

# DREXEL CO-OP MAKES BRIGHT FUTURES.

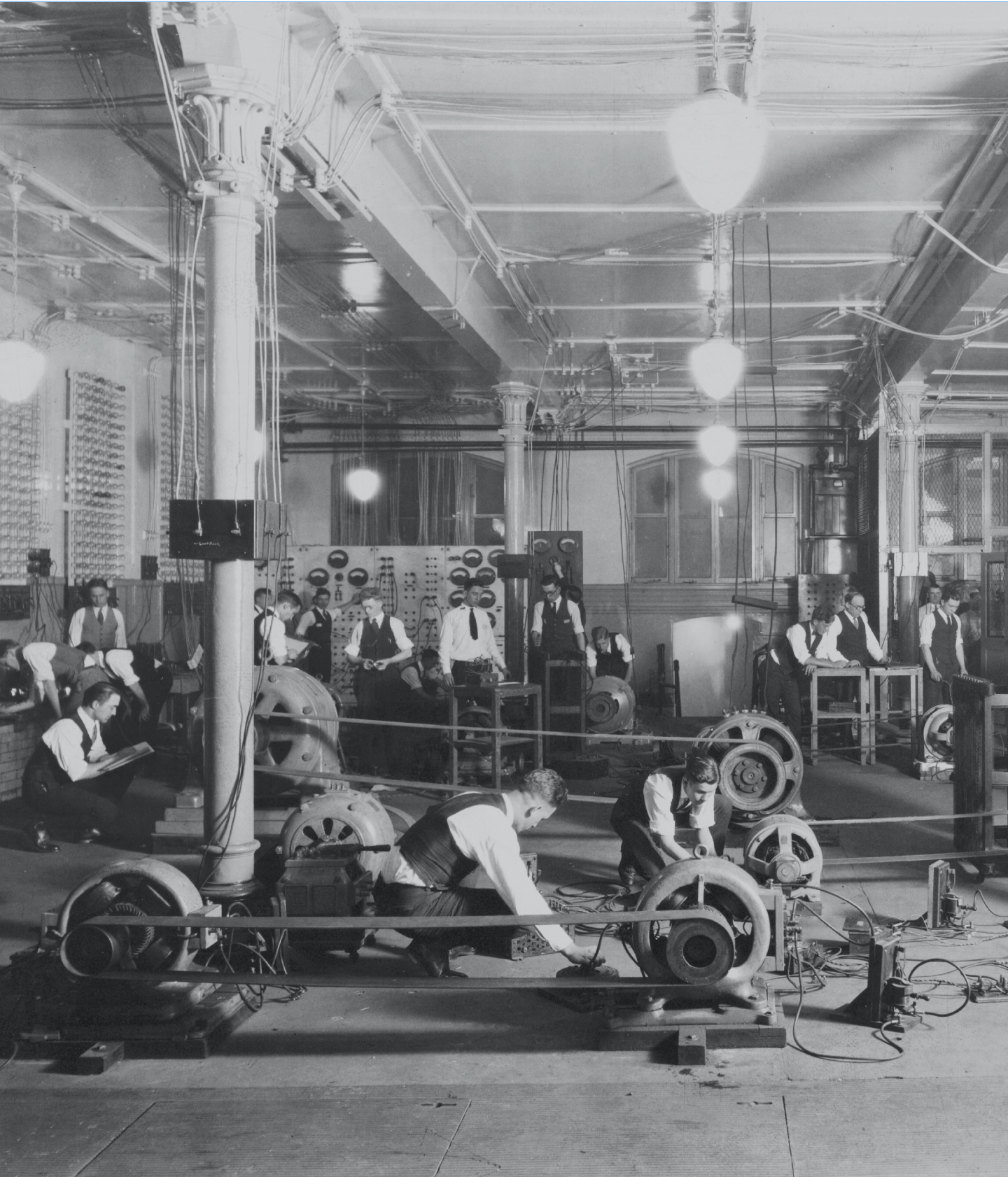
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CELEBRATING A CENTURY OF COOPERATIVE EDUCATION  
AT DREXEL UNIVERSITY

1919 – 2019

▼ The Drexel Co-op program began in 1919 with just 152 engineering students.



**THIS  
IS  
EXPERIENTIAL  
EDUCATION.**

**1919**  
*In the wake of WWI, Drexel Institute of Art, Science and Industry President Hollis Godfrey announces Drexel will support the post-war economy by creating a co-op program. The program has just 152 engineering students.*

**1922**  
*The first co-op employers join Drexel's network. Many are initially industrial companies involved in military defense. Some no longer exist, like American Pulley Co. and Pennsylvania Railroad, and a few are still in the network today, like DuPont.*

**1923–29**  
*With the success of its first co-ops, Drexel adds co-op programs in chemical engineering, business, and retail management, and expands the engineering co-op schedule to five years.*

FRONT:  
 “Canyoning” is a popular extreme sport in Brazil, where Peter Caisse (BS Information systems '09) lived for two quarters while on co-op with Brazilian software company Cl&T in Campinas.

## THIS IS EXPERIENTIAL EDUCATION

The Drexel Co-op program is a partnership of more than 1,500 companies and nonprofit organizations that employ 5,300 students in extended work experiences of up to six-months each year. These periods of full-time employment alternate with full-time classroom study and are repeated as many as three times over the course of a typical student’s five-year college degree.

This allows students to gain exposure — and in most cases, a salary — in their preferred career field well before they graduate, while providing employers a pipeline of trained future full-time employees.

As the signature feature of Drexel’s experiential model of education, co-op informs everything from what faculty members teach to how classes are conducted.

## A MODEL BUILT FOR CHANGE

SINCE 1891, the University has been guided by the words of its founder, Anthony J. Drexel: “I know that the world is going to change, and therefore, the University must change with it.” As we celebrate the centennial of the Drexel Co-op program, I am reminded of our rich history of rising to meet the challenges of our times.

In the midst of World War I in 1917, Drexel President Hollis Godfrey convened a summit of professionals from academia, industry and government. For two days, colleagues shared perspectives on how best to meet the need for experienced technical engineers in a post-war America. These discussions would be the catalyst for the Drexel Co-op program, a curriculum that combines classroom theory with six-month periods of work experience for degree credit. As Godfrey put it, “Education and industry will finally come together.”

Drexel remains as attuned to the most pressing problems of its day now as it was a century ago. In celebrating this anniversary, we recommit to the spirit in which the co-op program was created: To produce ready, engaged citizens with skills matched to those the world needs today *and tomorrow*.

We also celebrate experiential education more broadly, because while the co-op program is Drexel’s most durable and visible manifestation of that spirit, it doesn’t function in isolation, and it goes far deeper than a mere auxiliary program or side initiative. We infuse experience and engagement into every facet of a Drexel education. It’s why our students are co-authoring research papers with tenured professors. It’s why our faculty members conduct classes inside hospitals, prisons and community centers alongside residents of all walks of life. It’s why employers tell us their Drexel co-ops are better prepared than other hires. It’s why our alumni are launching businesses, earning patents and creating new products well before many of their peers have found their footing.

Drexel is *different*, and our whole-institution approach to practical, hands-on learning — rooted in our co-op experiences and nourished by an ever-expanding network of industry partnerships, research collaborations and community relationships — is what makes it so.

The model of education that Drexel has refined for over a century is uniquely suited to the modern world. Rapid advances in technology and society are transforming every industry, and America will rise or fall on its ability to develop talent capable of confronting dynamic shifts. I am confident that no university is better positioned than Drexel, philosophically and organizationally, to nimbly navigate the vibrations underfoot and ensure that every graduate has the personal resilience and professional competencies to contribute to work of the future.

Signed,



President John Fry  
 Drexel University

### 1919

*In the wake of WWI, Drexel Institute of Art, Science and Industry President Hollis Godfrey announces Drexel will support the post-war economy by creating a co-op program. The program has just 152 engineering students.*

### 1922

*The first co-op employers join Drexel’s network. Many are initially industrial companies involved in military defense. Some no longer exist, like American Pulley Co. and Pennsylvania Railroad, and a few are still in the network today, like DuPont.*

### 1923–29

*With the success of its first co-ops, Drexel adds co-op programs in chemical engineering, business, and retail management, and expands the engineering co-op schedule to five years.*

## A CENTRALIZED APPROACH

**1929**

*Drexel responds to massive economic layoffs by approaching smaller employers and extending the co-op work terms. Throughout the Great Depression, the unemployment rate rises from 3.2 in 1929 to 17 percent by 1939.*

**1933**

*Drexel takes a neutral stance on the National Recovery Administration and instructs co-op students not to picket or break union strikes.*

**1934**

*Drexel's four-year co-op in merchandising becomes a five-year co-op in retail management. The historic Wanamaker's department store in Center City (now a Macy's) begins hiring Drexel students, largely women.*

**1941**

*The U.S. enters World War II. In April 1940, about 13 million women make up the country's total workforce; five years later, that number was increased by more than 6 million women in a huge and historic period of growth.*

(CONT'D ON PG 21)

THE CENTENNIAL celebration provides an opportunity to introduce the Drexel Co-op program to prospective students and employers who are unaware of what it means that Drexel is “a co-op school.”

It also allows a moment to reflect upon the Steinbright Career Development Center's history of administering this signature University asset. Our advisers guide students and employers through the co-op journey. Over the years, we've deepened and enhanced the services we provide to ensure that those work experiences are mutually rewarding.

Incoming students are mentored by a career counselor who helps them prepare for the world of work. Students receive instruction from a mandatory “co-op 101” course with practical advice for a thoughtful job search, as well as résumé development and interview preparation. Counsel and advice continues throughout their college career and extends to graduating seniors and recent alumni.

Simultaneously, career services staff assist corporate recruiters with designing successful positions and strategizing their candidate search. Specialists within Steinbright cultivate prospective employer partners to develop new co-op positions in response to enrollment and industry trends. Drexel's goal is not to have the largest employer network, but to have a network that achieves the best workplace experiences for students and employers alike.

Some of the most meaningful, forward-oriented work done by Steinbright staff is to collect real-time feedback from students and employers. Feedback is used to improve the co-op experience, identify emerging technical skills and assess student proficiencies in areas that employers say are critical — such as problem solving, communication and teamwork. The data collected is shared with academic leadership to ensure that Drexel's curriculum remains current, relevant and market-sensitive in response to rapid industry change.

Because the University's ties to industry are important to ongoing experiential learning opportunities for students, Steinbright also works alongside a number of other University entities that partner directly with industry — notably the Drexel Business Solutions Institute — to ensure that Drexel students surpass the standards for talent in the region.

I hope this special anniversary publication clarifies how Drexel's Co-op program serves the University's mission to deliver the best, most relevant experiential learning available. I look forward to continued collaboration with faculty, administration and industry to advance cooperative education in the 21<sup>st</sup> century.

Signed,



Ian Sladen

*Vice President, Cooperative Education and Career Development  
Steinbright Career Development Center  
Drexel University*



**We're starting to see things that we've learned over 100 years of co-op make their way into insights and actions that can be reproduced in other places.**

**— Adam Fontecchio, director of the Center for the Advancement of STEM Teaching and Learning Excellence**

▼ In 1943, Drexel introduced an optional four-year co-op in home economics.



**OURS IS  
AMONG  
THE LARGEST,  
OLDEST  
EMPLOYER  
NETWORKS.**

**95%**  
of co-op employers  
surveyed in 2017  
say students were  
prepared for the  
needs of their  
organization.



FRONT:  
Chris Spurdle (BS engineering technology '14) stands in the shadows of giant vessels on the Philadelphia dry dock of his co-op employer, Aker Shipyard.

**OURS IS  
AMONG THE  
LARGEST,  
OLDEST  
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NETWORKS**

What do you get when you spend a century building partnerships with companies of all sizes, in all fields, across the United States and abroad? You get deep relationships with employers invested in cultivating the next generation of leaders and committed to a curriculum grounded in hands-on learning.

Our network of more than 1,500 co-op employers includes Fortune 500 companies, enterprising startups, and respected arts and cultural nonprofits. Many organizations have been hiring Drexel co-op students for decades.

Why do they return year after year?

Here's what they say.

# '...They bring skills we may not have...'

RICH CORNFORTH has spent nearly 40 years working at PECO, adapting to changes in the utility industry along the way. But he's found that a fresh, outside perspective from talented Drexel students can result in solutions that have eluded even him.

"Co-op students are just great resources," says Cornforth, who runs the engineering department at the Philadelphia-based natural gas and electric utility. "They bring skills that they've clearly picked up in their studies — data analytics and understanding the latest data tools, stuff like that."

PECO has been hiring Drexel co-ops for four decades and is one of the most loyal members of Drexel's co-op employer network. This is because at PECO, co-op students get real work done, and they are as valued as employees.

Cornforth has seen co-op students devise ways to automate rigorous tasks that have created lasting efficiencies by significantly reducing the time to complete them.

The students learn productivity hacks at Drexel that they bring with them to the job, which helps PECO's bottom line. But for the nearly 150 co-op students who work at PECO each year, there's always give and take.

PECO puts its co-op students through a rigorous onboarding and off-boarding process that includes five training sessions and optional career workshops with résumé reviews and mock interview scenarios. At the end of their co-op period, each student delivers a poster presentation on the project they completed. And these projects aren't just theoretical — some have gone on to see implementation and millions of dollars of funding.

"We count on the co-ops to be productive members of the staff," Cornforth says. "They do real work. They have real assignments. It's almost like your six-month co-op term is a six-month-long job interview."

The company also hires interns from other local schools, but Cornforth says Drexel's six-month-long co-op cycle is unique and builds in time for training and accomplishment.

In fact, when Cornforth meets with company colleagues in other regions, he makes them jealous.

"As we compared staffing levels, the number of people and the amount of work that would get done, my peers were like, 'Well, that's not fair, you have extra people. You're getting work done but I can't hire more full-time staff,'" he reminisces. "I said, 'Well, that's your fault. Hire co-ops.'"

**95%**  
of co-op employers surveyed in 2017 say students were prepared for the needs of their organization.

- ▼ Drexel engineering students Justin Sweeney and Gwynith Godin get summer field experience with their PECO mentor Kunal Shukla.



## WHAT EMPLOYERS SAY

### ► COMCAST CORP.

**“The Drexel Co-op program is highly regarded by Comcast because we know that the students who come to work here are serious about gaining valuable work experience and could one day follow in the footsteps of other co-ops who have become top performers on our full-time team.”**

Karen Dougherty Buchholz  
Senior Vice President

### ► INDEPENDENCE BLUE CROSS

**“I’ve had the pleasure of managing many Drexel students who’ve made and are making contributions whose benefits persist long after their co-op ends, and who have developed solutions that are being used many years later. Many started their co-ops with a surprising depth of technical knowledge and maturity, and even more have shown midway through their co-op that they can perform as well as seasoned software developers. I am fortunate to now count four co-op alumni on my team plus several others who have joined other teams here.”**

Jim Denyer  
Director of Information Governance  
Business Technology Services

### ► URBAN ENGINEERS

**“Drexel’s co-op program helped me launch my career, and I am proud to lead a company that utilizes the program to this day. Employers know that Drexel co-op graduates are more technically prepared than their peers and have learned the importance of ethics, which is hard to measure but is a key feature in someone you are looking to hire.”**

Kenneth Fulmer  
President & CEO

**TOP 25 CO-OP EMPLOYERS\*** Children’s Hospital of Philadelphia | PECO, an Exelon Co. | Comcast Corp. | Johnson & Johnson | University of Pennsylvania | Philadelphia Water Department | Lockheed Martin | Hospital of the University of Pennsylvania | PJM Interconnection | Susquehanna International Group | Thomas Jefferson University Hospital | SAP America | National Board of Medical Examiners | Estee Lauder/Northtec | CHUBB (formerly ACE USA) | Academic Internship Council | Goldman, Sachs & Co. | JPMorgan Chase & Co. | NAVSEA | FMC Corp. | Independence Blue Cross | Merck | Fox Chase Cancer Center | Macquarie Investment Management | Bristol Myers Squibb Co. \*2017–2018, excluding Drexel

▼ In the 1940s, retail management students honed their merchandising skills at the famed Wanamaker's department store in Philadelphia.



Drexel co-op graduates earn a starting salary

**18.5% HIGHER**

than the national average for newly employed college graduates.

**WE HAVE A CO-OP FOR EVERYONE.**



FRONT:  
Ridhima Phukan (BS culinary science '19) visited the Berlin Food Festival while working as a plant research co-op for Infarm, a German urban farming startup.

## WE HAVE A CO-OP FOR EVERYONE

“Where did you co-op?”

It’s the question that unites our alumni. Few universities have made cooperative education as integral to teaching and learning as we have.

Nearly as important is the question, why did you co-op? For most, it is a way to test drive career choices while delivering genuine value for some of the world’s leading companies in tech, finance, engineering and media.

For others, co-op means all of that and more: It’s a chance to learn from a mentor, travel the world, or pursue a passion.

Whatever the reason, our experiential approach to education nurtures driven graduates who are ready to make a real, dramatic impact in their field from day one.

# ‘I’ve been at every different level.’

MICHAEL BRITT '83, '90 was just 19 years old in 1979 when he arrived at the bridge engineering firm Modjeski and Masters in Mechanicsburg, Pennsylvania, for his first co-op. He pulled into a spot thinking he was lucky to snag a good one.

Later, someone tracked him down to tell him he couldn’t park there; it was for the principals. Whoops.

But Britt clearly found his place. Last year, he was named CEO of the 125-year-old company, which has made its name designing and inspecting iconic bridges such as the I-74 Bridge on the Mississippi River and the world’s busiest George Washington Bridge.

Now, of course, Britt has his own reserved parking place, and he says he wouldn’t be there at all if not for the Drexel Co-op program.

After that first co-op, the Mechanicsburg native returned for three more with the bridge builder, his responsibilities and pay rising, the latter from \$3.30 an hour to \$7.50. During one early inspection, he held the “SLOW” traffic sign. Soon, Britt was traveling the country, walking up the cables of “glorious bridges,” including Philadelphia’s major spans like the Benjamin Franklin Bridge (designed by the company’s founder Ralph Modjeski) and several along the Mississippi River. In Iowa, he found a loose pin that connected tress members. During his final co-op, he supervised a soil-boring contractor.

Despite his first-day snafu, Britt was offered a full-time position after he graduated. In 1983, he took his first project as a structural engineer working on designs for several Susquehanna River bridges. Five years later, he moved to the Federal Highway Administration, first as assistant bridge engineer for Pennsylvania in Harrisburg and later as assistant regional engineer in Baltimore. He also earned a master’s in civil engineering.

In 1995, the government sent Britt to Japan for a year to study the Akashi Kaikyo Bridge, then the world’s longest suspension bridge, and the Tatara Bridge, among the longest cable-stayed bridges.

Back stateside, Modjeski and Masters asked him to return as director of business development. Over two decades, he climbed the ranks to president in 2017, a preamble to taking the ultimate brass ring last year.

“It’s kind of daunting,” says the 59-year-old. “I just want to keep the torch lit. Make it better, if possible. I know a lot about the history. I understand the culture. I respect all that. I can relate to people at every different level, because I’ve been at every different level.”

Drexel co-op graduates earn a starting salary **18.5% HIGHER** than the national average for newly employed college graduates.

- ▼ Michael Britt is CEO of Modjeski and Masters, the same engineering firm where he co-op'd at 19. The firm oversaw design of Philadelphia's Benjamin Franklin Bridge 100 years ago.



## WHY DID YOU CO-OP?

# 89%

of students surveyed in 2017 say their co-op position met or exceeded their expectations.

### ► OWNERSHIP

While on co-op with Philadelphia-based startup Lia Diagnostics, Riley Stanford created a patent-pending film for the firm's flushable pregnancy test, which is close to commercialization.

**"This feels big. It's definitely a project I'm proud to be involved with. What they are doing is good for the environment and good for women, and both are things that I care passionately about. The Drexel co-op system ultimately gave me the chance to see everything through and affect change for the company."**

Riley Stanford '19  
College of Arts and Sciences  
Lia Diagnostics

### ► PRESTIGE

Brian Lofink is one of Philadelphia's most high-profile chefs, with a reputation built at Kraftwerk, The Sidecar Bar & Grille, and now as executive chef at Terrain restaurant in Glen Mills, Pennsylvania. He says it likely wouldn't have happened without the opportunity to co-op for acclaimed chef and five-star restaurateur Georges Perrier of Le Bec Fin fame.

**"Without working in that specific co-op, I'm not sure I would have lasted this long in the restaurant industry. It was such an intense period — immersive learning — that it set up my whole career. It catapulted me ahead of my peers because, by the time I left, I was 24 years old and had worked in one of the best restaurants in the city with one of the best chefs in the world."**

Brian Lofink '03  
Department of Food and Hospitality Management  
Brasserie Perrier

### ► IMPACT

Ashleigh Jugan worked night and day for Save Vietnam's Wildlife to protect a critically endangered species few have heard of: the Sunda pangolin. The pangolin is one of the most trafficked mammals in the world for its keratin scales and meat.

**"I couldn't even describe a more ideal job for myself. Every day I felt like I was making a difference in the world, helping to ensure the Sunda pangolin did not go extinct. I've never worked so hard, or enjoyed a job as much as I did working there."**

Ashleigh Jugan '18  
College of Arts and Sciences  
Save Vietnam's Wildlife

# 88%

percent of students surveyed in 2017 reported that their co-op was relevant to their career objectives.

## FOCUS ◀

*Billy McCullough completed an entrepreneurship co-op through the Charles D. Close School of Entrepreneurship, which provides \$15,000 of capital and workspace in the Baiada Institute for Entrepreneurship for Drexel students to make their business dreams a reality. The opportunity enabled McCullough to launch Puerh Panda, a lifestyle brand selling small-batch tea and handmade tea accessories.*

**“When you already have a passionate idea for something, this is a great co-op. I’m a very passionate person, but my passion is easily pulled by other things. This helped me narrow down and learn to take it a step at a time, put out one type of tea and try to build an audience. That mentality was super helpful.”**

Billy McCullough '19  
College of Arts and Sciences  
Puerh Panda

## FIT ◀

*Ted Bryce learned the securities business as an assistant on Susquehanna’s international trading desk, where he worked closely with traders and one of the owners. He went on to become chief operating officer of the firm.*

**“I wanted to actually work in an industry before committing to a career there. During my second co-op, I worked for a securities firm and discovered the industry that checked all of my boxes. My third co-op was at Susquehanna International Group, where I found the firm within that industry that was a perfect fit for me. I’ve been at SIG ever since.”**

Ted Bryce '93  
College of Business & Administration  
Susquehanna International Group

## WHY DID YOU CO-OP?

## ACCESS ◀

*Having co-op experience helped Adam Eichen get the attention of recruiters at Lockheed Martin, a company he had applied to without success several times before starting his graduate program at Drexel. Upon graduation, he was quickly hired at the company full-time.*

**“I definitely felt like I was taken more seriously as a Drexel co-op. The name holds weight. ... So, I advertise Drexel left and right. I basically tell people if you want a job, go to Drexel.”**

Adam Eichen '19  
College of Biomedical Science and Health Systems  
Lockheed Martin

## ▶ LEADERSHIP

*Nicole Kalitsi built her position from scratch as the very first coordinator for diversity, equity and inclusion at the Greater Philadelphia Cultural Alliance. Hers was among the first of 30 co-ops financially supported by a \$3 million endowment from the Lenfest Foundation to fund co-ops in nonprofit and cultural organizations that would otherwise be unable to afford it.*

**“Being able to now say that I have had this experience, that I can be a self-starter and it’s proven — I can show you what I actually did — that’s amazing. I don’t think I would ever have gotten this experience anywhere else.”**

Nicole Kalitsi '20  
College of Arts and Sciences  
Greater Philadelphia  
Cultural Alliance



**72%**

of students surveyed in 2017 would work for their co-op employer again.

**DIRECTION**

*Towfique Raj's co-op introduced him to the emerging field of genetics. He co-op'd in a Children's Hospital of Philadelphia (CHOP) lab doing cutting-edge genetic research on brain disorders and after graduation was awarded the prestigious Gates-Cambridge Scholarship from the Bill & Melinda Gates Foundation. He now runs his own genetics lab at Mount Sinai in New York.*

**"Because of the co-op program, I was able to start doing research early on in my undergraduate career, when the genomics revolution was just beginning. That's very unique. My co-op at CHOP gave me an opportunity to interact full-time with undergraduate and PhD students, fellows and medical PhDs, and I had excellent mentors. Just being around them was amazing."**

Towfique Raj '05  
College of Computing & Informatics  
Children's Hospital of Philadelphia



**WHY  
DID YOU  
CO-OP?**

**TOP 5**

countries of co-op employment in 2017–18:

China	<b>44</b>
Singapore	<b>23</b>
Germany	<b>18</b>
India	<b>14</b>
Australia	<b>12</b>

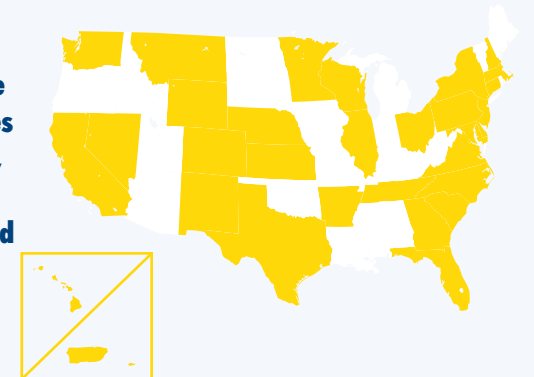
**See the World**

**IN 2017–2018, 214 STUDENTS WORKED FOR COMPANIES IN 38 COUNTRIES OVERSEAS.**

● Top 5

**STATESIDE**

Drexel co-ops are active in 31 states plus Washington, D.C., the U.S. Virgin Islands and Puerto Rico.



▼ In the 1980s, Ford Motor Co. employed a large number of Drexel co-ops in its manufacturing plants.



**87%**  
of employers surveyed would consider rehiring their co-op student.

**WE CONNECT  
THE WORKPLACE  
AND THE  
CLASSROOM.**



**FRONT:** Future chefs in Drexel's Food Lab invent commercial recipes and solve food system sustainability challenges for culinary clients.

## WE CONNECT THE WORKPLACE AND THE CLASSROOM

The Drexel Co-op program is just one way that we deliver on our mission to combine real-world experience with classroom rigor.

On campus and off, students consult with industry professionals on projects that expose them to the world of patents, design, research, engineering and much more. Through consulting opportunities, research and development, and cultural projects, students create original solutions to corporate and nonprofit challenges.

Meaningful links to industry are used to inform University curricula and programming — ensuring that academic offerings remain relevant to the needs of industry and to students seeking jobs.

Through our close ties to industry, we see what's working and what's not, and we adapt our teaching accordingly.

**Q:**

# How do we know experiential education delivers results?

## **A: WE STUDY IT LIKE IT'S A SCIENCE.**

Drexel is home to the Center for the Advancement of STEM Teaching and Learning Excellence (CASTLE), run by an interdisciplinary team working to identify best practices in experiential education. The CASTLE group builds tools to assess co-op as well as other real-world learning programs such as study abroad and service-learning to understand how experiential opportunities impact students.

By asking questions and examining extensive co-op data, Drexel is able to create new areas of academic excellence that position our graduates for cutting-edge careers and solidify our leadership in the cooperative education field.

**87%**  
of employers surveyed would consider rehiring their co-op student.

**83%**  
of employers surveyed in 2017 rated students' performance very good or excellent.

**Q:**  
**How do we infuse real-world connections into our classrooms and projects?**

**A: WE PARTNER WITH INDUSTRY.**

Through Drexel's Business Solutions Institute, companies collaborate with Drexel on research, custom training and evidence-based solutions.

We connect companies such as Vanguard, Pfizer, Johnson & Johnson, Campbell's Soup Co. and Independence Blue Cross to faculty and students through interdisciplinary projects, classes, executive education opportunities and custom industry lab research. Past projects have related to business analytics, the "internet of things" and UX/UI experience testing.

Drexel students also solve culinary challenges for food industry clients such as The Hershey Co., Bumblebee and Aramark through the Food Lab, a student-run interdisciplinary food research group. Since its founding in 2014, the Food Lab has earned a reputation for developing innovative recipes and sustainable food products that have led to patent applications and licensing agreements.

Drexel also partners with organizations in the arts and cultural and nonprofit space through the Lenfest Center for Cultural Partnerships. Since 2017, the center has used its \$3 million endowment to fund 30 (previously unpaid) co-ops at organizations like the Philadelphia Museum of Art, Historical Society of Pennsylvania, Delaware Museum of Natural History and Greater Philadelphia Cultural Alliance.

As Drexel further develops its tech-commercialization resources, opportunities for partnerships will accelerate. For example, the University runs ic@3401, one of the city's most diverse early-stage startup incubators, where faculty and students collaborate with independent entrepreneurs. And in its final phases, the massive building complex Schuylkill Yards will house academic classrooms and innovative corporations side by side in a collaborative environment.

**Q:**  
**How do we know our curriculum matches the needs of the workplace?**

**A: WE ASK.**

We ask students returning from co-op what they learned. We ask employers that hire our students what those students need to know. And an interdisciplinary faculty committee meets regularly with co-op advisors to review feedback from employers and students. The result is better programs across the University.

Here are some recent ways co-op has transformed how we teach:

- **The Design & Merchandising program in the Westphal College of Media Arts & Design** eliminated outdated visual design and art history courses. Microsoft Excel skills and practical retail math for calculating mark-ups and stock-to-sales ratios were built into courses. Environmental science replaced physics as the required science credit, in recognition of the fashion industry's impact on the environment.
- **The College of Computing & Informatics** developed new required courses that bridge theory and practice. One uses project-based teaching to show students how theoretical computing concepts relate to typical industrial applications they may encounter on co-op (for example, the development of a custom database for a specific business).
- **The Department of Communication in the College of Arts and Sciences** accelerated when students take required courses after second-year students returning from their first co-ops reported they needed more foundational courses earlier in their studies.
- **The Goodwin College of Professional Studies** shortened in-class instruction time and began offering more project-based learning opportunities. Rather than offer à la carte courses, the school created an official pathway so adult learners can follow a logical course progression toward certification.

**64%**  
of job applicants have at least one job offer upon graduation.

▼ In the 1980s, students doing land surveys for their co-ops had access to cutting-edge data collection tools capable of in-field calculations.



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**1943**

*The five-year retail management co-op is reduced back down to a four-year co-op. An optional four-year co-op in home economics is introduced.*

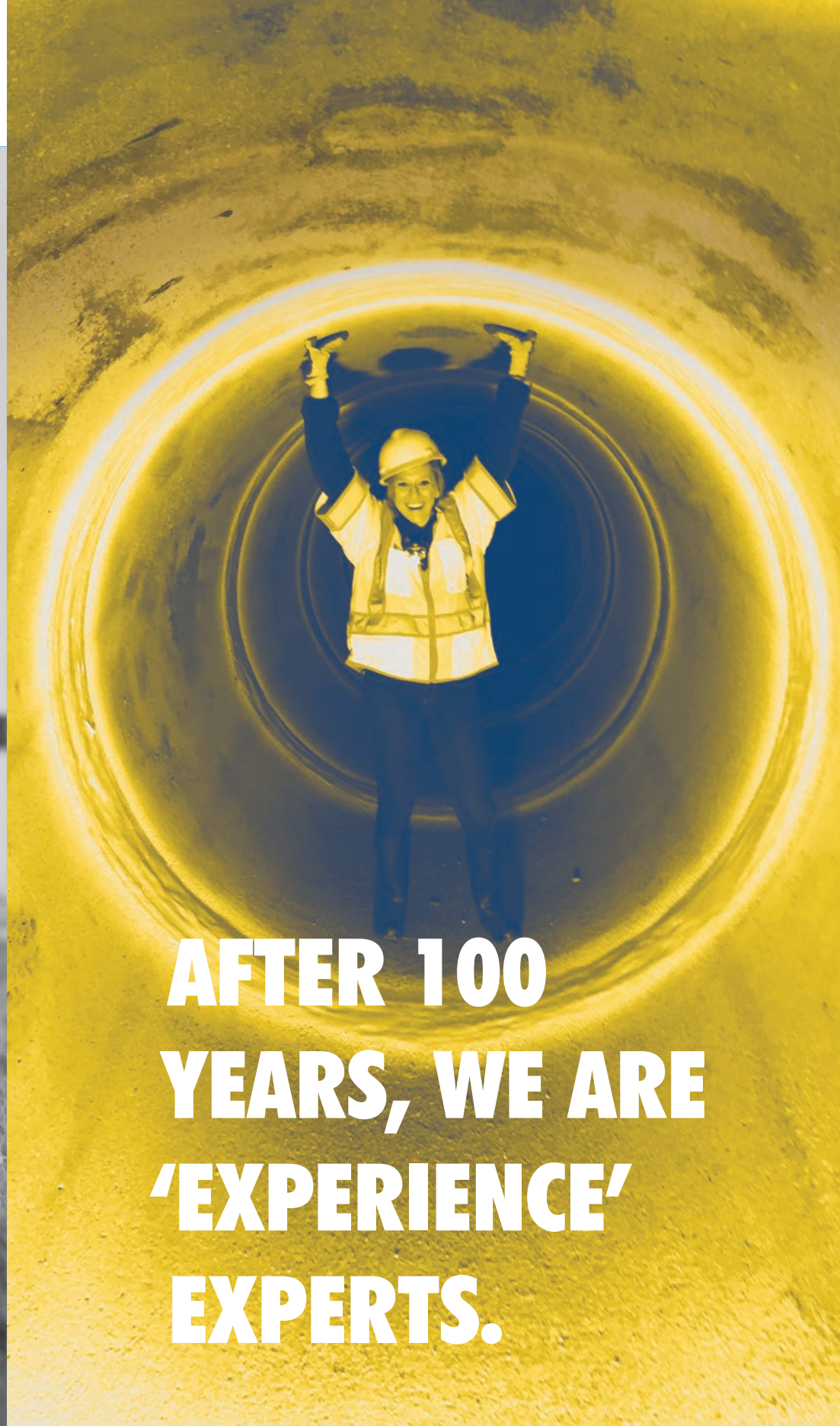
**1950s**

*During the Cold War, some scholars argue that cooperative education will help to preserve freedom. One writes that cooperative education could teach students that "only the productive can be strong, and only the strong can be free."*

**1956**

*There are now 62 U.S. schools with some version of a cooperative model. The concept is spreading beyond engineering to business, architecture and other fields.*

**AFTER 100  
YEARS, WE ARE  
'EXPERIENCE'  
EXPERTS.**





FRONT:

Lauren Kujawa's (BS civil engineering '18) co-op with the Philadelphia Water Department took her deep into the city's storm water system.

## AFTER 100 YEARS, WE ARE THE 'EXPERIENCE' EXPERTS

When Drexel University — then known as the Drexel Institute of Art, Science and Industry — launched its co-op program in 1919, it was at the perfect moment. World War I had just ended, the industrial revolution was peaking, and industry was hungry for managers versed in technology, innovation and business. Within academia, a nascent cooperative education movement had inspired a handful of schools to adopt programs that blended classroom learning with on-the-job experience.

Under Drexel's second president Hollis Godfrey, the young vocational institute broadened into a modern, degree-granting university for men and women of all races, classes and religious backgrounds. Godfrey's decision to embrace a cooperative education system preserved the founder's progressive pragmatism and gave Drexel the tools to sustain a curriculum that could continuously adapt to the times.

Co-op started with just 152 engineering students working at local companies. Within 10 years, Drexel established co-ops with Honeywell, Bell, RCA, Bethlehem Steel, General Electric and Westinghouse.

Today, the program includes more than 1,500 companies employing 5,300 students from across 89 disciplines, constituting about 92 percent of all Drexel undergraduates.

# In the past 20 years...

...**31,000 RECRUITERS AT 17,800 ORGANIZATIONS HAVE HIRED STUDENTS THROUGH THE DREXEL CO-OP PROGRAM. ...46,370 STUDENTS HAVE WORKED IN 91,942 CO-OP EXPERIENCES WITH 12,701 EMPLOYERS. ...1,935 STUDENTS HAVE WORKED IN 2,204 CO-OP EXPERIENCES ABROAD IN 108 DIFFERENT COUNTRIES, FROM ALBANIA TO ZIMBABWE. ...45,806 STUDENTS HAVE WORKED IN 89,738 CO-OP EXPERIENCES IN 48 U.S. STATES PLUS THE DISTRICT OF COLUMBIA, PUERTO RICO, AND U.S. VIRGIN ISLANDS. ...THE DREXEL CO-OP PROGRAM HAS GROWN FROM 3,526 STUDENTS IN 3,604 EXPERIENCES IN 1999 TO 5,324 STUDENTS IN 5,440 EXPERIENCES IN 2017...**

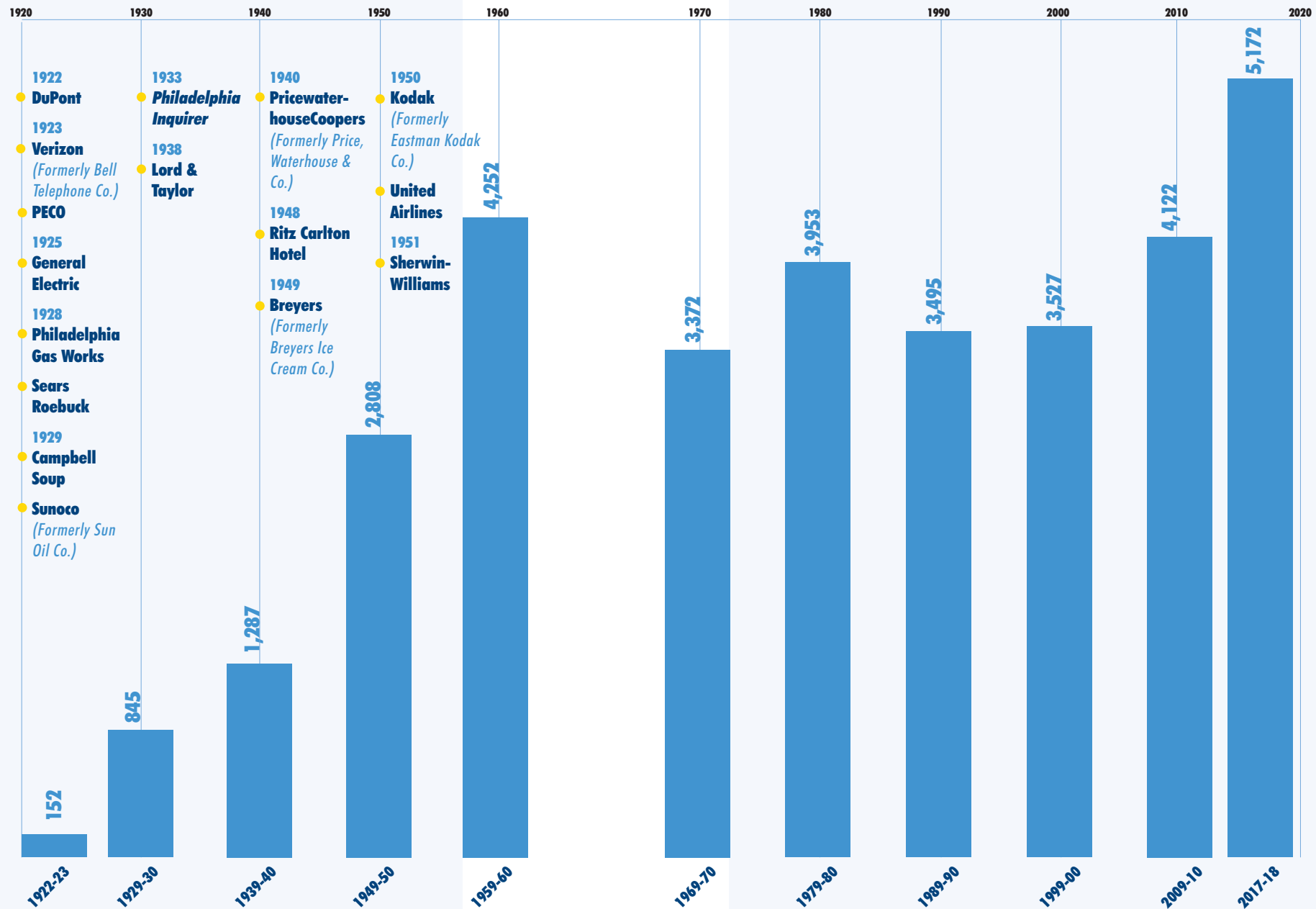
...and counting.

(CONT'D FROM PG 2)

- ▶ **1943**  
*The five-year retail management co-op is reduced back down to a four-year co-op. An optional four-year co-op in home economics is introduced.*
- ▶ **1950s**  
*During the Cold War, some scholars argue that cooperative education will help to preserve freedom. One writes that cooperative education could teach students that "only the productive can be strong, and only the strong can be free."*
- ▶ **1956**  
*There are now 62 U.S. schools with some version of a cooperative model. The concept is spreading beyond engineering to business, architecture and other fields.*

# DREXEL CO-OP By the Decade

■ # OF STUDENTS IN COHORT  
● LONGEST-RUNNING EMPLOYERS (STILL IN THE NETWORK)



**1958** ◀

A group of nearly 400 firms that hire co-op students recommends a formal study of existing working models of cooperative education. The result is a nationwide survey of students, graduates, faculty administrators and cooperative firms to assess cooperative education and its implication for national welfare. The benefits of co-op reported by students and institutions are striking:

- It gave students greater meaning in their studies.
- It increased motivation for academic work.
- It improved skills in human interactions.
- It made education more affordable.
- It brought faculty closer to colleagues in industry.
- It freed up facilities for students who were on campus.
- It gave business firms a pipeline of trained talent.
- It gave students and faculty great contacts in the field.
- It brought colleges closer to their communities and vice versa.

**1963** ◀

The National Commission for Cooperative Education is established, with a goal of doubling the number of cooperative institutions from 60 to 120 within 10 years.

**1968** ◀

As part of the Higher Education Amendments of 1968, Congress makes \$10.75 million in grants available to help institutions of higher education establish new co-op plans.

**1971** ◀

There are now 178 institutions of higher education with some kind of cooperative program.

▶ **1989**

More than 900 U.S. colleges and universities now have cooperative programs.

▶ **1996**

Approximately 1,000 cooperative programs exist in the United States with approximately 200,000 students participating.

▶ **2005**

More than 1,500 universities in 43 countries have cooperative education programs.

▶ **2006**

A U.S. News & World Report article names Drexel one of the best "fully co-op" schools in the country.

▶ **2019**

Today, there are many cooperative programs in existence, but only a small number are fully committed to experiential learning, with full-time, long-duration, for-credit alternating work periods and a centralized, formal employer role in curriculum design...

**...This is what makes Drexel different.**



**There is a clear difference between the student who has been on co-op and the one who hasn't. Students come back and they are changed — they manage their time better, they ask engaging questions, they're more proactive and intentional in their learning. They say 'I now think of my classes like meetings and my homework are my projects.' And, 'I used systems and calendars to manage that just like I did while I was on co-op.' That's what experiential education brings. And co-op allows us to formalize the experiential model and unify it across the whole University.**

**— Bill Mongan, assistant professor and associate department head of undergraduate affairs, College of Computing & Informatics**

▼ International business and marketing student Johnny Zhu visited the solar-powered "trees" in Gardens by the Bay while on co-op with Singapore's Strategic Public Relations Group agency.





DREXEL UNIVERSITY

**Steinbright**

Career Development Center

**Drexel University Steinbright  
Career Development Center  
3201 Arch Street  
Cooperative Education, Annex Suite 110  
Career Services and Co-op Faculty, Suite 250  
Philadelphia, PA 19104  
215.895.2185  
[hireadragon@drexel.edu](mailto:hireadragon@drexel.edu)**

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