



Challenges and Solutions for Translational Science

An Academic Perspective

Sandy Williams, MD
President, Gladstone Institutes

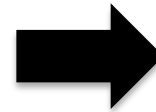
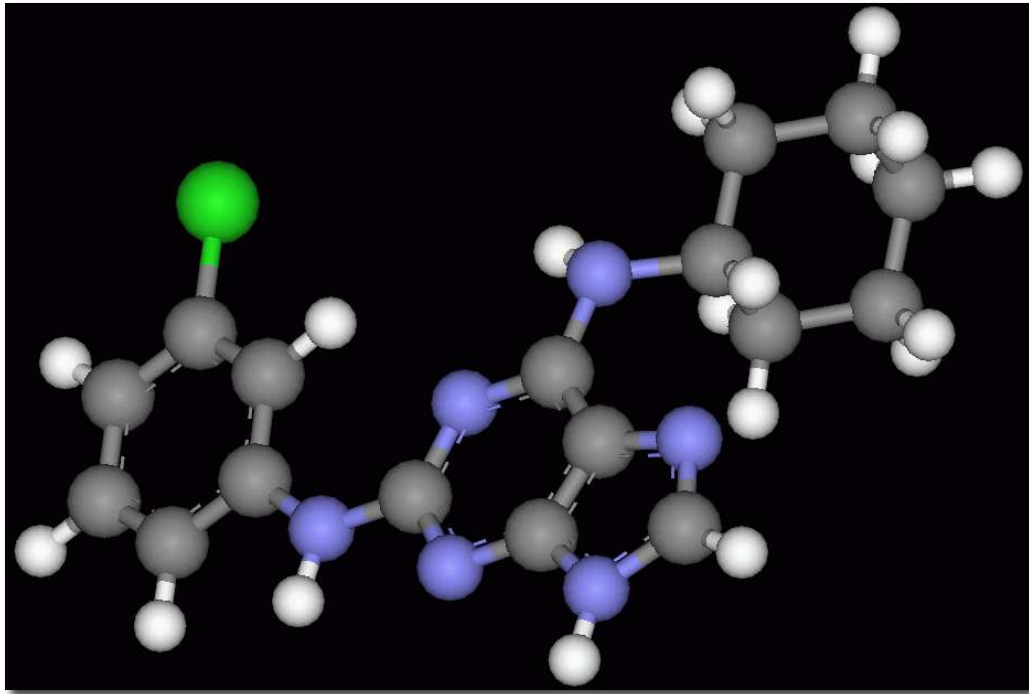
IOM Forum on Drug Discovery

June 4, 2012





Molecule to Marketplace: 15 years and \$1 billion +





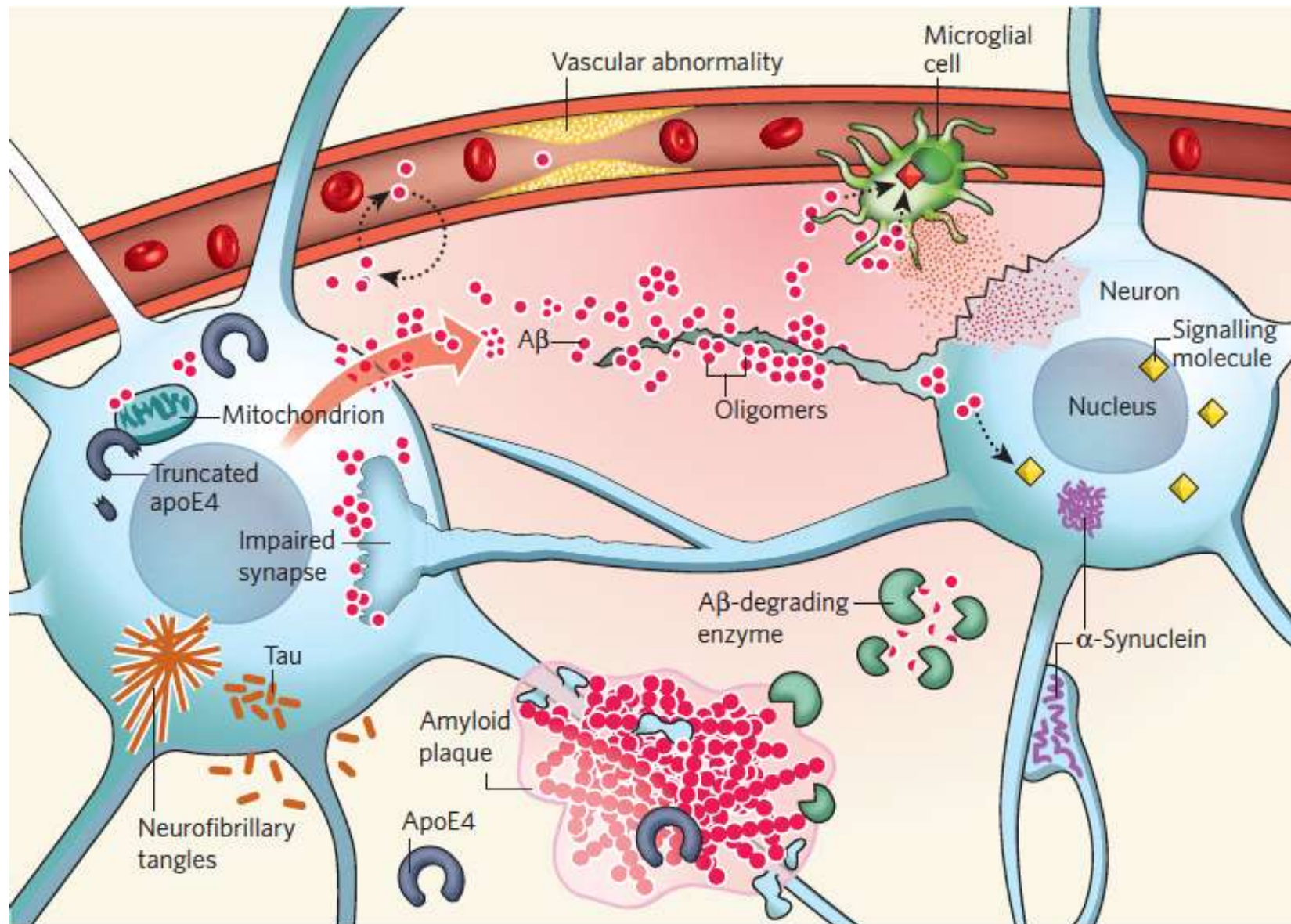
Sandy Williams: Translational Medicine and Disclosures

- Center for Biomedical Invention (UTSWMC)
- Duke Translational Medicine Institute
- Gladstone Center for Translational Research
- QB3
- Clinical & Translational Sciences Institute (UCSF)
- Board of Directors, Bristol-Myers Squibb
- Board of Directors, Laboratory Corporation of America



5.4 million Americans are currently living with Alzheimer's disease. By 2050, that number will climb as high as 16 million. Alzheimer's will cost the United States \$200 billion this year and \$1 trillion in 2050—if nothing changes.

Source: The Alzheimer's Association

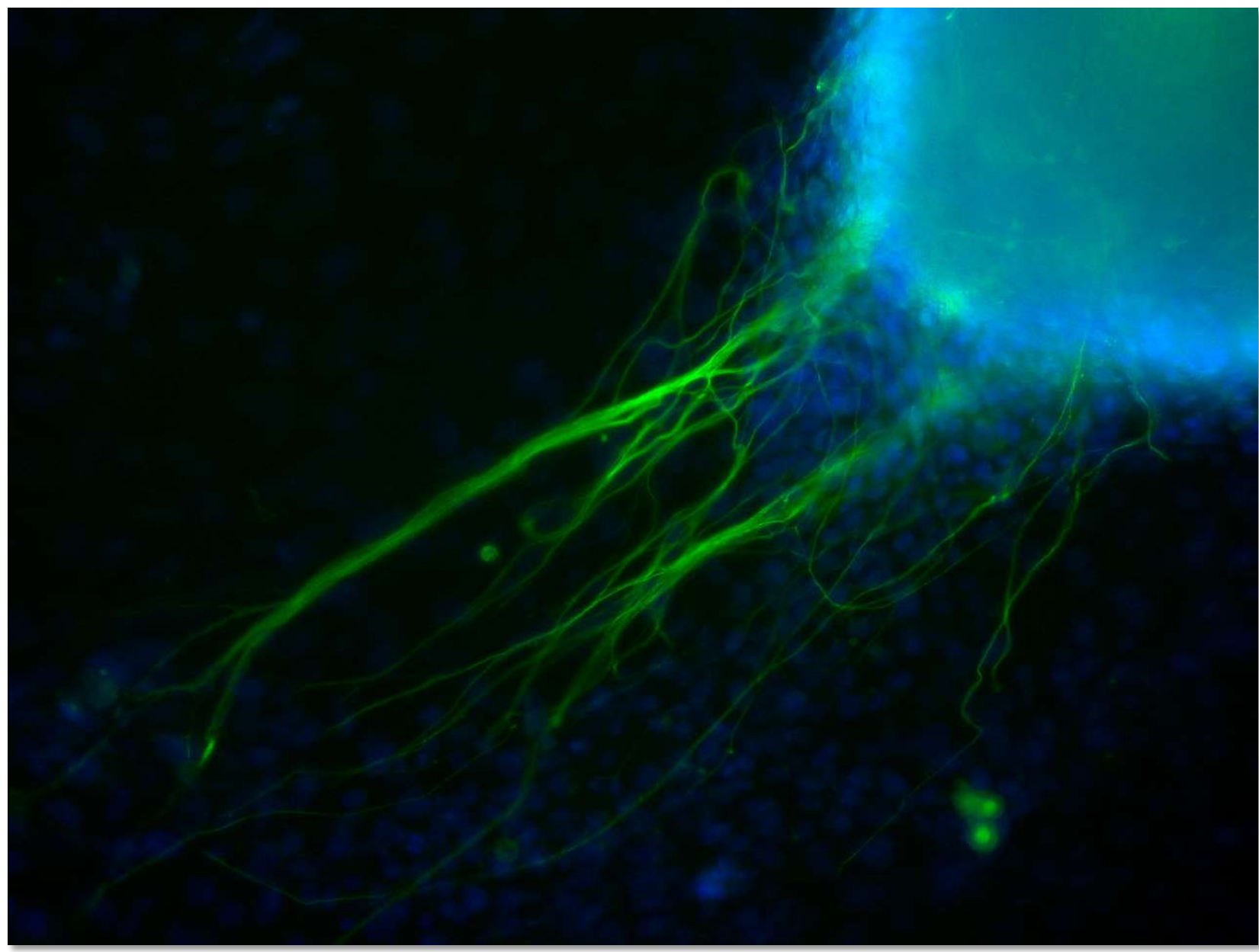


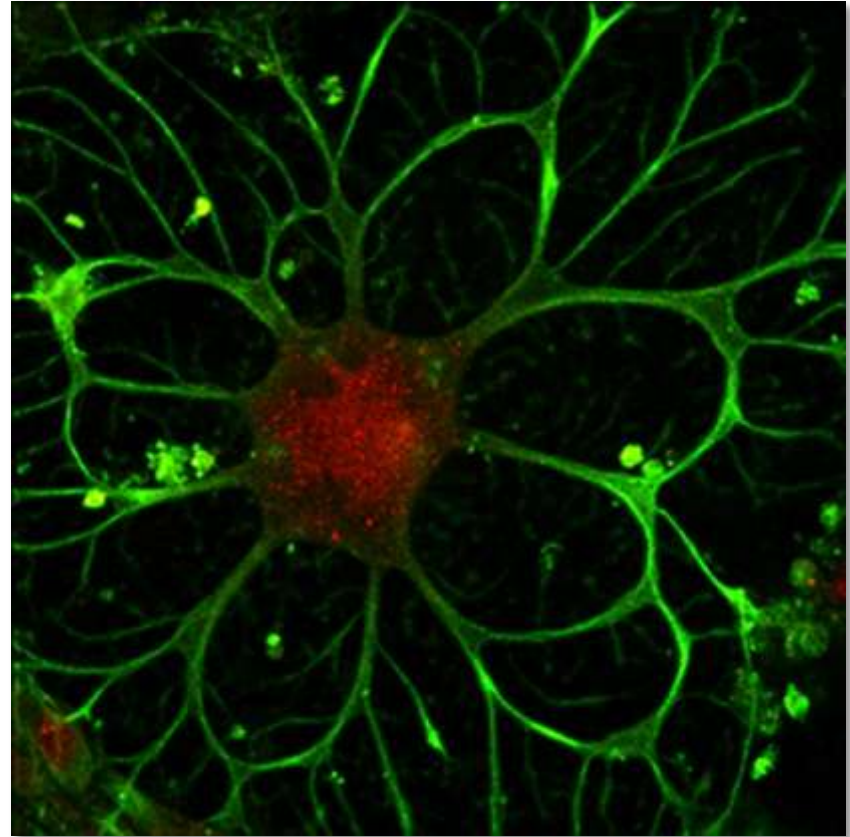
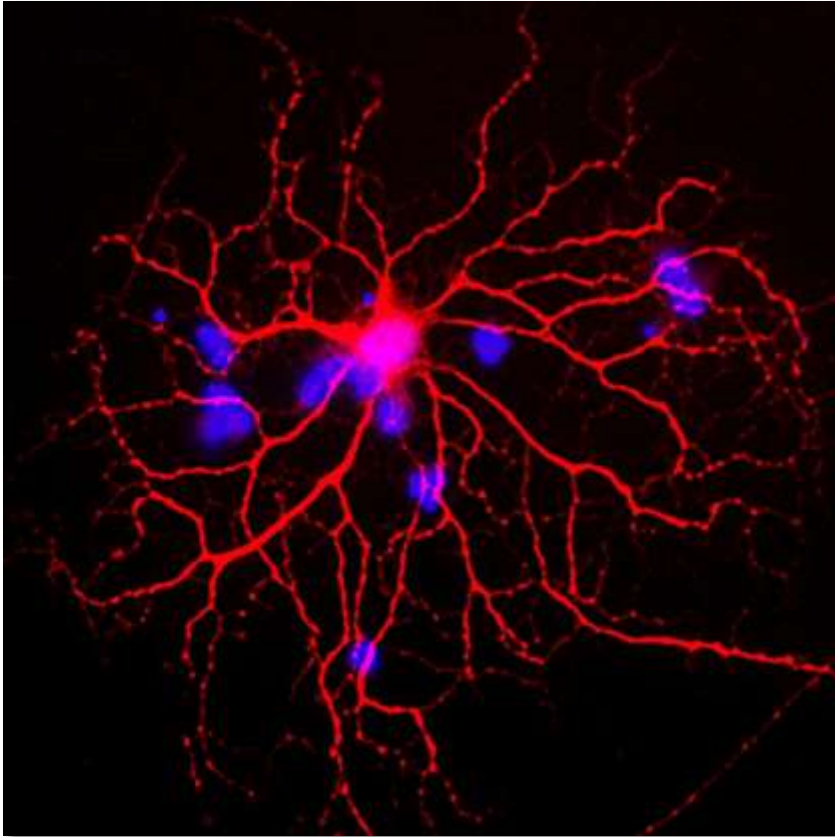
Correlating Cognitive Deficits

Mouse Models vs Alzheimer's Patients

Molecule	Location	Alteration	Validated in AD
Calbindin	Dentate Gyrus	↓	✓
Collagen VI	Dentate Gyrus	↑	✓
EphB2	Dentate Gyrus	↓	✓
GIVA-cPLA ₂ (AA)	Hippocampus	↑	✓
Metenkephalin	Hipp & EC	↑	✓
Nav1.1	Parietal Cortex	↓	✓

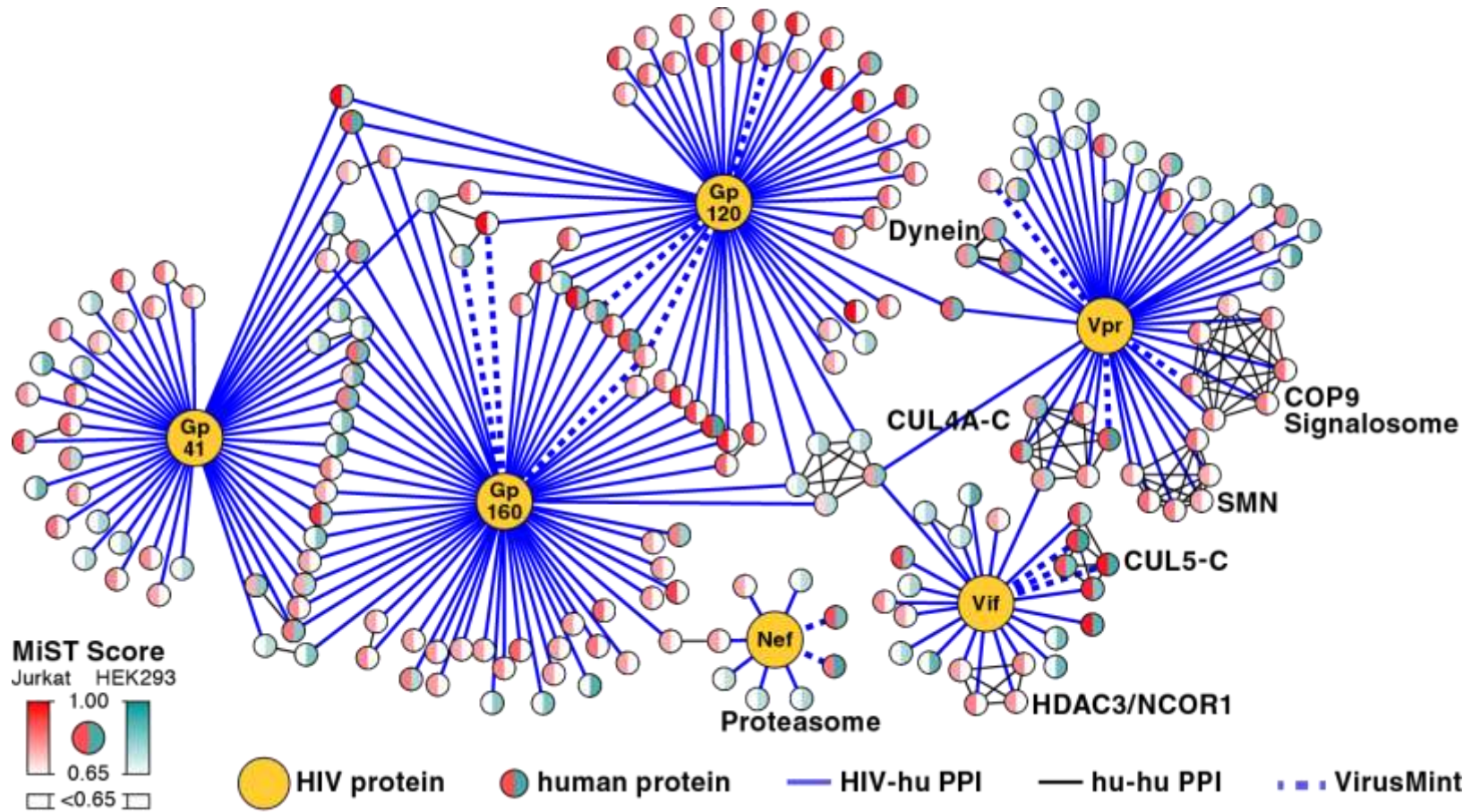






Yadong Huang, Gladstone, with permission











America is “...going to need more collaboration between drug companies and universities and the government funding agencies in order to make progress and to maintain our national leadership in the pharmaceutical industry and in drug discovery.”

—Richard Levin, Yale President

A microscopic image of a cell, likely a neuron, showing various organelles and structures. The cell is stained with fluorescent dyes, resulting in a vibrant, multi-colored appearance. The nucleus is visible as a large, dark, rounded structure. The cytoplasm is filled with intricate, branching structures, possibly representing the endoplasmic reticulum or Golgi apparatus. The overall image has a dark, almost black background, which makes the brightly colored cell stand out prominently. The text is overlaid on the central part of the cell.

GLADSTONE INSTITUTES
SCIENCE OVERCOMING DISEASE