

## A Mind to Discover

Columbia’s Zuckerman Institute brings together an extraordinary group of scientists, in a state-of-the-art facility, to transform our understanding of the brain and mind.

We are conducting pioneering research into how the brain develops, performs, endures and recovers.

From effective treatments for disorders like Alzheimer’s and autism to advances in fields as fundamental as computer science, the arts, economics, law and social policy, the potential impact for humanity is staggering.

Our home in the Greene Science Center, purpose built to spark interaction, also houses public programs and spaces that invite our Manhattanville neighbors to delve into the mind and its mysteries.



movement  
 decision making  
 learning and memory  
 growth and development  
 tools and technology  
 diseases and disorders  
 computation  
 the senses  
 evolution

**50+**  
LABS

**800+**  
RESEARCH  
STAFF

**3,700+**  
SCIENTIFIC  
PUBLICATIONS

**450,000 FT<sup>2</sup>**  
IN THE GREENE SCIENCE  
CENTER

### AWARDS AND HONORS

**2** NOBEL  
PRIZES

**2** LASKER  
AWARDS

**1** WOLF  
PRIZE

**8** NATIONAL  
ACADEMY OF  
SCIENCES MEMBERS

**8** HOWARD HUGHES  
MEDICAL INSTITUTE  
SCIENTISTS

### PUBLIC PROGRAMS

EDUCATION LAB

WELLNESS CENTER

BRAIN INDEX

Columbia's Zuckerman Institute has assembled a team of world-class neuroscientists, engineers, statisticians, psychologists and other scholars from across the University and its medical center. Led by Nobel laureates Eric Kandel, MD, and Richard Axel, MD, we study critical aspects of the mind and brain, gaining insights that promise to benefit people and societies everywhere.

## COMPUTATION

We use mathematics to explore how the brain operates, work that lends insight not only into biology but also into computer science and technology.

## DECISION MAKING

We examine the motivations and rewards that drive us to make decisions and the processes that determine the choices we make.

## DISEASES AND DISORDERS

We study fundamental mechanisms that stand to accelerate treatments for brain-related conditions such as Alzheimer's, Parkinson's, depression and autism.

## EVOLUTION

We investigate what makes the human brain special and how this amazingly complicated thinking machine evolved from simpler brains.

## GROWTH AND DEVELOPMENT

We investigate how cells in our bodies transform into a healthy, thriving brain as we grow.

## LEARNING AND MEMORY

We study how the brain acquires knowledge about the world and how our experiences are encoded, stored and recalled in the brain.

## MOVEMENT

We explore how the nervous system tells the body to move and what happens when this process goes awry, as in diseases like Parkinson's and amyotrophic lateral sclerosis.

## THE SENSES

We uncover the mechanisms in the brain that enable us to experience the world through sight, smell, taste, hearing and touch.

## TOOLS AND TECHNOLOGY

We bring together science and engineering to build cutting-edge tools and imaging technologies that allow us to see the brain in new ways and in unprecedented detail.

**To learn more please contact:**

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## A History of Brain Research at Columbia

### 1909

Columbia founds the Neurological Institute of New York, the world's first hospital devoted to brain diseases.

### 1930s

Columbia scientists Kenneth Cole and Howard Curtis make landmark measurements of cells' electrical properties critical for understanding brain activity.

### 1975

Columbia's Center for Neurobiology and Behavior opens, led by neuroscientist Eric Kandel.

### 2000

Kandel wins the Nobel Prize for research into how learning permanently alters the synaptic connections between neurons.

### 2004

Columbia neuroscientist Richard Axel wins the Nobel Prize for studies mapping the genetics and biology of the olfactory system.

### 2006

Jerome L. Greene Foundation gives Columbia \$250 million for a new building devoted to brain science.

### 2012

Mortimer B. Zuckerman endows a \$200 million neuroscience institute, led by Kandel and Axel.

### 2016 AND BEYOND

The Zuckerman Institute begins a new chapter of scientific discovery in the Jerome L. Greene Science Center.