

# Northwestern | INVO

Innovation and New Ventures

## Commercialization and Intellectual Property

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# INVO's Mission

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INVO is the technology transfer office of Northwestern.

- Catalyze the translation of NU innovation from the university to the public
  - Become a source of impactful innovations and products that improve lives
  - Become a magnet for entrepreneurial talent



# NORTHWESTERN AT A GLANCE

## RESEARCH

**\$1.05 B**

FY2024 research funding

**#1**

academic research site in  
funding in Illinois

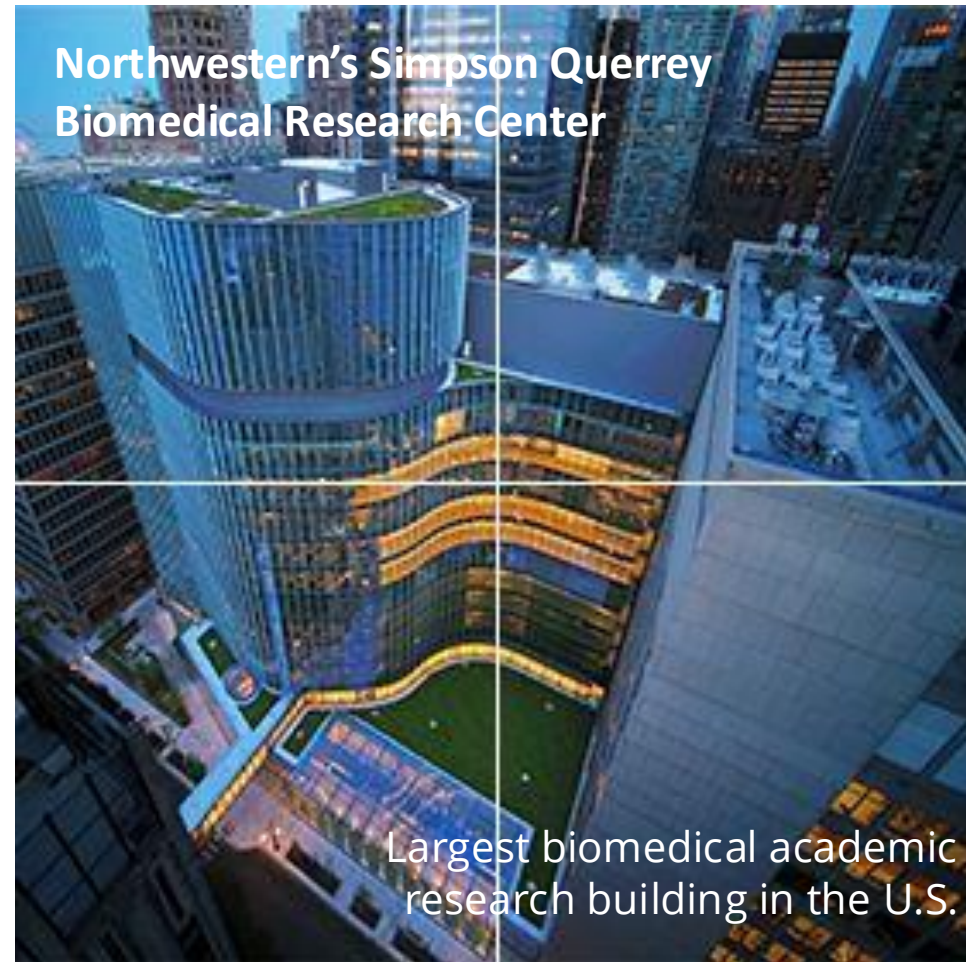
## IMPACT

**“Northwestern Inside”**  
in products of Stryker, Bose,  
Luminex, Millipore, Gatorade,  
L’Oreal, Pfizer, . . .

**\$2.2B**

revenue from IP licensing

Northwestern’s Simpson Querrey  
Biomedical Research Center




Largest biomedical academic  
research building in the U.S.

# NORTHWESTERN PRODUCTS IN THE MARKET

**Teepu Siddique, MD**  
Feinberg School of Medicine  
Department of Neurology

Sold by  
Novartis, Lilly, Genentech, Biogen, Abbvie  
120+ LICENSES  
1994  
Market Entry



**Superoxide Dismutase (SOD) Transgenic Mice**

Mutations of human Cu,Zn superoxide dismutase (SOD) are found in about 20% of patients with familial amyotrophic lateral sclerosis (ALS). Expression of high levels of human SOD containing a substitution of glycine to alanine at position 93--a change that has little effect on enzyme activity--caused motor neuron disease in transgenic mice. The mice become paralyzed in one or more limbs as a result of motor neuron loss from the spinal cord and died by 5 to 6 months of age. The results show that dominant, gain-of-function mutations in SOD contribute to the pathogenesis of familial ALS.

**Richard Silverman, PhD**  
Weinberg School of Arts & Sciences  
Department of Chemistry

Sold by  
Pfizer  
2005  
Market Entry



**Lyrica® (Pregabalin)**

Pregabalin is an FDA-approved anti-convulsant and anxiolytic medication to treat epilepsy, neuropathic pain, fibromyalgia, restless leg syndrome and generalized anxiety disorder. Effectively shaped for transportation to the brain, it acts by inhibiting certain voltage-dependent calcium channels. It is associated with a dose-dependent increase in L-glutamic acid decarboxylase (GAD), an enzyme that synthesizes the inhibitory neurotransmitter GABA, resulting in an indirect but concomitant increase in GABA expression in the brain.

**Chad Mirkin, PhD**  
Weinberg School of Arts & Sciences  
Department of Chemistry

Sold by  
Luminex  
2007  
Market Entry



**VERIGENE® System**

The VERIGENE® System rapidly and accurately detects infectious pathogens and their associated drug resistance markers--without relying on time-consuming culture methods. Its ease of use and automation-friendly workflows make it a valuable system for use in both hospital-based and reference laboratories. Tests run on the VERIGENE platform are designed to target infections in the bloodstream, respiratory tract, and gastrointestinal tract.



**Michael Peshkin, MS, PhD**  
McCormick School of Engineering  
Department of Mechanical Engineering

Sold by  
stryker  
2017  
Market Entry



**Mako SmartRobotics**

Mako SmartRobotics combines 3 components (3D CT-based planning, AccuStop haptic technology, and insightful data analytics) into one platform that has shown better outcomes for total knee, total hip, and partial knee patients.



**Michael Abecassis, MD, MBA**  
Feinberg School of Medicine  
Department of Transplant Surgery

Sold by  
eurofins  
2019  
Market Entry




**TruGraf® and OmniGraf™**

TruGraf® Kidney and TruGraf® Liver are blood-based tests that offer biomarker guidance to aid physicians in minimizing both the immunosuppression and the risk of overt graft injury due to rejection in transplant recipients. OmniGraf™ Kidney combines the TruGraf® Kidney with Viracor TRAC® donor-derived cell-free DNA assays for a more comprehensive view of both subclinical acute rejection and clinical acute rejection.




**John Rogers, SM, PhD**  
McCormick School of Engineering  
Department of Materials Science

Sold by  
GATORADE  
2021  
Market Entry



**Gx Sweat Patch**

The Gx Sweat Patch is a first-of-its-kind personalized performance tracking sweat patch. It is a skin-like, wearable patch that pairs with an easy-to-use software app to provide real-time and personalized recommendations for athletes to optimally hydrate and refuel after exercise.



**Bryan Pardo, MS, PhD**  
McCormick School of Engineering  
Department of Computer Science

**Andrew Sabin, PhD**  
School of Communications  
Department of Communication Sciences & Disorders

Sold by  
BOSE  
2021  
Market Entry



**Bose SoundControl™ Hearing Aids**

Bose Control™ Hearing Aids pair with the Bose Hear app, the first self-tuning mobile app that's clinically proven to provide audiologist-quality customization with perceived mild to moderate hearing loss. This product offers a direct-to-consumer hearing aid and revolutionizes how hearing loss patients treat their conditions.



**Guillermo Ameer, DSc**  
McCormick School of Engineering  
Department of Biomedical Engineering

Sold by  
stryker  
2021  
Market Entry



**Citrelcok™ Tendon Fixation Device System & Citrefix™ Suture Anchor System**



The Citrelcok™ Tendon Fixation Device System features a unique tendon thread consisting of Citregen™, a resorbable material designed to mimic the chemistry and structure of native bone. Citrefix™ is a suture anchor system for foot and ankle surgical procedures.



IP Contract terms with private Foundations  
(which often are: Non-Negotiable)

# Revenue Sharing



- Net Revenue, not Gross Revenue. 
- sharing as fraction of dollars invested?
  - Accounting nightmare 
  - unfair to inventors and to University that's commercializing
- Preference for fixed sharing rate, 10-15%
  - with a cap if higher; e.g. 5x investment



# 'Problematic' Terms from University perspective

- Business side:
  - If not commercialized in two years, all rights go to Foundation
- Legal
  - Assignment of IP to Foundation;
  - Request for Warrants and Indemnification
    - a. General
    - b. Third Party IP