall be equally eligible to all offices and appointments." As in the motto, "persons" is used instead of "men."

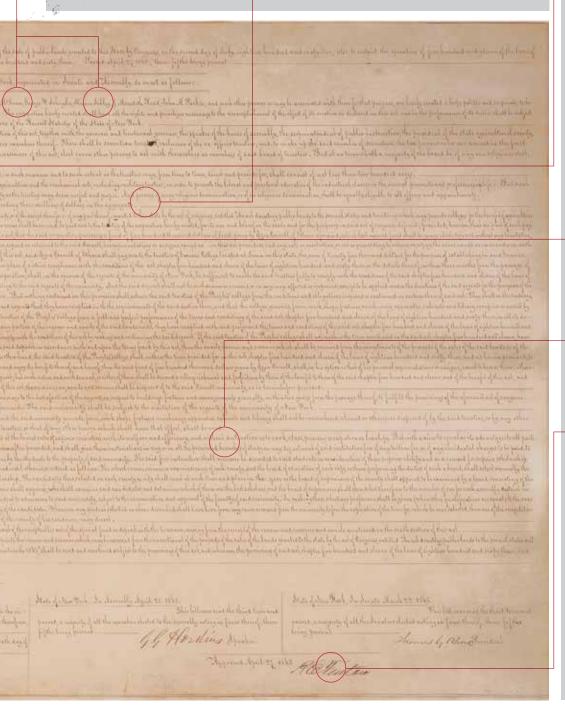
The **Cornell library** was Ithaca's public library, given to the community by Ezra Cornell in 1863.

Section 2 also names as a trustee "the eldest male lineal descendant of Ezra Cornell." That position is held by Ezra Cornell '70; the word "male" was removed in 1983 to pave the way for his eldest daughter, Katy Cornell '01.

Section 4 defines the goals of Cornell "to teach such branches of learning as are related to agriculture and the mechanic arts, including military tactics, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." But other sciences and knowledge may be taught "pertaining to the university as the trustees may deem useful and proper," leaving flexibility for programs in fields like hotel administration and labor relations.

Section 9 affirms Cornell's commitment to economic diversity, stating that the university would be open to anyone "without distinction as to rank, class, previous occupation or locality."

Gov. Reuben Fenton signed the charter on April 27, 1865, marking the founding of Cornell University. Fenton was scheduled to speak at Cornell's opening in 1868 but left town early, fearing criticism for his support of the controversial new university. Andrew Dickson White noted in his program that "Gov. Fenton was afraid of Methodists & Baptists & other sectarian enemies of the University & levanted the night before - leaving the duty to Lieut. Gov. Woodford who discharged the duties admirably."













Celebrating the sesquicentennial around the world

Beginning last September, Cornellians around the globe began marking the university's 150th birthday year with regional events and a traveling stage show, "The Big Idea! Cornell Celebrates 150."

From New York City and Boston to West Palm Beach, from San Francisco and Los Angeles to Hong Kong and London (May 14), thousands of alumni, students, faculty, and friends have reflected upon and celebrated Cornell University's unique contributions to the world.

All photos Diane Bondareff/Invision except Hong Kong event photo, provided.





Looking into the crystal ball

A past prediction of a future Cornell





In his June 1960 Commencement address, President Deane Waldo

address, President Deane Waldo Malott (above right) voiced a vivid description of what a future Cornell – and Cornellians – might be like.

Malott asked the new crop of 1,731 Cornell graduates gathered in Barton Hall (pictured above) to imagine returning to campus for their 40th reunion in the year 2000.

"The campus seems smaller than you remembered it ... the buildings more crowded, but you have at least noted with satisfaction that the Library Slope is still unconquered by stone and mortar," he said.

"Most of you, of course, have been back for many of your five-year Reunions, what with the improved six-lane highways from New York which tunnel entirely under the mountainous hills of Pennsylvania. It is an easy drive of less than two hours, using the new sources of power that have supplanted the nearly exhausted fossil fuels."

Malott went on to describe the dawn of the 21st century as "the Era of Interstellar Space," predicting that rail passenger travel throughout the nation would disappear completely by the late 1970s and that "some of you have already traveled in rocket capsules."

His predictions were gently satirical and hopeful:

"But here you are back at Cornell, meeting old friends ... No one, of course, is overweight. Research at Cornell's own Graduate School of Nutrition and the Cornell Medical College in New York has been helpful in the elimination of obesity on a national scale."

"The Olin Library, which was in process of construction during your senior year, has been badly crowded for nearly a decade and the Board of Trustees ... have just begun a 30-year debate on what to do about it."

"You are shocked at tuition announced for the year 2001, but I shall not disturb the equimanity of this present occasion by giving voice to the actual amount, because your sons and daughters will have been graduated from Cornell just before the new century comes."

Malott predicted the university's administration would be run via computer, care of buildings and grounds would be completely automated (with 138 pushbuttons) and the university president would be a "part-time functionary chiefly for ceremonial purposes."

At Reunion in 2000, the Class of 1960's headquarters would be an air-conditioned aluminum igloo on Lower Alumni Field, Malott described, with a "fountain gushing cold beer, piped direct in plastic glass tubes at high pressure from central storage in Ezra Cornell's old tunnel in Fall Creek Gorge. ... Long rows of easy chairs and earphones are set up on the Libe Slope, so that it is possible for the old grad to sit there, adjust the headphones, put a quarter in a slot, dial the proper number, and hear any lecture given by any Cornell professor in the last 25 years."

While the university may, 40 years later, have changed in almost every aspect, it was "born out of protest to the existing order ... to inaugurate drastic changes in the pattern of higher education," Malott said. He challenged the university to never become "so complacent, so self-satisfied, so intellectually arrogant that it is no longer willing to probe and to explore and to innovate and to experiment."

He left the Class of 1960 with a reminder of the loyalty and enduring devotion of Cornellians. "For universities are each linked through the years by the procession of those who are leaving to those who remain to those who shall come in the years ahead," he noted. It is the "trusteeship we have together ... for the transmission of Cornell from the emerging 95 years of its past to the challenging and untold years of its future."

Sweet Cornell

Official ice cream of the sesquicentennial



Pack 150 years of Cornell history into a pint of ice cream and what does it taste like? "Sweet Cornell."

Created by a team of Food Science 1101 students (one team, pictured above, works on flavor development) and chosen by a panel of five expert judges in a Dec. 2 contest, this ice cream, with a light corn base infused with salted caramel. is the official flavor of the Cornell sesquicentennial, slated to be served at celebrations throughout 2015, including Charter Day, Commencement Weekend and daily at the Dairy Bar.

"We focused on two main themes of the university," says Erynn Johnson '15, a member of the winning team. Cornell's dedication to public engagement and to diversity translated into the flavor of corn - a "unity" crop grown in 49 out of the 50 U.S. states and used all over the world with a salted caramel swirl to appeal to "a diverse population with diverse tastes," says Johnson.

The flavor also pays homage to an influential Cornellian, Barbara McClintock '23, Ph.D. '27, whose work with genetics in the structure of corn won her the Nobel Prize in physiology or medicine in 1983.

The team thought a great deal about taste, too, choosing Sweet Cornell over seven other flavors (including "A.D. White Chocolate Cherry" and "Sesquicider") in the contest. One judge,

Kathryn Boor, the Ronald P. Lynch Dean of the College of Agriculture and Life Sciences, admits she was skeptical about trying a corn-flavored ice cream, but one taste changed her mind.

"It's like a really fabulous popcorn with a hint of caramel and salt," she says.

Throughout its history, Cornell has influenced the flavor of many foods and crops: apples and wine, for example.

Ice cream, however, is the best food to commemorate 150 years of university history and to look forward to a flavorful future, says Boor. It's celebratory, she points out; it appeals to all age groups, and it never goes out of season. And it's a reflection of Cornell's ties to dairy, the largest agricultural industry in the state.

New York state is enjoying a dramatic increase in dairy operations - it is third in milk production in the nation and first in cream cheese and yogurt. Cornell is at the heart of the industry, hosting the first two New York State Yogurt and Dairy Summits in 2013 and 2014, which drew about 100 dairy and government leaders to campus.

"This ice cream is a big deal," says dairy plant manager Jason Huck, who is responsible for building Sweet Cornell from a flavor concept to a large-scale order of the product. "It's important that we take the concepts and hold up the standards we expect from Cornell Dairy."





the spring of 1865 Ezra
Cornell drilled into the
bedrock atop Libe Slope
and kept a heap of dirt as a memento.
His decision to build a campus there
overrode the opinions of his son,
his lawyer and his co-founder, A.D.
White. It was Ezra's farm, after all: He
knew best.

His enduring vision makes it a safe bet that the alma mater will be heard above Ithaca's valleys and hilltops well into the future. What might the Cornell campus look like 50 years from today, as the university marks its bicentennial? While this is a fanciful exercise, it is a tempting one, since the physical campus has changed in so many ways over the past century and a half.

Many of those future changes will reflect 21st-century challenges facing the university and showcase the Cornell community's answer to them.

The university's campus master plan, adopted in 2008, established Cornell's commitments to support the academic mission, create a welcoming campus experience, preserve its unique heritage and natural assets, and to encourage sustainable growth. In 2009 President David Skorton launched the Climate Action Plan to reach carbon neutrality by 2050 (the target year recently was accelerated to 2035).

A "living document," the master

plan emphasizes a compact campus that is socially and physically interconnected; walkable and bikeable;

accessible; and expandable eastward, for academic and administrative units linked to campus by an interconnected transit network.

More mixed uses and a greener oasis

University Planner Leslie Schill and University Architect Gilbert Delgado oversee physical planning of campus and its lands as well as the architectural aesthetic for the university, which is "quite a bit like a small city," says Schill. This multifaceted work is daunting and inspiring.

One challenge: to meet the need for new types of learning, teaching and social spaces while reducing the university's energy use and environmental footprint. Cornell has reduced its overall emissions by almost 50 percent since 1990, and 32 percent since 2008, despite significant campus growth over the last two decades. To reach current climate goals, it is critical

to build on this success, Schill and Delgado say.

Leslie Schill and Gilbert Delgado

Delgado tosses the question of what the future campus may look like into a time machine: "It's a tough question. Just think what planners in 1965 imagined Cornell would look like today," he says. The main campus has 628 buildings on more than three square Tompkins County miles, trafficked by more than 20,000 students and almost 10,000 faculty and staff.

"The campus growth of 50 years ago focused on engineering and the sciences as independent areas of study," Schill says. "Today, we see cross-disciplinary learning, teaching and interaction expanding across the university. Our goal will be to create and preserve great places that foster exciting academic connections."

Economics, technology, climate and the area's topography will be central to the design of the campus. Delgado and Schill see a stronger focus on public transportation and walking (creating an engaging, pedestrian-friendly



experience throughout) as a means to sustainably connect the campus.

"The campus of tomorrow will likely include a greater mix of uses, where students, faculty and staff learn, work, live and play - a place that engenders a strong sense of community," Schill says. But a few critical gaps must be addressed, such as new housing for graduate students and new faculty; a multimodal transportation system that prioritizes walking and biking; and a balanced approach that preserves Cornell's open, green campus and historic buildings in addition to planning for new facilities.

But rather than a campus with many more new buildings, the future Cornell may well repurpose existing buildings for new academic and functional spaces, together with enlivened public spaces and walkways, Delgado says. He describes a potential future that could look like the past – with ground-floor interior spaces spilling into outdoor public areas. High-occupancy classrooms on ground floors will be triangulated with cafés and public seating areas.

If future learning will increasingly take place outside the classroom, Delgado says, the public realm – social spaces where students and faculty can discuss ideas or individually study become more important.

era prediction of Cornell in 2015 - a "Jetsons"-type Orbit City campus, hovercrafts, space-age fashion - the developing view of Cornell on its 200th birthday looks far more like an oasis for learning, living and research where ideas are freely discussed.

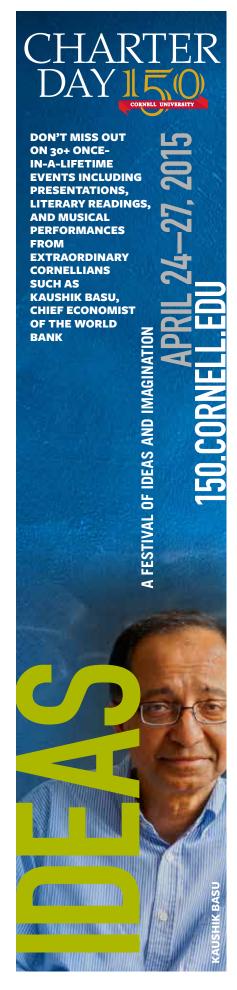
The COre of campus

The future is already here: Lake Source Cooling and the conversion of the university's Combined Heat and Power Plant away from coal; Tower Road's transformation into a "complete street" with green infrastructure design; and new and refurbished buildings that reduce energy use.

Further collaboration with communities adjacent to Cornell also will be important. Development in Collegetown, East Hill Plaza and downtown Ithaca - areas identified for densification - will ensure that the greater Ithaca community continues to be dynamic and vibrant, Schill says.

But what will it look like? The founder's views remain sacrosanct.

"The core of the campus, the quads and places like Ho Plaza, the stunning views from Libe Slope – they will remain integral to the future campus," says Schill.





avid J. Skorton, Cornell's current and 12th president, and Elizabeth Garrett, who will become Cornell's 13th president July 1, sat down with Joel Malina, Cornell vice president for university relations, in February to discuss the challenges facing higher education, what it takes to be a successful leader at a top research university, Cornell's sesquicentennial year and the future of the university. The full conversation is available on video on CornellCast at www.cornell.edu/video/skorton-garrett-conversation. Excerpts from their conversation:

David Skorton: I just want to tell everybody out there who's looking at this and those who are reading this how thrilled I am with "Lucky 13." The search committee and the board of trustees did a fabulous job, and I want to say to all the folks who are going to read this: You're going to really enjoy the leadership of Elizabeth Garrett. Welcome to Cornell.

Elizabeth Garrett: Thank you so much.

And it has been great fun to get to work with David during this transition and ... to think about our future together. I feel enormously fortunate to be following in the footsteps of a leader like David, so thank you, No. 12.

On the most important traits, and the role, of the president of a major research university:

Skorton: I'm a big believer that

universities, and actually many big organizations, thrive from the bottom up. Top-down sort of leadership and management doesn't usually fit with this paradigm. So I think vision is No.

1. And I've learned by making some mistakes over two presidencies that the most effective tool a president has at a successful research university like Cornell is persuasion. And that persuasion has to

be based on a vision that could be compelling enough to bring people along, no matter what part they play in a complex organization. Sometimes, unfortunately, people will not come together in an organization like a research university. And so the other thing I would add is that the president has to occasionally be very decisive and have the courage of her convictions to push forward — despite sometimes the lack of a total consensus — especially on difficult issues.

Garrett: I agree with David that vision is the most important aspect of presidential leadership, and that vision comes from conversations with the constituent groups: with the faculty, the staff, the students, the alumni. And it's the president's role to bring those groups together to think about their ambitions, their hopes and aspirations for the future, and then articulate that for the institution in a way that captures all of those desires and ambitions and hopes. ... A president cannot succeed unless he or she has a terrific team of people. [A university] is a complex organization, and Cornell is particularly complex with its hybrid nature of public aspects [located] in a private liberal arts research university, dedicated to the very best teaching, with a wide geographic presence ... throughout the world.

Skorton: In a college town like Ithaca, we're the largest employer by far not only in the city, in the town, but the county. [It's] very important to be on a listening tour constantly in the community beyond our walls. Everyone in a place like Tompkins County is hugely affected by Cornell University decisions and actions, whether or not the individual actually works for Cornell.

On advice for the new Cornell president:

Skorton: My main advice to No. 13 is, don't worry too much about what No. 12 did. Cornell is a gentle place, the Cornell community is a very gentle community, very emotional and sentimental about their leaders. Hopefully, not too sentimental while they're in office. . . . So

the one piece of advice, the most important piece of advice, is to have the courage of your own convictions, do your own thing ... The second piece of advice, and it's really just a reiteration of what Beth already said, is the development of a vision based on ... listening and digging and asking questions and being responsive to constructive criticism ... always to be on a sort of listening tour as you're slugging out the day-to-day issues. Those will be the two main things. Do your own thing and constantly listen.

Garrett: This transition period is really a gift to me. Very few academic leaders have the opportunity that David has made possible for me: to really spend time meeting people, listening, getting a sense of the culture, of the aspirations. Usually you're named and then, a few weeks later, you're in the job, thrown in and making those kinds of decisions that David talks about. And so, ... this [is] an enormously important time for me as I think about the next steps for this institution, building on the terrific foundation that David and so many before him have laid for all of us. ... I've traveled around meeting [students, faculty, staff, alumni]. I'm going to continue to do that until my husband and I move here July 1st. ... One of the things that has amazed me has been the ... deep enthusiasm for Cornell by all of those constituencies. ... What impresses me about Cornell's alumni is not only their deep love for this institution, but when they talk about their years – and as faculty members, I think this is going to resonate for us – they mentioned particular faculty members and particular classes that made a difference in their lives. ... To have them talk about actual classes ... makes someone who is a professor at heart really feel like this is the kind of place that we want to continue to nurture and to move forward.

On the Cornell alumni network and alumni passion for the university:

Skorton: I've been in a lot of universities with fabulously effective and excited alumni pools – UCLA, Northwestern University, University of Iowa. I have to say, I've never experienced



the kind of connection that people have to [their] alma mater that I have at Cornell. ... The phenomenon of Reunion Weekend, which I went to for the first time before Robin and I actually started on the Cornell payroll in June of '06, ... it was absolutely unbelievable. And the highlight for me every Reunion Weekend is Cornelliana Night where people sit in Bailey Hall, one of our big performing arts and lecture venues, and talk about Cornell, sing songs. ... It's really, really, really amazing.

And when you ask, how do we tap into it? ... I think it's respecting the alumni. As Beth mentioned earlier, when she was ticking off the constituencies at the beginning of our discussion, she said "faculty, staff, students and alumni" - she just kept them all together, and that's the answer. ... To consider the alumni part of the community, part of the decision making, part of the forward planning - not only as a means of support. And we do get unbelievable support from alumni, not just financial support but political support, moral support, all kinds of support and constructive criticism. ... If the alumni feel that we are considering them part of the grassroots that plans and lives the university, they get even more engaged. And one of the things that I've learned through your predecessors and through my work with you, Joel, is that adding on a few minutes of Q&A at the end of even a very formal speech opens the door not only to those few minutes, but to folks emailing you afterwards, because maybe you took three guestions and there were 20 that didn't have a chance to be asked. And I have gotten so much wonderful, wonderful input from that. Sometimes I disagree with it, what's the difference? It's the interaction. ... Really taking them seriously. To me, that's the secret ... taking that unbelievable engagement and even ratcheting that up a bit.

Garrett: I agree with all of that. ... I would add [that] the other thing that has amazed me about the alumni is their attachment to the current students and faculty. ... Joel and I were together in Washington, D.C., and we visited our great alum [Justice] Ruth Bader Ginsburg ['54] at the Supreme Court. I had known her when I







clerked on the D.C. circuit ... So, we were just going in to talk to her but it turned out that the Cornell Glee Club was performing at the Supreme Court. And that was wonderful. ... The thing that was special to me is [that] Justice Ginsburg took our students and gave them a special tour ... and I watched these students, ... from freshmen to seniors, watch her and engage with her and I watched her share her knowledge and her love of the court, of the law, of Cornell and that special bond – there was just something magical about that. [She] was a slight person surrounded by these young men all hanging on every word that she said, and that to me was that kind of connection. ... [S]ome of our students may be able to envision themselves someday standing in her place. ... I felt I was fortunate to get to be part of it.

On legacy and how Cornellians in 2065 might look back on the Skorton and Garrett years:

Skorton: Well, they'll be shocked to know that Billy Joel never contacted me to go on the road after my four minutes on stage with him. They'll be disappointed. Tears will be shed. I've shed plenty. Except for that, I would be the last person who could predict what the legacy might be. I'll tell you what I feel the best about. What I feel the best about, that Beth has already eloquently said, is that our undergraduate student body is more diverse, economically and racially diverse, than it was because of the generosity of our alumni and the reallocation of funds by the deans and provost at that time toward more robust needbased undergraduate student financial aid. And that's the thing I feel the best about.

Garrett: I think that the Skorton years ... will have really created an amazing legacy for Cornell. ... David navigated this institution through very difficult times and allowed it to come out of those difficult times – which all of us in higher education faced – a

strong institution, a robust institution, an ambitious institution, one that took on risks and opportunities. Cornell Tech is one I've mentioned but there are many others. ... When somebody writes the next 75 years, [those will be] important and really interesting few chapters.

You know, it's too early for me to be thinking about legacy. I [am just] moving in and getting settled, but I'll go back to something I've said: At base, university presidents ... are professors. ... And your legacy ... in that respect [is] the students you got to interact with, [and the colleagues] whose work influenced you – and hopefully you had an influence on their work. As a president, ... [your legacy is] creating an environment where faculty thrive and do the very best research and creative work and teaching that they can. So, I think in some respect, every president's legacy [is] the faculty, and the students who come after that president, because of things she put into place.

Skorton: All I can say is "Go 13!"

See the full conversation on CornellCast at www.cornell.edu/video/skortongarrett-conversation.

EXPLORE EXTRAORDINARY CORNELL STUDENT INVENTIONS, INNOVATIONS, AND **ENTREPRENEURSHIPS** IN ENGINEERING. FASHION, HUMANITIES, BUSINESS, HEALTH, AND MORE IMAGIIN

Opposite page: From left, David J. Skorton, Joel Malina and Elizabeth Garrett discuss the future of the university at the Cornell Broadcast Studios in Collegetown in February.

AN EZRA MAGAZINE VIRTUAL L CAPSULE

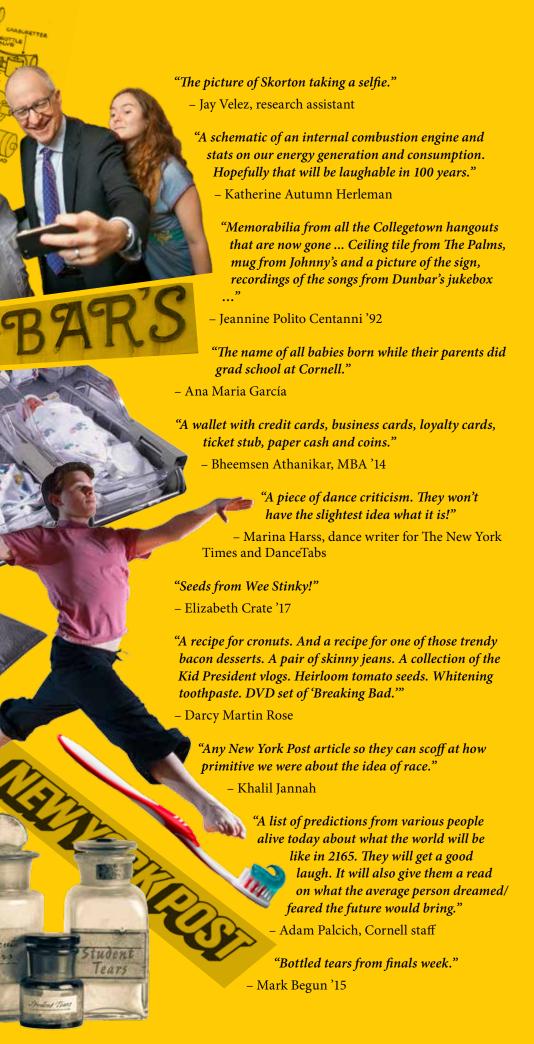


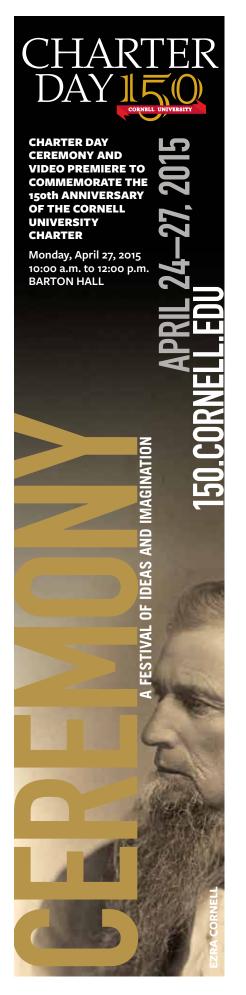
zra Cornell left a sealed letter / in a box placed in the cornerstone of Sage Hall when it was built in 1873, addressed to "the coming man and woman." The box became a time capsule, opened 125 years later in 1997 during extensive renovations to the building, and the woman who had that honor of opening and reading the founder's letter was University Archivist Elaine Engst.

University trustee Ezra
Cornell '70, a descendant of
the founder, was the second to
read its contents: a warning about
sectarian strife being the biggest
threat to the then-new university.
Cornell's nonsectarian ideal,
Ezra Cornell wrote, was one of
the most crucial freedoms
to preserve, along with
coeducation.

What messages would we want to leave for the men and women 150 years from now? What objects give a glimpse into our ideals, values and symbols of the Cornell experience today? We asked this question on Facebook, Twitter and around the office, and here are some of our favorite responses ...







now.cornell.edu

Finding and funding a room of one's own

Tucked away in Olin and Kroch

libraries are tiny, spartan rooms that host some of Cornell's greatest thinkers.

Important ideas are born in these 8-by-11-foot enclaves, which now can be named in honor of beloved professors. Over the course of the past six months, the process of endowing three of the studies has begun.

When Beth Anderson '80 thinks about all the professors she had at Cornell, one stands out above all others: Fred Marcham, Ph.D. '26, the Goldwin Smith Professor of History, university trustee and boxing coach.

"He had more influence on me than any other," Anderson says. "Besides history and literature, he taught me about listening for the birds, observing trees closely and also a good deal about kindness."

He also taught her about the "essential nature of libraries," Anderson adds, so the library seemed like the right place to honor him. She and her mother – Arlie Williamson Anderson '47, who died last October – named a faculty study on the seventh floor of Olin Library for Marcham, who taught them both.

Just down the hall, another study will honor another favorite professor: Michael Kammen, the Newton C. Farr Professor of American History and Culture, who died in 2013. Kammen researched a series of seminal books, including his 1972 Pulitzer Prize-winner, in the library and his study, Olin 710.

Historian Carol Kammen calls her husband's study "his home in the library; where he kept his hat and coat, where he compiled a collection of books that interested him, that might contain something he needed to know, or something he wondered about. It was his base."

To honor Michael Kammen's memory and legacy, his former students, colleagues and family members have committed to naming the study, which cost \$15,000.

"I distinctly remember Professor Kammen explaining at length how important the library was in making his decision to come to Cornell," says Michael Sillerman '68. "In a sense, then, Cornell and its students and faculty have the library to thank for Professor Kammen's many years of wide-ranging and uniquely insightful contributions to the campus and historical scholarship."

The newly endowed faculty studies are bringing renewed attention to their namesakes.

The Cornell Association of Professors Emeriti created a space on the library-supported eCommons where people can learn more about Marcham and re-released one of Michael Kammen's books, which has been downloaded more than 4,000 times.

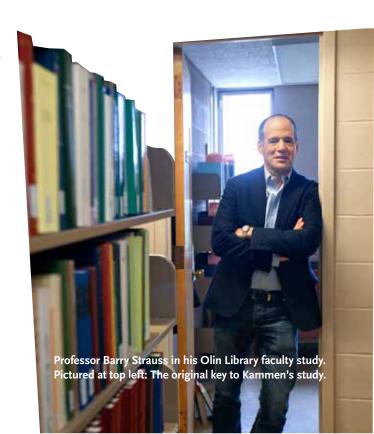
And more named studies are on the way. Another alum has stepped up to name a study for Edward W. Fox, an esteemed Cornell professor for 30 years and a renowned historian and diplomat.

Endowing these studies honors not only professors of the past but also supports current and future faculty members.

"My research would simply not be possible without the resources of Olin Library," says professor Barry Strauss, chair of the history department. "As for my Olin faculty study, it is the one place where I can go to gather the print materials, which are still crucial, and reflect on them in the solitude that good scholarship needs."

- Gwen Glazer

Olin has 82 studies, and Kroch Library has 12. To find out about how to honor a favorite professor with a named study, contact Jennifer Sawyer at jds367@cornell.edu or 607-255-9568.



University surpasses its \$5.75 billion campaign goal

In January, six months after meeting a previous "Cornell Now" campaign goal of \$4.75 billion, Cornell surpassed its amended goal of \$5.75 billion with eleven months left to go in the campaign. This milestone includes funds raised for the Ithaca campus, Cornell Tech and Weill Cornell Medical College.

"I believe that \$6 billion is within reach by the campaign's close in December," said Charlie Phlegar, vice president for alumni affairs and development, although no new goal will be set.

Success leading into the final stretch of the campaign has been fueled by a growing base of support as well as by large gifts, said Phlegar Feb. 3, noting "the generosity of an unprecedented number of alumni, parents, students, staff,

faculty, friends, corporate donors and foundations, who have given consistently, even during the worst economic recession since the Great Depression." He pointed to the steady rise in the Cornell Annual Fund as evidence of the increasing breadth of support for Cornell. In 2006, the first year of the campaign, the annual fund received nearly \$15 million; last year, it reached \$36 million. In 2014 more than 55,000 individuals gave to the university.

Campaign funds raised to date have been used for the university's most important strategic priorities, including undergraduate and graduate scholarships and faculty recruitment and retention.

Emily Sanders Hopkins

You can make it happen spring 2015

Set sail!

Name a sailboat (one of 16) in the fleet of Cornell's newest and 37th varsity sport, women's sailing. (Can you top the only boat named so far, Unique II?) \$10,000

Support real dialogue

Take Thomas Jones '69 up on his challenge to encourage more open and meaningful student dialogue across differences. He will provide a 1:1 match if alumni and friends give \$100,000 in the next three years to fund an associate director for the Perkins Prize-winning Intergroup Dialogue Project. This will allow more students to participate in the series of 4-credit courses in which students meet in small groups to develop skills for interacting effectively across racial, class, sexuality, socio-economic and gender differences. Gifts of all amounts welcome.

Help military veterans transition to civilian work

Sponsor a 12-month, one-on-one mentoring program for veterans with disabilities, run in collaboration with the U.S. Business Leadership Network, the Employment and Disability Institute and the ILR School. Fund one participant: \$2,500

Plant a living legacy: a tree

With the intersection of Tower Road and Garden Avenue under construction this summer, five oak trees will need to be replaced. Each native tree (15 feet tall): **\$5,000**, or **\$25,000** for all five.

Boost to CALS students

Last year, in competitive grants that ranged from \$200 to \$1,200, 43 undergraduate and graduate students in the College of Agriculture and Life Sciences were given the little boost they needed to do big things. They used grants from the CALS Alumni Association Academic Enrichment Program, totaling nearly \$18,000 and administered by alumni and staff, primarily to travel to summer research opportunities, including in animal behavior, communication and plant science. Make a gift of any size.

Emeriti but not forgotten

The Cornell Association of Professors Emeriti holds lectures, records oral history videos from the professors, preserves faculty papers in the archives, holds regular meetings to foster community, produces a newsletter and more. Fund a year of travel: \$1,000. Fund video formatting and archiving: \$7,500. Install an assisted hearing device system: \$7,000. Or make a gift of any size to support the General Membership Fund.

To make a gift, or for more information about these and other giving opportunities, email MakeltHappen@cornell.edu.



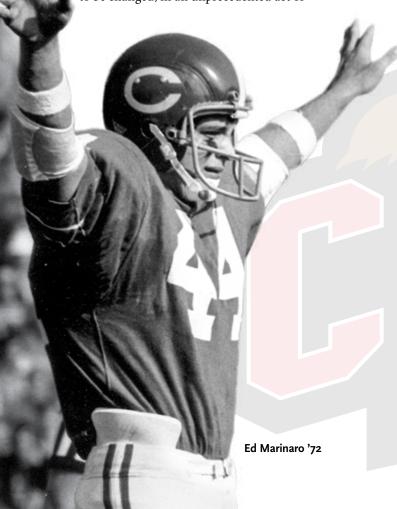


Some of Big Red athletics' TOP MOMENTS of all time

any of the Big Red's most memorable achievements are well known through the collegiate sport landscape. While not an exhaustive list, here are 10 signature moments for Cornell sports teams.

November 16, 1940 – Football

Though not a victory, the "Fifth Down" game set the standard for fair play and sportsmanship in athletics. Top-ranked Cornell seemingly improved to 6-0 with a 7-3 victory over Dartmouth, scoring on the game's final play. After reviewing game film the following Monday, Big Red head coach Carl Snavely and acting athletic director Robert J. Kane wired Dartmouth officials to tell them Cornell scored on an inadvertent fifth down. Though there were no rules compelling the outcome to be changed, in an unprecedented act of



sportsmanship, the Big Red relinquished claims to the win. The Big Green accepted the forfeit, winning the contest 3-0. It remains the only time a collegiate sporting contest has been decided off the field after the completion of a game.

March 21, 1970 - Men's Ice Hockey

Cornell completes the first (and only) unbeaten and untied hockey season in Division I history (29-0-0) with a 6-4 victory over Clarkson at what would become Olympic Arena in Lake Placid, capturing its second NCAA title in four years under head coach Ned Harkness.

October 30, 1971 - Football

Ivy League football legend Ed Marinaro '72 breaks the NCAA career rushing record as part of a 272-yard performance in a 24-21 win over Columbia. Marinaro would be runner-up for the Heisman Trophy after becoming the first college football player to surpass 4,000 yards.

May 29, 1976 - Men's Lacrosse

It was the matchup lacrosse fans everywhere wanted to see. For the first time in NCAA tournament history, two undefeated teams, No. 1 Maryland and No. 2 Cornell, met in the championship game. The contest didn't disappoint, as the Big Red, down 7-2 at halftime, took a fourth-quarter lead before Maryland scored on a buzzer-beater to send the game into overtime. The Big Red scored four unanswered goals in the extra session to claim the crown with a 16-13 victory.

June 4, 1989 - Women's Rowing

After finishing a respectable third at the Eastern Sprints just two weeks before and going in as underdogs to rowing powers Washington and Wisconsin, the Big Red surprised the field by winning the nationals. It remains the first and only NCAA championship won by a women's program in Cornell history.

May 12, 2002 - Women's Lacrosse

When the 2002 season commenced, the Big Red was considered an afterthought in collegiate women's lacrosse, while Maryland was a favorite to make its 13th straight Final Four and win its eighth straight national title. Ivy League Player of the Year and Maryland native Jaimee Reynolds '02 had other ideas. Reynolds scored seven goals and two assists as the Big Red knocked off Maryland 14-4 in the NCAA quarterfinals at Schoellkopf Field. In the process, head coach Jenny Graap's ('86) squad became the first Cornell women's team to advance to an NCAA final four.





Kyle Dake '13

Softball coach Dick Blood with the team at the 2004 NCAA regionals

Women's basketball head

coach Dayna Smith at the

2008 NCAA tournament

May 20, 2004 - Softball

Legendary head coach Dick Blood, the all-time wins leader at Cornell in a single sport, couldn't have asked for a better way to earn his 300th career victory. The Big Red scored a pair of runs in the top of the fourth inning and held on for a shocking a 2-1 upset over third-seeded and 18th-ranked Long Beach State in the first round of the NCAA regionals in Los Angeles.

March 16, 2008 – Women's Basketball

A flip of a coin that gave the Big Red a bye in a three-team Ivy League playoff and a dominant defensive effort in the championship game against Dartmouth gave head coach Dayna Smith's team a first-ever NCAA tournament appearance. Led by Ivy League Player of the Year and two-sport All-American Jeomi Maduka '09, the Big Red set program records for wins (20) before losing in the first round to eventual NCAA Final Four participant Connecticut.

March 18-21, 2010-

Men's Basketball, Women's Ice Hockey, Men's Ice Hockey and Wrestling

Arguably the greatest weekend in more than 100 years of Cornell athletics, the Big Red made national news across the board. The men's basketball team advanced to the Sweet 16 of the NCAA tournament with wins over nationally ranked Temple and Wisconsin, charming

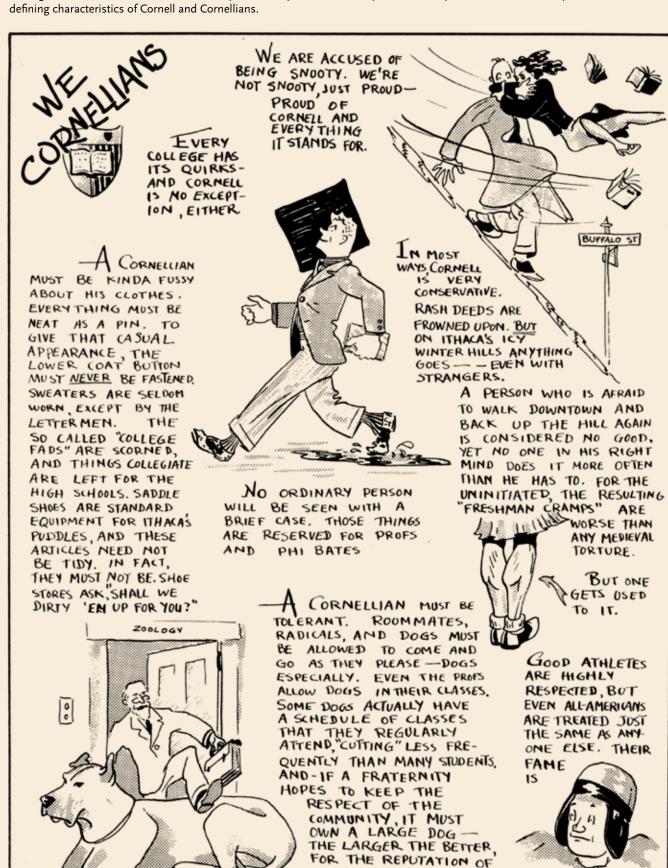
fans all over the country with their exploits on the court and their wit and cohesiveness off it. Women's ice hockey continued its Cinderella run to the national championship game at the Frozen Four, knocking off top-seeded and undefeated Mercyhurst in the semifinals. Wrestling finished second at the NCAA tournament, a school-best mark. The Big Red crowned four All-Americans, including national champion Kyle Dake '13 at 141 pounds. Big Red men's hockey topped off the weekend by winning its 12th ECAC Hockey championship with shutouts of Brown and Union in a span of 30 hours.

March 23, 2013 – Wrestling

Kyle Dake '13 cemented his spot as the face of collegiate wrestling by becoming the first student-athlete to win four NCAA titles at four different weight classes. The Hodge Award winner as collegiate wrestler of the year, Dake was named the EIWA and Ivy League Wrestler of the Year and went unbeaten at 165 pounds, including knocking off the reigning champion at the weight class in the NCAA finals, a match for which ESPN rearranged the championship schedule to feature on its airwayes.



This full-page panel from the conclusion of "We Cornellians," the 1940 illustrated look at Cornell University created by thenundergraduate student Steve Barker '41 and published by the Cornell Cooperative Society, looks at some of the quirks and defining characteristics of Cornell and Cornellians.



THE HOUSE DEPENDS UPON

THE SIZE OF THE BEAST,

OFTEN GREATER

ON OTHER CAMPUSES.

end note BY LIZZIE KLEIN '18

Walking across a bridge to the future

'... MANY OF THE

STRONGEST AND

DEVELOP LONG

DEEPEST CORNELL

CONNECTIONS OFTEN

This may be the most exciting time ever to be a freshman at Cornell University. The Class of 2018 has just begun its undergraduate journey and yet, in our very first semester, we already find ourselves a part of Cornell history as the university

This milestone is a natural time to look back at the remarkable changes and accomplishments at Cornell in student life, academics and the university's scope, breadth and outreach. As a fifthgeneration Cornellian, I feel a personal connection to that incredible history. I often think about how Cornell has changed since my great-greatgrandfather, C. Reeve Vanneman, Class of 1903, attended the university, and how in so many ways the undergraduate

AFTER GRADUATION.' celebrates its sesquicentennial.

Above right: Lizzie Klein '18. Above: Klein, right, at age 2, attends her first Cornell reunion in 1998 with, from left, her great-grandfather Bill Vanneman '31, then-President Hunter R. Rawlings III and her mom, Kara Vanneman Klein '89.

experience remains the same: a time of incredible intellectual and personal discovery. Now, my classmates and I find ourselves caught up in the excitement of what Cornell is to become, and the roles we will play, in that story.

The Class of 2018 came to Cornell for many of the same reasons as those who came before us: the quality (and quantity) of academic programs, the picturesque campus and the opportunity to learn alongside a diverse group of students. Together, we compose Cornell's newest group of young minds, seeking the preparation we need to make our individual impacts after our four years here. The omnipresent winter (does it ever end?) we could all do without, yet not even negative-degree wind chills stop students from taking advantage of all this university has to offer.

As time passes and Cornell continues to grow in size and reach, we can only imagine what more the university will provide future generations of students. Cornell Tech will soon be well-established in New York City, expanding the university's research, tech and industry partnership capabilities; similarly the new Engaged Cornell initiative will bring students into their desired professional fields before they've even left the Hill.

When we leave Ithaca upon graduation, we will enter an expansive, global Cornell community comprising alumni who can be found almost anywhere in the world. I grew up immersed in the Cornell alumni network, and I know from

the experiences of my family that many of the strongest and deepest Cornell connections often develop long after graduation.

I took my first steps through my current freshman dorm at a Cornell reunion, when my mom attempted to appease her daughters' sugar cravings at an ice cream sundae bar in Mary Donlon Hall. At age 2 - even earlier in my Cornell career – I met then-President Hunter Rawlings underneath the reunion

tents. I was fortunate enough to connect with him again (this time, I could hold a conversation) just recently at the university's sesquicentennial celebration in Washington, D.C. The ease with which we spoke about my own Cornell experience was a reminder of the familiarity and kinship that exists among so many Cornellians.

We are all connected by these shared experiences, as well as anticipation of things to come. On my first day of class last fall, I crossed the bridge from North Campus toward the Arts Quad and passed over a seemingly unimportant manhole cover, but a small detail caught my attention and I paused to read the inscription. To my surprise, the cover had been donated by the Class of 1931, bringing an immediate smile to my face. On my first day of freshman year, my greatgrandfather, Bill Vanneman '31, who had been a Cornell freshman 87 years earlier, stood by me in spirit.

The enduring legacy of Cornell, a tradition of change while staying true to its original goals, will remain the most important aspect of the university in this, its 150th year, and beyond.

Lizzie Klein '18 is a biological sciences major in the College of Arts and Sciences. Cornellians in her family include Kara Vanneman Klein '89, Kenny Klein '87, William Vanneman Jr. '65, William (Bill) Vanneman '31 and C. Reeve Vanneman, 1903.



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