# Developing New Drugs to Treat Cancer and Alzheimer's Disease Craig Crews Professor, Chemistry Professor, Pharmacology Lewis B. Cullman Professor, Molecular Cellular, and Developmental Biology

## **CURRENT RESEARCH**

## Drugs that seek out and destroy disease causing proteins

Drug development is a complicated task; scientists must create a drug that binds to its target protein, thus preventing it from performing its function. The problem with this strategy is that eventually the drug falls off the protein, which then frees the protein to work again. Therefore, a patient must take lot of the drug so there are enough drug molecules present to ensure that if one drug falls off the protein, another is available to take its place. The challenge of achieving high enough dose levels to block the function of a protein has resulted in the inability to drug specific diseases. Dr. Craig Crews, of Yale University, is developing a new paradigm for drug development. He and his team's novel approach relies upon drugs that can trick the cell's own quality control mechanisms to remove a target protein completely. Coined the "seek and destroy" strategy by Dr. Crews, this new approach can be applied to diseases such as cancer and neurodegenerative diseases. Due to the fact that many rogue, disease-causing proteins can not easily be blocked using a small molecule drug approach, Dr. Crews' technique will allow scientists to drug the "undruggable."

A day in Dr. Crews' lab will reveal the incredible team of chemists, biologists, pharmacologists, biochemists, medical students, and undergraduates all working together. Such a multidisciplinary team creates a dynamic and exciting environment where many new ideas flow from different perspectives. Despite the breadth of talent within his own lab, Dr. Crews still collaborates with other labs as well. In addition to the range of disciplines within the lab, it is also a very international team hailing from Mexico, Peru, Austria, Germany, Korea, USA,..

# **AFFILIATION**



Yale University

#### **EDUCATION**

- Postdoctoral Fellow, Cancer Research Institute, 1995, Harvard University
- Ph.D., in Biochemistry, 1993, Harvard University
- B.A., in Chemistry, 1986, University of Virginia

#### **AWARDS**

- UCB-Ehrlich Award for Excellence in Medicinal Chemistry (European Federation of Medicinal Chemistry), 2014
- Entrepreneur of the Year, Connecticut United for Research Excellence (CURE), 2013
- Senior Scholar Award, Ellison Medical Foundation, 2011
- Lewis B. Cullman Professor of Molecular, Cellular, and Developmental Biology, 2010

#### **RESEARCH AREAS**

Life Science, Diagnostics, Immunology / Inflammatory

## **FUNDING REQUEST**

Your contributions will support the continued research of Dr. Craig Crews, of Yale University, as he develops a new paradigm for drug development. Donations will support the necessary \$1.5M required to support personnel, chemicals, and drug testing each year for the three labs Dr. Crews oversees and their many projects. In choosing to donate, you will play a role in developing a new class of drugs for "undruggable" proteins.

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