

**INVENTIVE
ACTIVITY
FY 2021**

Northwestern | INVO
Innovation and New Ventures

Dear members of the Northwestern community,

The COVID-19 pandemic derailed so much of our daily life. As labs closed, remote work emerged an unavoidable necessity, and in-person collaboration stalled, I wondered what might become of our lively innovative community at Northwestern.

In no time, I received an emphatic answer.

Committed to confronting a mounting public health crisis, our faculty and students leveraged their expertise to produce ventilators, reposition therapeutic programs, and develop diagnostic testing. Such resilient, noble-minded efforts underscored our community's enterprising spirit and fueled INVO's resolve to service our community.

In addition to automating many of our critical operations, we adapted to the new virtual world by showcasing Northwestern innovation through Tech Talk and Startup Demo videos – channels that increased the visibility of Northwestern-bred innovations to potential partners and investors around the globe.

INVO also expanded translation beyond our traditional focus in STEM fields. For instance, recognizing critical needs around fair access to education, we devoted a round of our N.XT Fund to stimulate translation of four education-enhancing technologies from the social sciences and humanities.

Our momentum as a community of big thinkers and status quo challengers continues propelling our translational and entrepreneurial ecosystem, a reality this report highlights. Whether through groundbreaking discoveries, repurposing old technologies, or increasing efficiencies, our innovators – who touch fields ranging from advanced materials and therapeutics to manufacturing and health services – embrace a collective mission to stir change and unlock solutions that improve society and impact lives.

Determined to support these efforts, INVO continues crafting strategic partnerships designed to elevate commercialization prospects. The new University Technology Licensing Program (UTLP), for example, enables companies to easily explore



Alicia Löffler, PhD

and access technologies from Northwestern and 14 peer research universities, while INVO's still-growing collaboration with Deerfield Management is accelerating the translation of novel biomedical technologies, such as pharmacology researcher Paul DeCaen's work on kidney disease.

Not to be overlooked, our student entrepreneurs continue tackling societal problems with daring, industrious intent. The Garage thrives as a dynamic hub for student entrepreneurship, headlined by a record number of applicants in 2021 for VentureCat, Northwestern's annual student startup competition.

Of course, it does not stop there.

Spurred by faculty insights gained from our strategic framework committee and the entrepreneurial thinking of Northwestern leadership and the Board of Trustees' Innovation and Entrepreneurship Committee headed by Kimberly Querrey, the new KQ startup accelerator captures this energized growth. The Evanston-based physical space will drive the commercialization of deep science technologies and serve as a community manifestation of our entrepreneurial leadership.

As much as the pandemic halted some elements of life, please know this: we carry a renewed sense of purpose into the bright days ahead.

Alicia Löffler
Executive Director, INVO
Associate Provost, Innovation and New Ventures
Associate Vice President for Research

235
INVENTIONS DISCLOSED

695
PATENT APPLICATIONS

220
AGREEMENTS EXECUTED

4.8
MILLION IN LICENSING
REVENUES, DOLLARS

240
PATENTS ISSUED

15
STARTUPS WITH
NORTHWESTERN IP

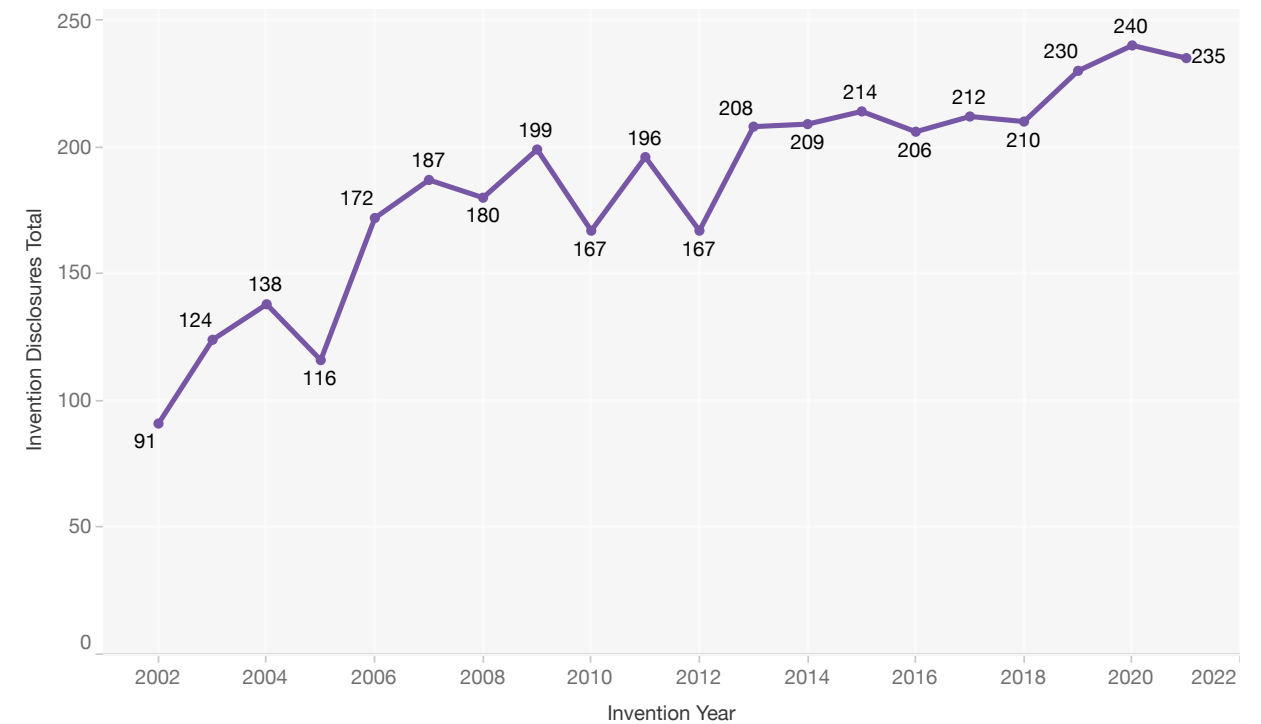
NORTHWESTERN INVENTIVE ACTIVITY

Figure 1 illustrates invention disclosure activity since 2002. In FY 2021, INVO processed 235 invention disclosures.

Inventorship spans both campuses. Figure 2 represents the distribution of inventive activity by school. The McCormick School of Engineering and the Feinberg School of Medicine have the largest shares, followed by the Weinberg College of Arts and Sciences.

Figure 3 shows the distribution of inventions by category. Materials and Industrial Processes had the largest share of the inventive output followed by Therapeutics. It is important to note that many inventions in the areas of chemistry, computer science, and materials are considered platform technologies with undefined markets. For example, a new software invention might find applications in the future in a variety of markets such as energy, consumer, and biomedical.

FIG. 1
INVENTION DISCLOSURES, 2002-Present



SOSSINA HAILE + SAFCell

Sossina Haile has devoted the last 20 years of her professional life to alternative energy and for good reason: like so many others, she recognizes the environmental crises encircling the world.

SAFCell, a transformative energy technology company that first sprouted from Haile’s materials science lab at the California Institute of Technology, represents Haile’s enterprising efforts to ensure a brighter, more sustainable energy future. SAFCell develops solid acid fuel cells for portable, stationary, and mobile applications, all of which run on hydrogen as well as commercially available liquid fuels.



Prof. Sossina Haile

“We’re at code red as a planet and we need to pursue global energy sustainability.”

Headquartered in Pasadena, California, the 12-year-old company began as a fuel cell company converting hydrogen into electrical power. Recognizing that a hydrogen delivery infrastructure was years away, the company shifted to methanol as an energy source and has developed a 50-watt system running exclusively on the simple alcohol. The system, SAFCell’s first commercial product, can operate unattended for months at a time in demanding climates.

With interest in hydrogen returning, but the delivery infrastructure still years away, SAFCell is exploiting its unique technology in a mode that uses easily transported liquid fuels, such as ammonia, to generate hydrogen on demand for fuel cell vehicles and other applications.

Flexible, efficient, and cost-effective, including operating in a mid-temperature range that eliminates the need for costly high-temperature materials in the auxiliary components, SAFCell’s fuel cell technology offers a compelling value proposition in the green energy market.

Over its lifetime, the company has been granted more than 20 patents and captured more than \$35 million in contract, grant, and private funding to spur commercialization efforts. And since Haile arrived at Northwestern in 2015, INVO has helped SAFCell secure additional patents from the Haile Lab’s continued work and connected the young company to inventive partners sharing a similar environmental-minded mission.

“We’re at code red as a planet and we need to pursue global energy sustainability. I know we can get there, as long as we make climate solutions a priority and put capital behind ambitious efforts like SAFCell.”

-Sossina Haile, Walter P. Murphy Professor of Materials Science and Engineering, McCormick School of Engineering

FIG. 2
INVENTIONS BY SCHOOL

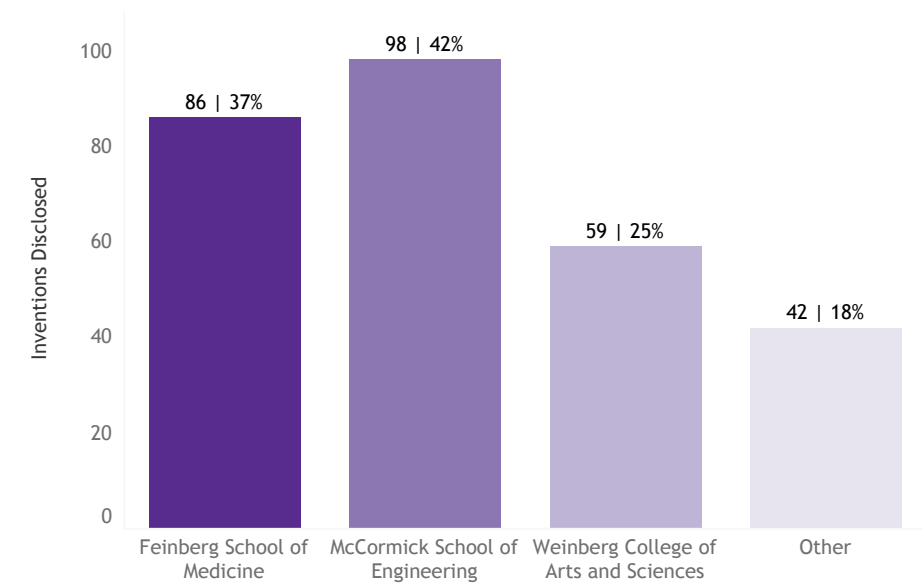
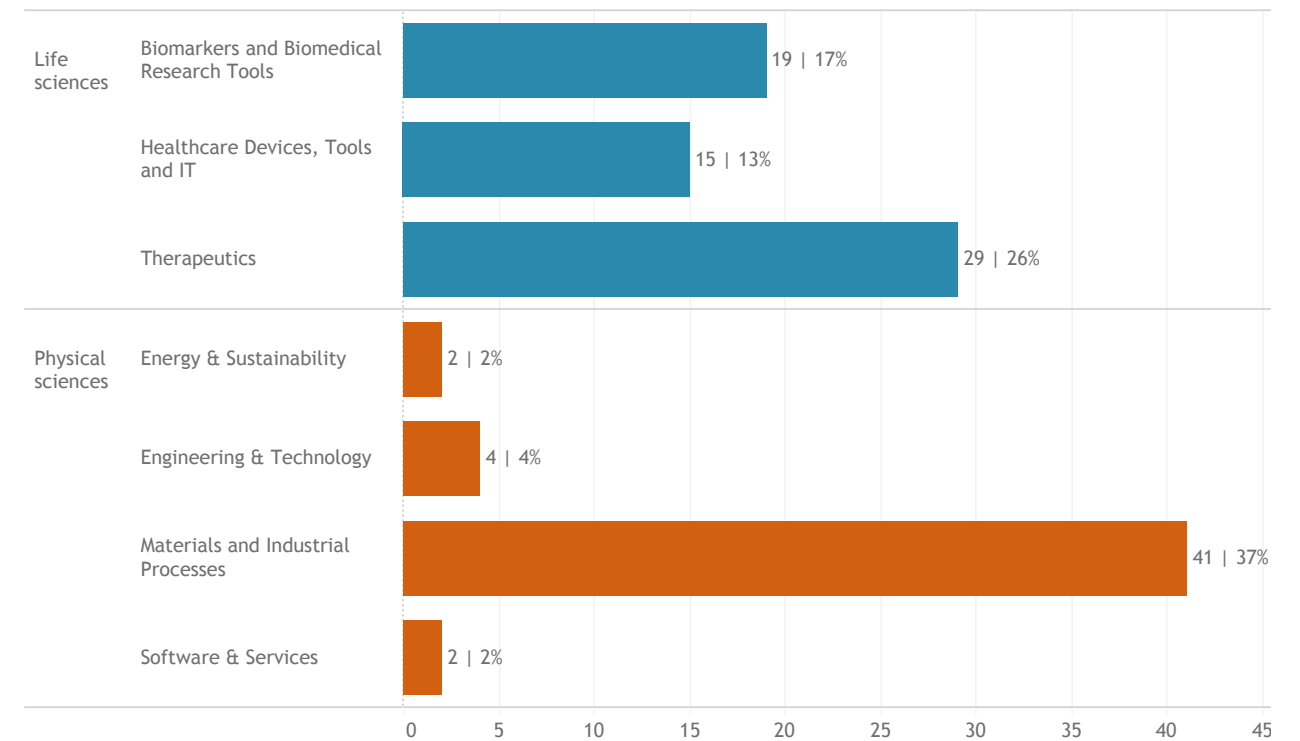


FIG. 3
INVENTIONS BY CATEGORY / INDUSTRY PIPELINE



A COMMUNITY OF STARTUPS

A new startup accelerator near Northwestern University's Evanston campus will propel innovative technologies from the lab to the marketplace and showcase the impact of research and technology to the broader Northwestern community.

Fueled by a \$50 million appropriation by the Illinois General Assembly intended to foster economic development, a \$25 million gift from Northwestern Innovation and Entrepreneurship Committee chair Kimberly Querrey, and a \$3 million grant from the U.S. Department of Commerce, the accelerator – named KQ to honor Querrey's prominent involvement – will host a rich



1801 Maple - the home of KQ in Evanston, IL

“The new INVO technology accelerator not only provides valuable innovation space for startup companies like Volexion, but also ensures we can efficiently leverage the latest innovations, expertise, and facilities on campus, which is critical to expediting and maximizing successful commercialization outcomes.”

pipeline of startups addressing some of society's most pressing life sciences challenges in human health, materials, medical diagnostics, battery technology, and more.

Starting with three floors at 1801 Maple, a close-to-campus home intended to ensure the empowered involvement of faculty and students, KQ's first phase will host up to a dozen startups. Through this initial phase, INVO will assess operational, programming, and project costs to inform future expansion to the three additional floors and reach full capacity that reflects the diversity of ideas and innovation at Northwestern.

Six companies have already been tabbed for immediate KQ residence, including Volexion and Rhaeos, entities ignited by research from the labs of Northwestern faculty members Mark Hersam and John Rogers, respectively.

When complete, KQ will eventually provide its startups ready-to-go wet and dry lab space packed with equipment and tools as well as shared foundries. Providing a modern, science-ready home removes one of the principal

hurdles fledgling companies face, thereby jumpstarting their growth and demonstrating to faculty as well as students the possibilities once innovation leaves the lab.

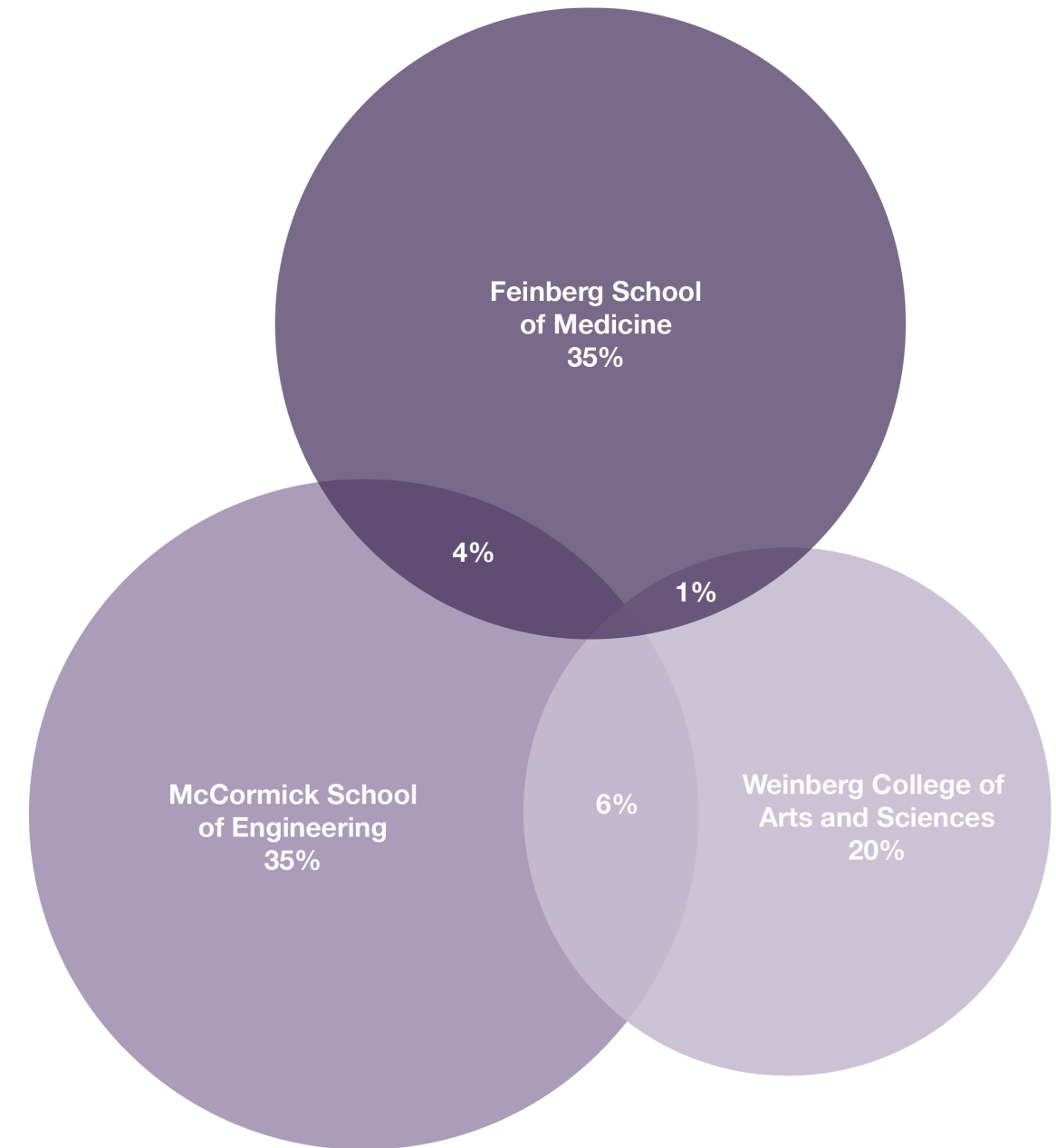
Even more important than the physical space, however, the KQ accelerator will build a community of startups and promote a robust intellectual environment that accelerates product validation and optimization. Through coaching, networking, training programs, and new business approaches, startups will learn and evolve while pursuing external funding and commercialization.

“The new INVO technology accelerator not only provides valuable innovation space for startup companies like Volexion, but also ensures we can efficiently leverage the latest innovations, expertise, and facilities on campus, which is critical to expediting and maximizing successful commercialization outcomes.”

-Mark Hersam, the Walter P. Murphy Professor of Materials Science and Engineering, McCormick School of Engineering

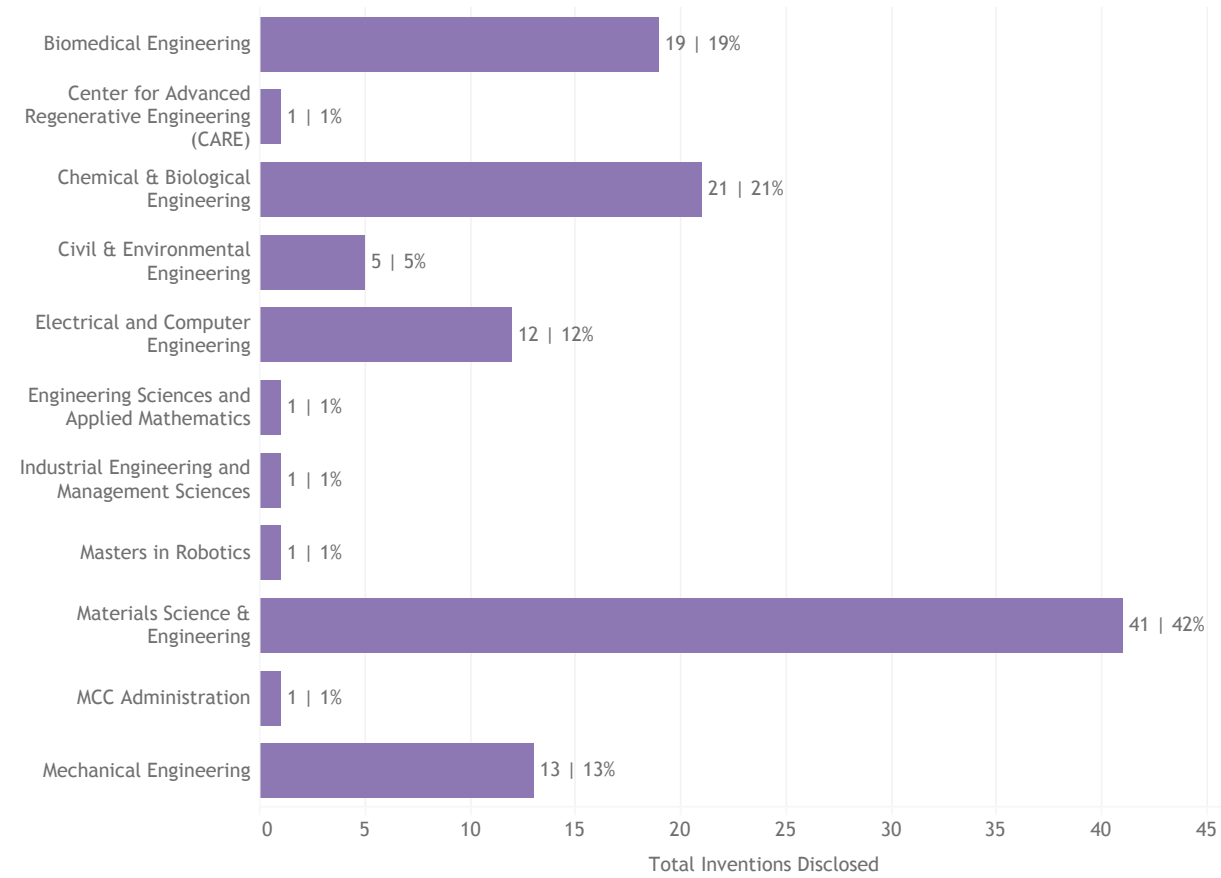
FIG. 4
COLLABORATION BETWEEN SCHOOLS

Northwestern's interdisciplinary approach is displayed by the co-inventorship activity among different schools and departments.

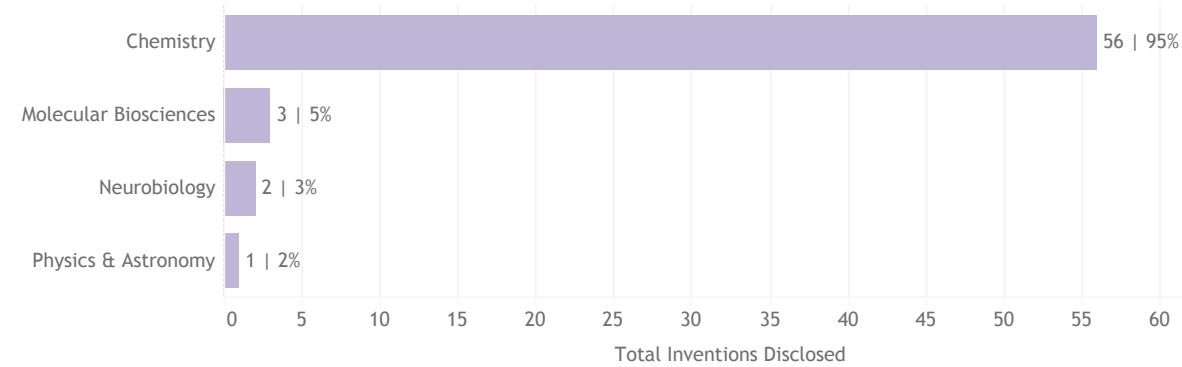


Figures 5, 6, and 7 illustrate inventive activity within each school.

**FIG. 5
McCORMICK SCHOOL OF ENGINEERING INVENTIONS BY DEPARTMENT**



**FIG. 6
WEINBERG COLLEGE OF ARTS AND SCIENCES INVENTIONS BY DEPARTMENT**



**FIG. 7
FEINBERG SCHOOL OF MEDICINE INVENTIONS BY DEPARTMENT**

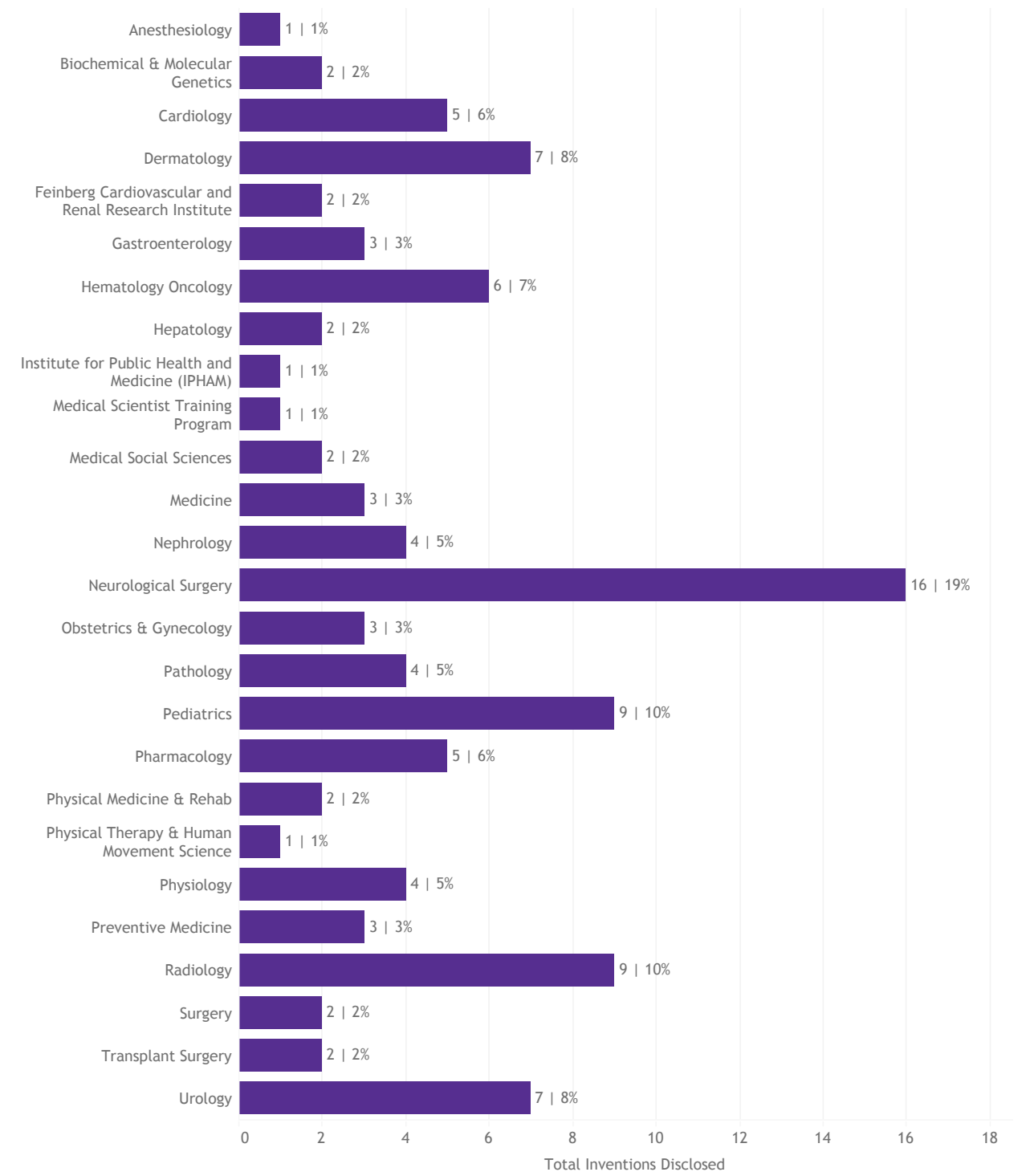


FIG. 8
INVENTORS AMONG TENURED AND TENURE-ELIGIBLE FACULTY

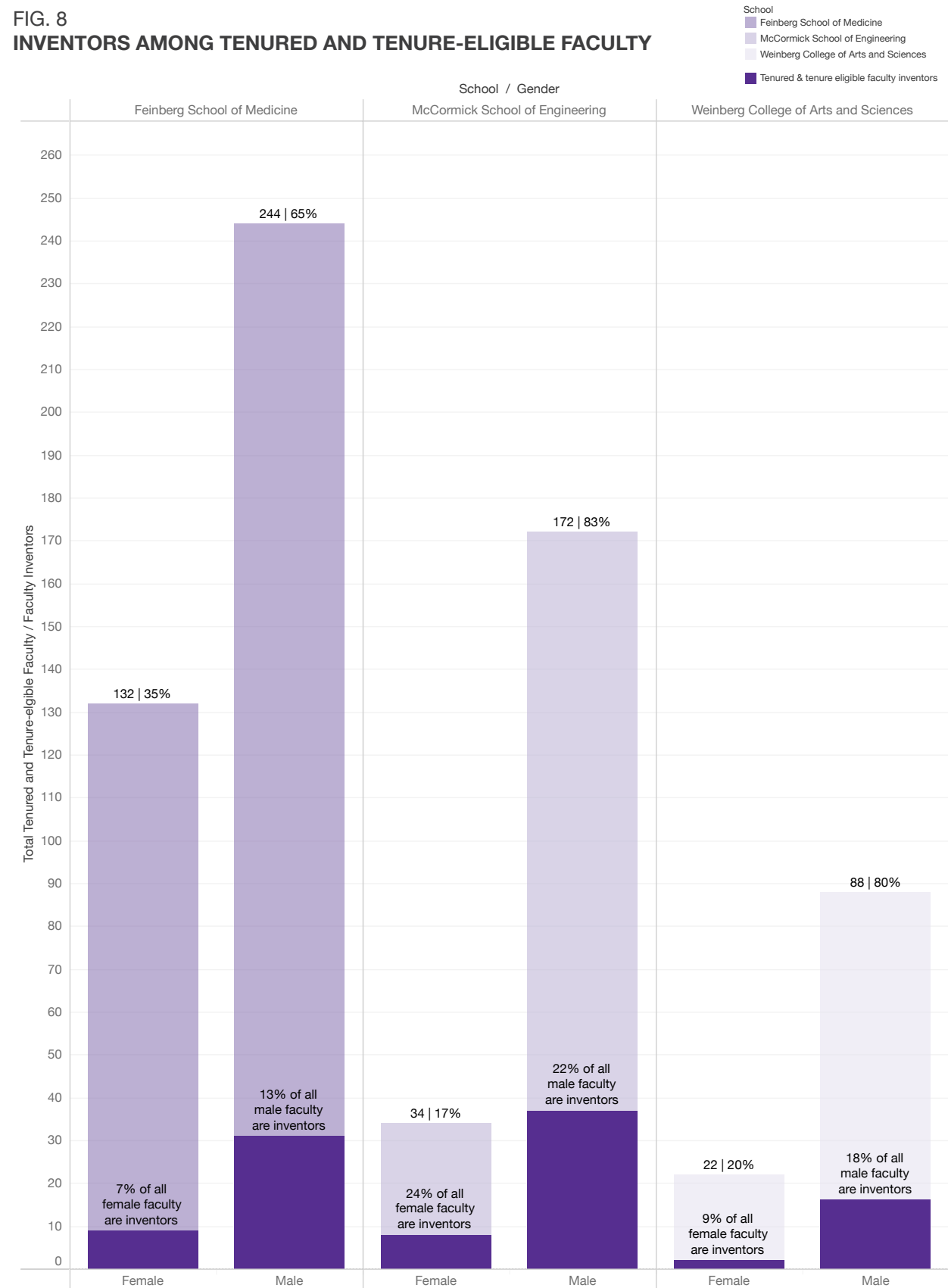


Figure 8 represents the gender distribution of tenured and tenure-eligible faculty and the percentage who disclosed inventions during FY 2021.

Weinberg College of Arts and Sciences percentages represent faculty from the departments of Chemistry, Molecular Biosciences, Neurobiology and Physics & Astronomy.

As an example, the first bar in Figure 8 shows that 7% of the total female tenured and tenure-eligible faculty at FSM have disclosed inventions during FY 2021.

**BY PROMOTING DIVERSITY IN OUR ECOSYSTEM,
THE QUALITY OF OUR INVENTIONS INCREASES**

SALLY McFALL AND DAVID KELSO + MINUTE MOLECULAR DIAGNOSTICS

Founded in 2017 as a spinout of the Northwestern University Center for Innovation in Global Health Technologies, Minute Molecular Diagnostics (M2Dx) produces analyzer and cartridge-based tests that perform viral extraction at the point of care. Developed by Northwestern scientists Sally McFall and David Kelso, the technology aims to provide clinicians as well as patients fast, accurate results to various conditions where speed matters, such as C. diff, MRSA, influenza, hepatitis C, and HIV.



DASH (Diagnostic Analyzer for Specific Hybridization)
Photo courtesy of Minute Molecular Diagnostics

With the onset of the COVID-19 pandemic in early 2020 ushering in robust need for quick, reliable testing, however, Minute Molecular transitioned its focus exclusively to the novel coronavirus.

“We know it can make a real difference in people’s lives.”

Sparked by a \$21.3 million grant from the National Institutes of Health’s Rapid Acceleration of Diagnostics (RADx) initiative, the Evanston-based company accelerated the development of its DASH (Diagnostic Analyzer for Specific Hybridization) point-of-care PCR system for COVID-19 testing.

COVID-19 testing platform while assembling its FDA Emergency Use Authorization (EUA) application informed by clinical testing at Northwestern Medicine. Minute Molecular is now “at the brink” of having a product to market and remains optimistic that customers such as minute clinics, doctors’ offices, school districts, and other point-of-care sites will have the product in hand sometime in early 2022.

Beginning with a minimally invasive nasal swab, the DASH system delivers swift PCR testing results with central lab precision. In fact, the quantitative PCR system identifies infectious viral agents in approximately 15 minutes. As a result, COVID-19 positive individuals receive reliable, rapid results, which then expedites contact tracing and minimizes pressure on the healthcare system.

“There’s more and more understanding of how fast and decentralized testing can impact people’s care and overall health, and that’s why we’re pursuing accessible, high-quality testing at the point of care. We know it can make a real difference in people’s lives.”

-Sally McFall, Director of Research, Center for Innovation in Global Health Technologies

In the second half of 2021, Minute Molecular continued scaling up manufacturing of its

MERCOURI KANATZIDIS + ACTINIA

A decade ago, the Northwestern University-based chemistry lab of Mercouri Kanatzidis received a grant from the U.S. Department of Defense to explore potential technologies that could help law enforcement reliably spot radioactive materials smuggled across borders.

While developing that technology, however, Kanatzidis and his team recognized commercial possibilities beyond national security. They discovered the same technology could also sharpen imagery and improve medical diagnostics at a more cost-effective rate than existing standards.



Prof. Mercouri Kanatzidis

“If we can reach the ambitious goals we have for Actinia, it will represent the culmination of dreams we’ve had to make something special that impacts the lives of people in a beneficial way.”

Today, Actinia, the upstart company spawned from the pioneering work of Kanatzidis’ lab, is pursuing both markets – nuclear safety and security as well as nuclear medicine and medical imaging. Its cutting-edge radiation detector materials double the resolution of common imaging techniques used in medicine and security, such as SPECT, CT, and even conventional x-rays.

Having locked up strong IP and constructed a thorough understanding of the development of these novel radiation-detecting materials, Actinia continues working with INVO to secure patents and licensing agreements that will advance its commercial development. INVO, in fact, helped connect the Kanatzidis team to a venture gift that enabled the team to partner with Kairos Ventures, a California-based venture investor, to launch Actinia.

Actinia is in active growth mode, currently hiring personnel, reinforcing its positioning to attract additional funding, and pursuing pilot testing in both clinical settings as well as homeland security applications. The upstart company is also preparing for a late 2021 move into KQ, Northwestern’s new accelerator that pairs new lab space with dynamic resources designed to fuel the translation of innovative life science technologies.

“If we can reach the ambitious goals we have for Actinia, it will represent the culmination of dreams we’ve had to make something special that impacts the lives of people in a beneficial way.”

-Mercouri Kanatzidis, Charles E. and Emma H. Morrison Professor of Chemistry, Weinberg College of Arts and Sciences

PATENTS

Figure 9 shows patents filed in FY21 per school. Patent filing is consistent with the invention disclosure activity reported in Figure 2. Figure 10 illustrates the breakout of patents filed in FY21. Figure 11 illustrates that issued patents span multiple disciplines and markets.

Patent Types

Provisional patents: Approximately 60% to 70% of all invention disclosures are filed as provisional patents; approximately 50%–60% are converted into non-provisional patents within a year.

Filing a provisional patent application before filing a Utility application presents several advantages:

- Relatively inexpensive and allows the inventor to spend one year gathering more data, resulting in

a stronger patent application

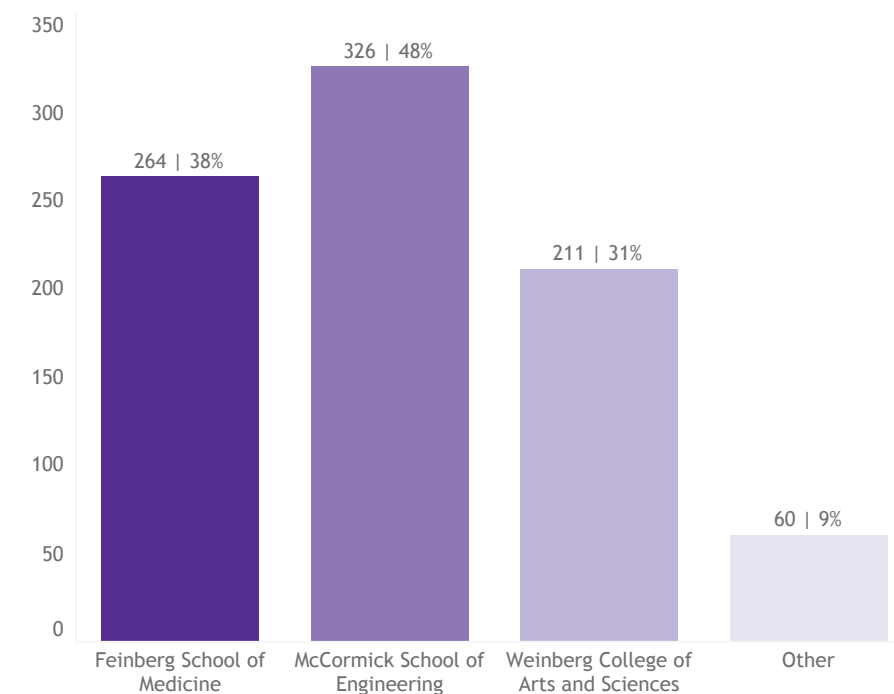
- Allows INVO to conduct a more in-depth commercial assessment of the invention and identification of potential licensees

Non-Provisional (Utility) patent applications:

The filing of a Utility patent starts the official examination process with the USPTO to determine if the invention is patentable. The USPTO review of a patent application can take several years.

PCT applications: A PCT is an international treaty with more than 145 Contracting States. The PCT makes it possible to seek patent protection for an invention simultaneously in a large number of countries by filing a single “international” patent. A PCT application must be followed up within 18 months by entering into national or regional

FIG. 9
FILED PATENT APPLICATIONS BY SCHOOL



phases to more patents. Foreign prosecutions are very expensive. INVO files in specific countries (National Phase) only when there is a licensee for the patent.

Continuing patent applications (CIP): These are patent applications that follow and claim priority to an earlier filed patent application.

EPO Validation: Granted European patents that are in the process of validation in individual states.

Divisional patent applications: Patent applications with claims that were divided out of the original filed application and which must be re-submitted as a separate application.

FIG. 10
FILED PATENT APPLICATIONS BY TYPE

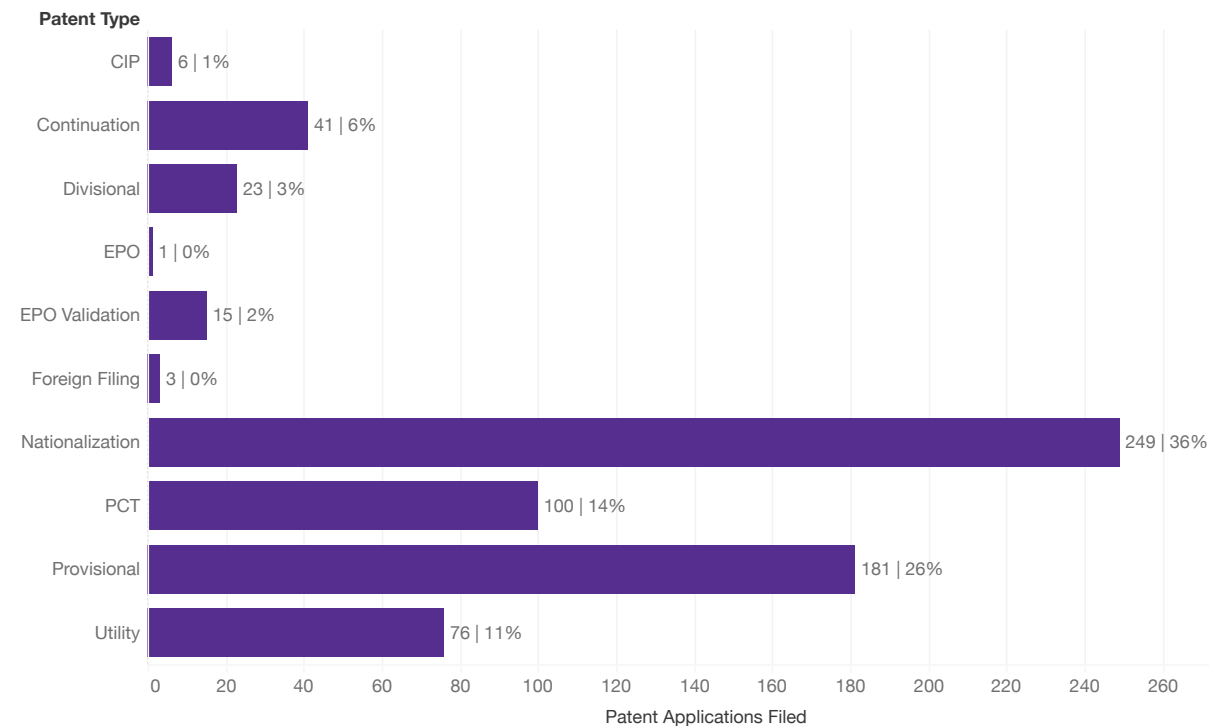
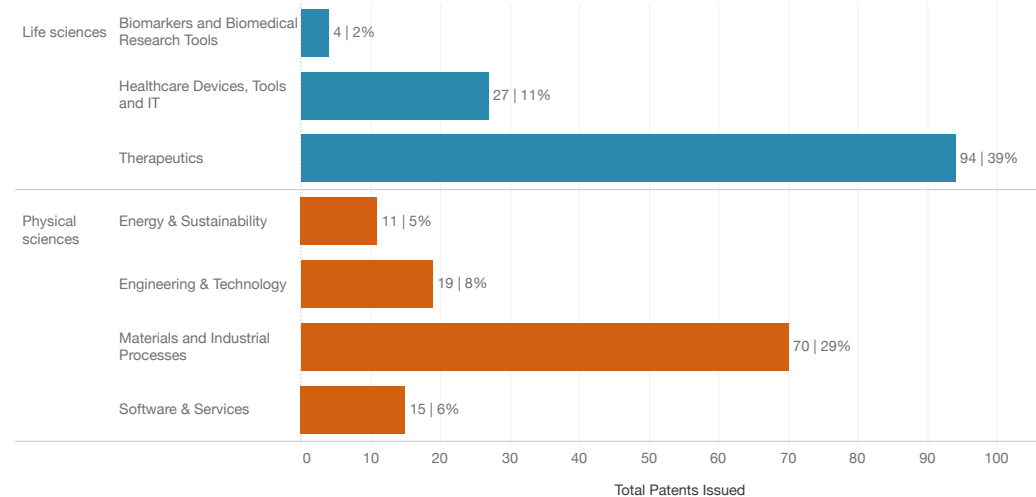


FIG. 11
ISSUED PATENT APPLICATIONS BY CATEGORY / INDUSTRY PIPELINE



A LAUNCHING PAD FOR NOVEL THERAPEUTICS

Since its debut in 2017, Northwestern University’s INVOForward program, originally based on the National Institutes of Health’s acclaimed I-Corps program, has helped over twenty Northwestern biomedical teams navigate the customer discovery process. For its Winter 2021 cohort, however, the mentorship program adopted a different approach to address the increasingly sophisticated and mature therapeutic ecosystem.

Understanding the interests of savvy investors and industry players, INVOForward shifted its focus from customer discovery to prioritizing the assembly of an industry-standard data package. Further, the new framework provided faculty teams with useful guidance to align with programs associated with Lakeside Discovery and the Chicago Biomedical Consortium.



Prof. Huiping Liu

“As scientists, we normally talk to other scientists, not VCs or those from pharma. That’s why INVOForward was so important and valuable.”

Over the six-week program, four teams from Northwestern’s Feinberg School of Medicine interested in translating their academic research into a potential therapeutic strengthened various aspects of their portfolio. Propelled by weekly presentations, ongoing data package pitch feedback, and battle-tested counsel from subject matter experts, the researchers refined their biological rationale, strengthened the case for clinical significance, and deepened their understanding of the IP landscape and prospective business opportunities.

The researchers also worked alongside experienced drug discovery, drug development, and business development professionals from Feinberg Corporate Relations, Lakeside Discovery, and NewCures – the latter two being Northwestern’s biomedical accelerators – to sharpen their value proposition, crystallize their story, and build a thoughtful data package they could then leverage to attract partnerships or secure external funding.

In the final week, the teams presented to a panel of venture capital and pharmaceutical company representatives. That group provided useful

feedback the researchers could then use to inform their next steps.

For at least one team, the program generated near-immediate results.

Having developed a promising therapeutic concept for the treatment of infectious diseases and cancer, Feinberg faculty members Huiping Liu and Deyu Fang nevertheless struggled to discern the path ahead. INVOForward helped Liu and Fang analyze market forces, create a thorough data package, and set the groundwork for their company, ExoMira Medicine. The researchers have since landed a \$100,000 grant from the Chicago Biomedical Consortium to accelerate the development of their novel therapeutic.

“As scientists, we normally talk to other scientists, not VCs or those from pharma. That’s why INVOForward was so important and valuable. It gave us the skills and language to be comfortable in this unfamiliar world and taught us how to present our discoveries in a clear and compelling way.”

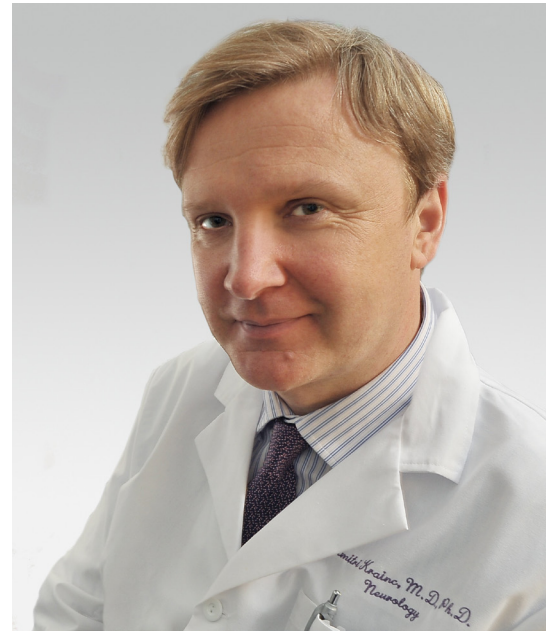
-Huiping Liu, Associate Professor of Pharmacology and Medicine, Feinberg School of Medicine

DR. DIMITRI KRAINIC + VANQUA BIO

A two-year-old biopharmaceutical company fueled by seminal research from the lab of Dr. Dimitri Krainic, Vanqua Bio, discovers and develops next-generation medicines designed to slow, if not stop, the progression of debilitating neurodegenerative diseases such as Parkinson’s and amyotrophic lateral sclerosis (ALS).

Vanqua employs a targeted, genetic-based approach successful in cancer treatments to neurodegenerative conditions. The company identifies genes that cause or increase the risk of neurodegenerative disease and then leverages proprietary research tools and in vitro modeling to translate those genetic insights into new therapeutics with transformative potential.

Vanqua’s spirited work delivers a new era of hope for the 10 million individuals around the world



Prof. Dimitri Krainic

“I hear their stories. I see their struggles. That’s pushing us to hurry and find successful therapeutic options.”

battling Parkinson’s and the millions more diagnosed with other neurodegenerative disorders that challenge quality of life.

In September 2021, Vanqua closed an \$85 million Series B financing round that will be used to accelerate the development of its innovative therapeutic programs. Specifically, the funding will help position the Chicago-based company to bring one of its small-molecule activators focused on GBA-Parkinson’s and Gaucher Disease to human testing trials by 2024.

Krainic, a leading expert on uncovering molecular pathways that contribute to neurodegenerative

diseases and the chair of Vanqua’s Scientific Advisory Board, says the upstart company’s next chapter is to advance its lead program for GBA-Parkinson’s while also addressing other neurodegenerative conditions.

“As a clinician, I regularly see people with GBA-Parkinson’s, ALS, and other devastating neurodegenerative diseases. I hear their stories. I see their struggles. That’s pushing us to hurry and find successful therapeutic options.”

-Dr. Dimitri Krainic, Chair, Department of Neurology, Feinberg School of Medicine

FY 2021 FINANCIALS

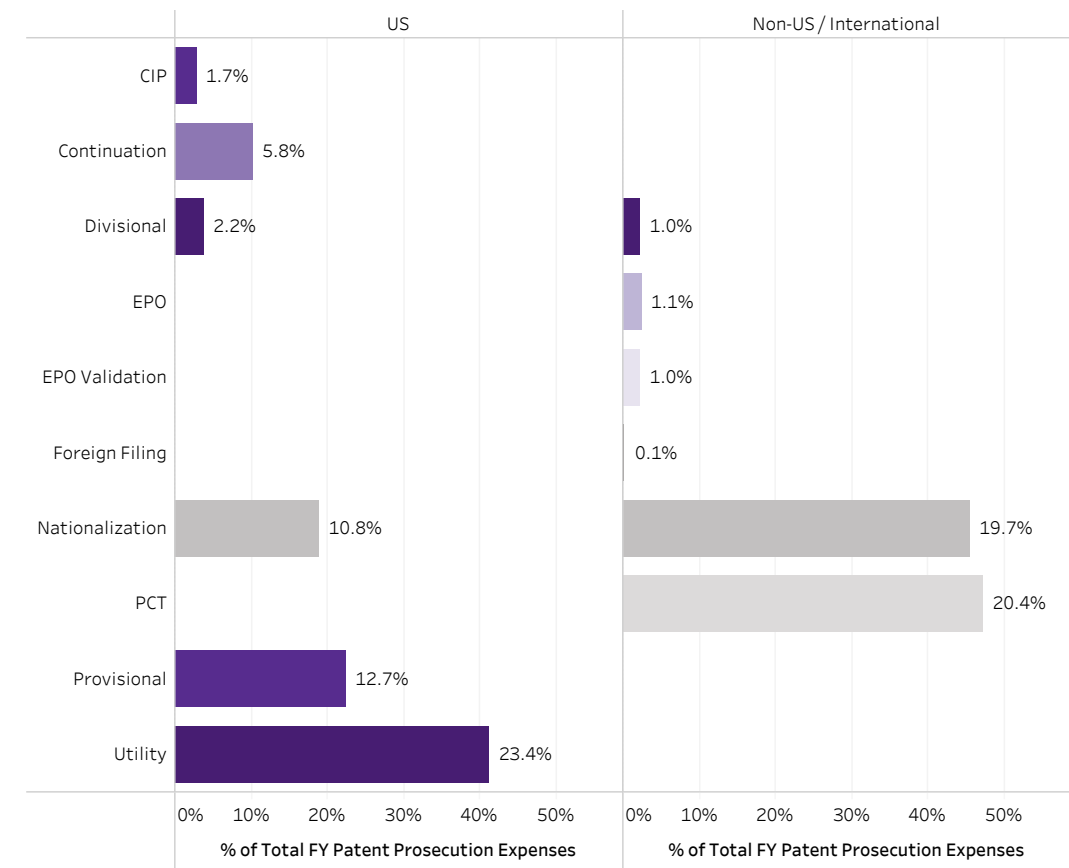
Licensing Income. Licensing income decreased as Lyrica’s patent expiration continues in multiple countries. Non-Lyrica revenue increased due in part to increased royalties and one-time licensing fees.

Legal Expenses. Expenses are expected to continue to grow as Northwestern’s patent portfolio continues to increase in size and complexity.

Patent protection is expensive. Initial US applications cost from \$6,000 to \$15,000 and, throughout their lifetime, they cost anywhere from \$25,000 to \$30,000. Foreign prosecution is even more costly, and can range anywhere from \$100,000 to \$200,000.

In addition, non-prosecution expenses are incurred as a result of inevitable inventorship issues such as license disputes, interferences, and bankruptcy.

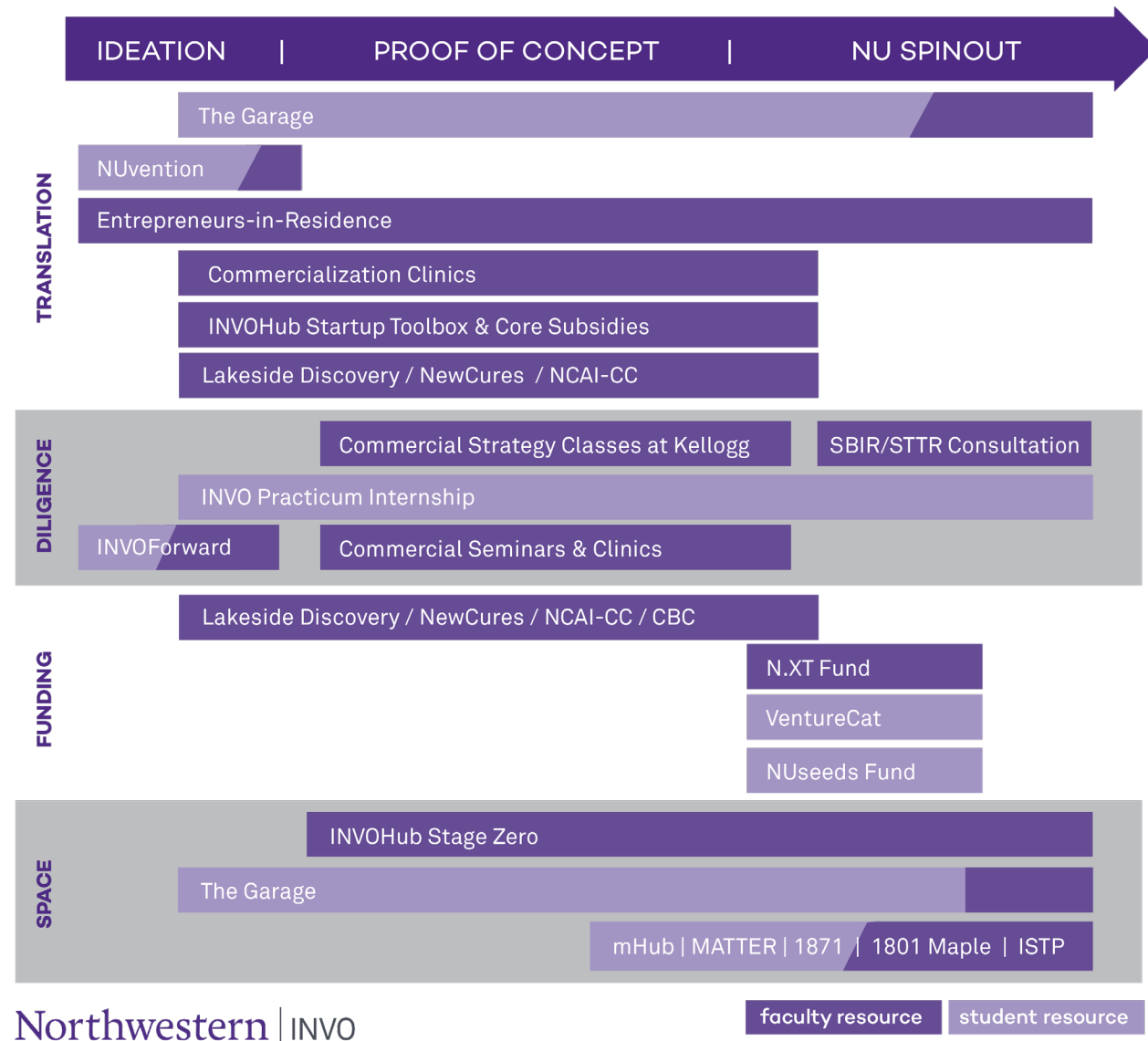
FIG. 11a
PATENT PROSECUTION EXPENSES BY PATENT TYPE



COMMERCIALIZATION RESOURCES AT NORTHWESTERN

Translating innovative technologies from the lab to the market takes time and resources. It’s an arduous and complex but necessary journey. The majority of advanced technologies out of the university, including computer software, electronics, medical devices and nanotechnology, requires research, market validation, testing, and much more to reach the public’s hands.

INVO and Northwestern University at large support the commercialization of technologies throughout the earlier ideation and proof of concept stages as well as the initial phases of new company formation. Resources spanning translation, diligence, and access to funding and physical space are outlined here.



WE THRIVE AT THE CROSSROADS OF ACADEMIC RIGOR AND ENTREPRENEURSHIP

TRANSLATION TEAMMATES

For those with autosomal dominant polycystic kidney disease (ADPKD), the globe’s most common kidney disorder, the present-day prognosis remains particularly bleak.

Those with the inherited disorder typically develop cysts on their kidneys in their 30s or 40s. For those with the most severe cases of this incurable disease, the kidneys enlarge and gradually lose function. By their 50th birthday, many with ADPKD encounter renal failure and are faced with dialysis or a kidney transplant for survival.

Over the last decade, the Northwestern University-based lab of Paul DeCaen has made seminal contributions to the field of ADPKD. In addition to developing a structural and functional understanding of how the mutations that cause ADPKD lead to disease, DeCaen’s group has also unlocked new methods of identifying potential therapeutics that can drive more targeted care with heightened efficacy and reduced side effects.



Prof. Paul DeCaen

“It’s the potential for direct translation – to help people with autosomal dominant polycystic kidney disease live less painful and more normal lives for longer – that motivates our work in the lab and energizes our partnership with Lakeside Discovery.”

Now with the partnering help of INVO’s Eric Schiffhauer and Lakeside Discovery, the three-year-old Northwestern University-Deerfield Management collaboration founded to accelerate the translation of transformative biomedical technologies, DeCaen’s promising efforts will take ambitious steps toward commercialization and helping patients lead richer, fuller, and healthier lives.

In March 2021, Lakeside Discovery announced a multi-year, multimillion-dollar partnership to support the ADPKD endeavors of DeCaen’s lab. DeCaen is now working with a dedicated team of seasoned drug discovery experts to execute a work plan

designed to translate the DeCaen lab’s molecular understanding into therapeutic benefits and improved patient outcomes.

“It’s the potential for direct translation – to help people with autosomal dominant polycystic kidney disease live less painful and more normal lives for longer – that motivates our work in the lab and energizes our partnership with Lakeside Discovery.”

-Paul DeCaen, Assistant Professor of Pharmacology, Feinberg School of Medicine

ANSWERING THE CALL

As the COVID-19 pandemic prompted an intense need for practices, technology, and tools designed to facilitate and improve remote learning, Northwestern University's entrepreneurial ecosystem and innovators responded.

Traditionally supporting pre-formed startups in "hard tech" fields like engineering and medicine, INVO's N.XT Fund – a \$10 million gap fund devised for Northwestern's early-stage innovations – diversified its platform to address a pressing societal issue while simultaneously inviting the University's social sciences and humanities entrepreneurs into the fold.



Prof. Nichole Pinkard

"We are excited and grateful to be an N.XT EdTech Fund awardee. This financial support and thought partnership will be key to our team's efforts in growing equitable access to after-school and summer activities."

In early 2021, the N.XT Fund began soliciting applications for a round of awards focused solely on educational-enhancing technologies in the incubation process. Entrepreneurial-minded faculty from across the Northwestern campus submitted inspired ideas for educational innovations to advance learning and empower youth education.

Four honorees were selected to receive up to \$100,000, alongside resources and mentorship intended to energize their respective journeys to commercialization. The first-ever N.XT EdTech class includes:

Cities Learn

The project from School of Education and Social Policy (SESP) associate professor Nichole Pinkard democratizes access to afterschool activities by offering a unified data system to track youth participation, achievement, and activity outside the classroom.

TunePad

Eager to broaden participation in computing, Michael Horn, an associate professor in computer science at the McCormick School of Engineering (McCormick) as

well as learning sciences at SESP, developed an online platform for creating music through the Python programming language.

History Adventures

An associate professor in residence in the Department of Communication at Northwestern Qatar, Spencer Striker's History Adventures leverages interactive digital devices to bring engaging world history lessons to middle and high school students.

Voice Savvy

Theresa Brancaccio, a senior lecturer in voice and opera at the Bienen School of Music, is collaborating with John Rogers (McCormick) to develop a wearable patch and mobile app that will calculate vocal load and help users monitor their vocal health.

"We are excited and grateful to be an N.XT EdTech Fund awardee. This financial support and thought partnership will be key to our team's efforts in growing equitable access to after-school and summer activities."

-Nichole Pinkard, Associate Professor of Learning Sciences, School of Education and Social Policy

FIG. 12
STARTUPS BY SCHOOL

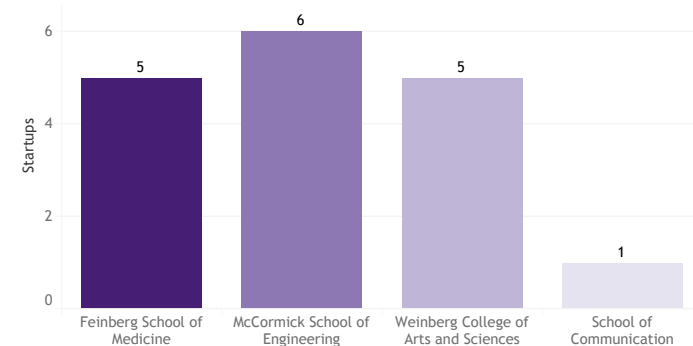


FIG. 13
STARTUPS TIMELINE

Year	Month	Startup	Faculty
2021	October	MFNS Tech, Inc.	Prof. Vinayak Dravid\MCC
		Thyreos, LLC	Prof. Greg Smith\FSM
		Zylem Biosciences, Inc.	Prof. Shad Thaxton\FSM
November		Sughero, LLC	Prof. Nathan Gianneschi\WCAS
		Vayu LLC	Prof. Mahesh Vaidyanathan\FSM
December		Actinia	Prof. Merkouri Kanatzidis\WCAS
		HemoRhythms Inc.	Prof. John Rogers\MCC
		LBYE, LLC	Prof. Jayesh Mehta\FSM
March		EnKay Omics, Inc.	Prof. Jonathan Siegel\SoC Prof. Matthew Robey\WCAS
August		Pearl Bio, Inc.	Prof. Michael Jewett\MCC
February		NuSera Biosystems	Prof. John Rogers\MCC
		Syenex, LLC	Prof. Joshua Leonard\MCC
June		Akava Therapeutics	Prof. Richard Silverman\WCAS
		SAFCell, Inc.	Prof. Sossina Haile\MCC
July		NeuronGrow, Inc.	Prof. Sam Stupp\WCAS Prof. Evangelos Kiskinis\FSM

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Innovation and New Ventures

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Cover page photo credit: Dimitri Krainc Lab. Human neurons derived from skin.