



**College of Agricultural,
Consumer &
Environmental Sciences**

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

FRONTIERS IN ANIMAL SCIENCES

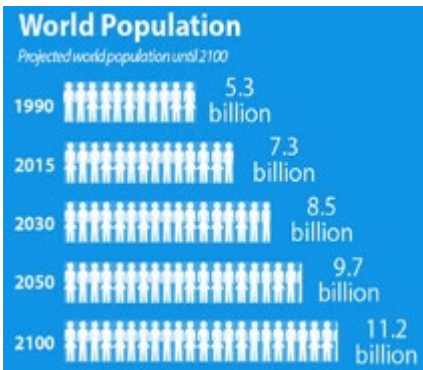
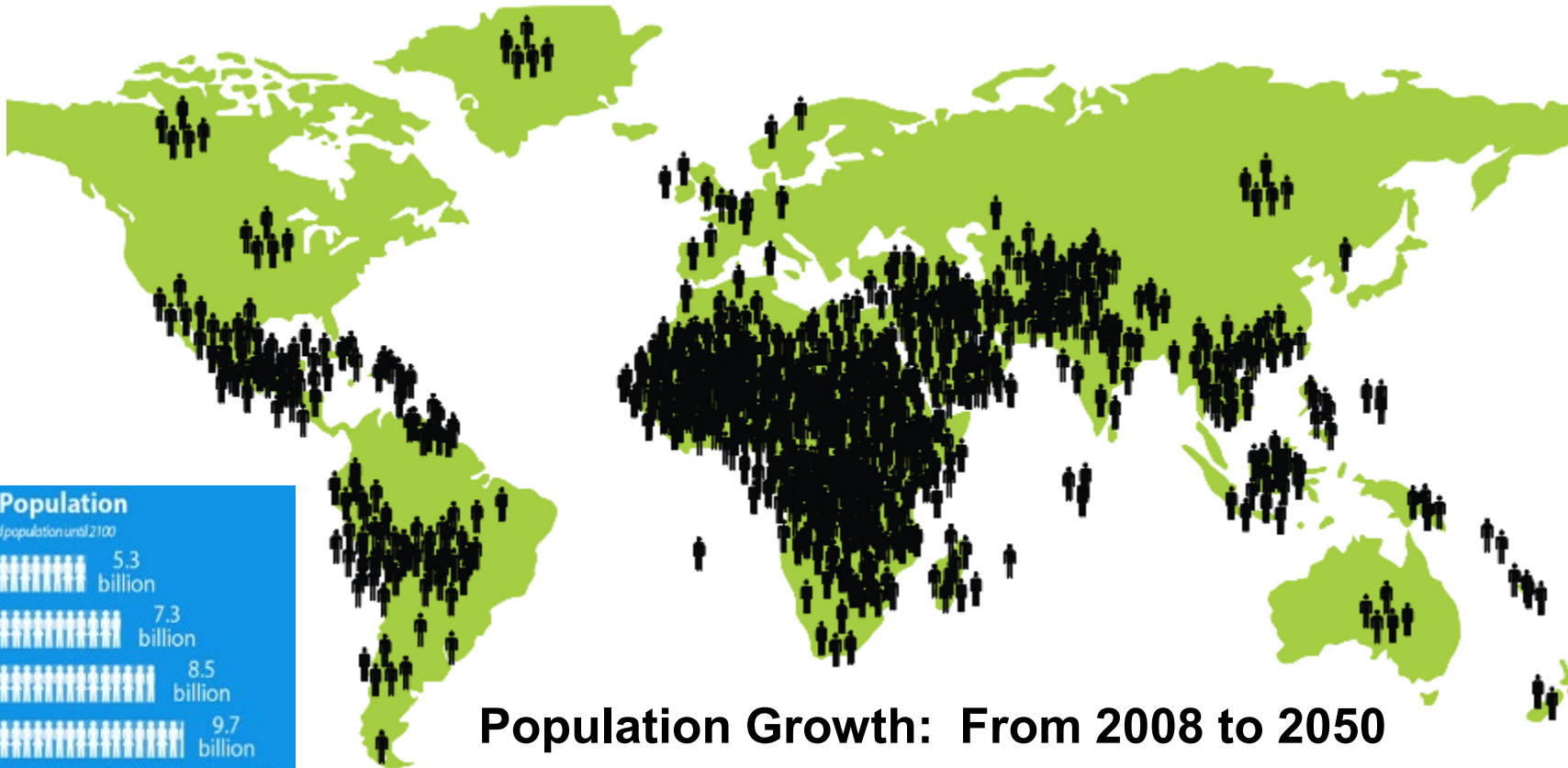
Developing and leveraging science,
technology, & talent to feed the world and
promote animal health and wellbeing

DEPARTMENT OF:
Animal Sciences



Global population growth

7.9 billion people, July 14, 2021



Population Growth: From 2008 to 2050



I
ILLINOIS

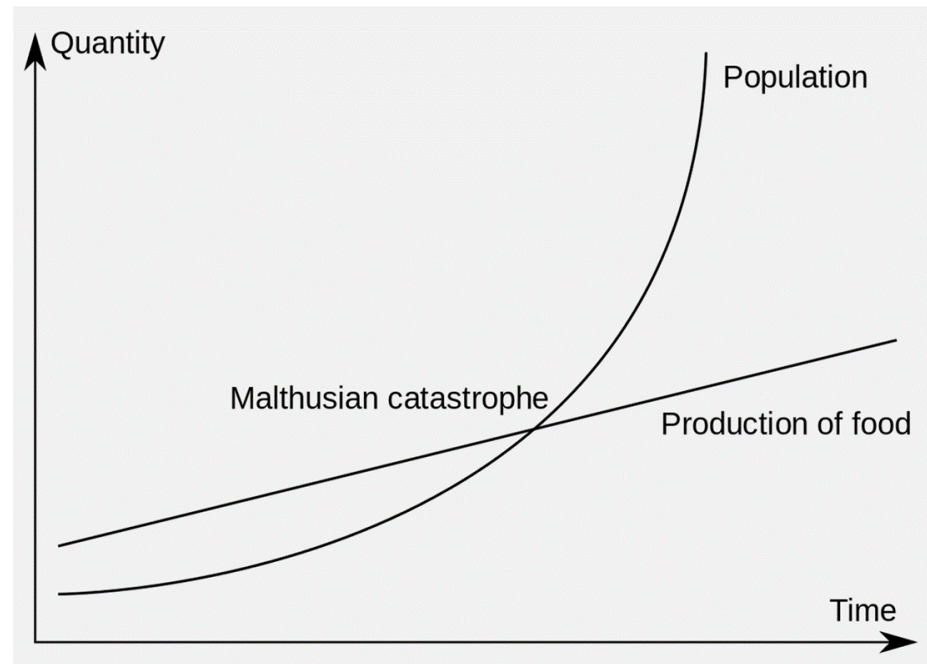
College of Agricultural, Consumer
& Environmental Sciences

Can we produce enough food for the extra 2 billion people who will join the world's population by 2050?



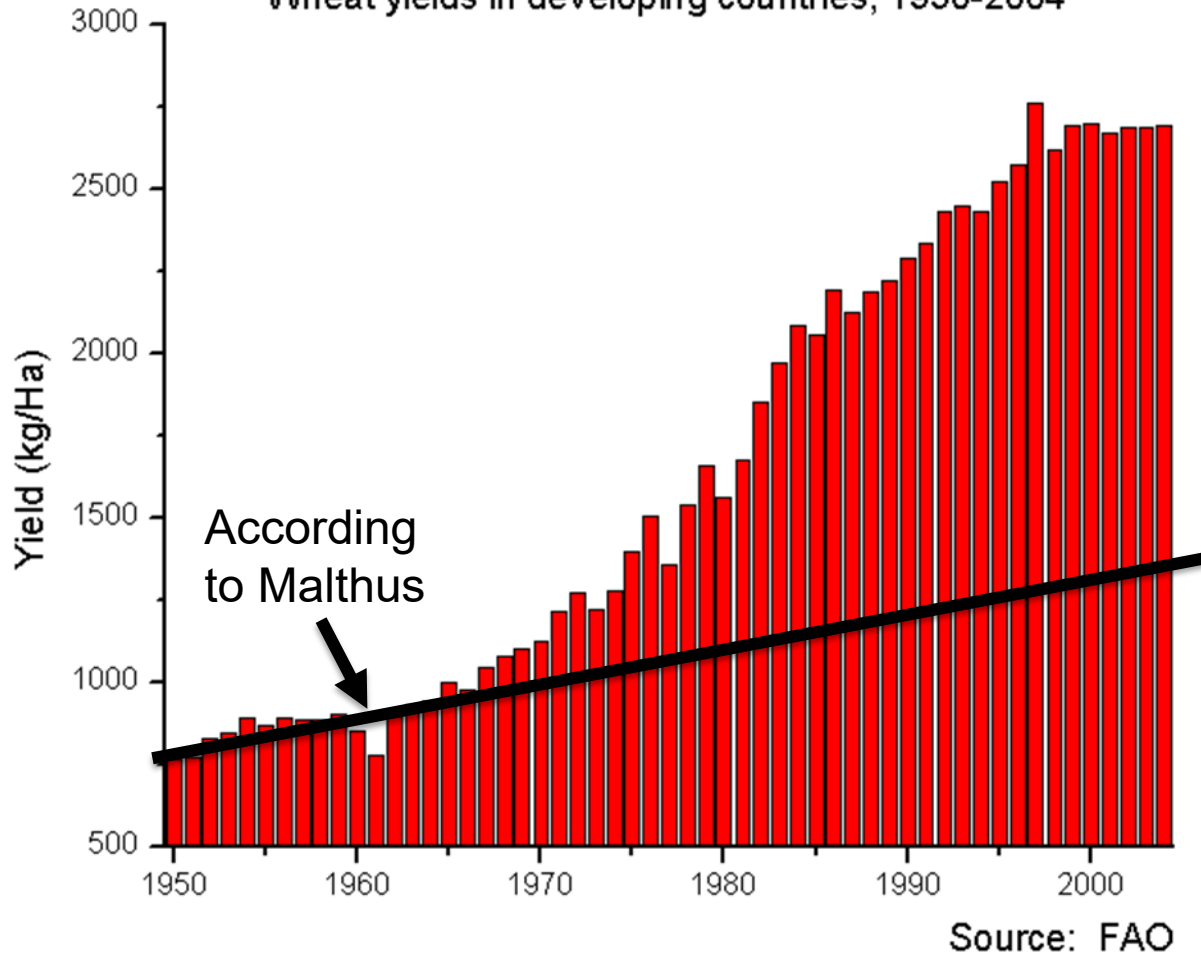
Thomas Malthus
*An essay on the principle
of population (1798)*

“The power of population is so superior to the power of the Earth to produce subsistence for man, that a premature death must in some shape or other visit the human race.”



The Green Revolution

Wheat yields in developing countries, 1950-2004



Innovation & Education

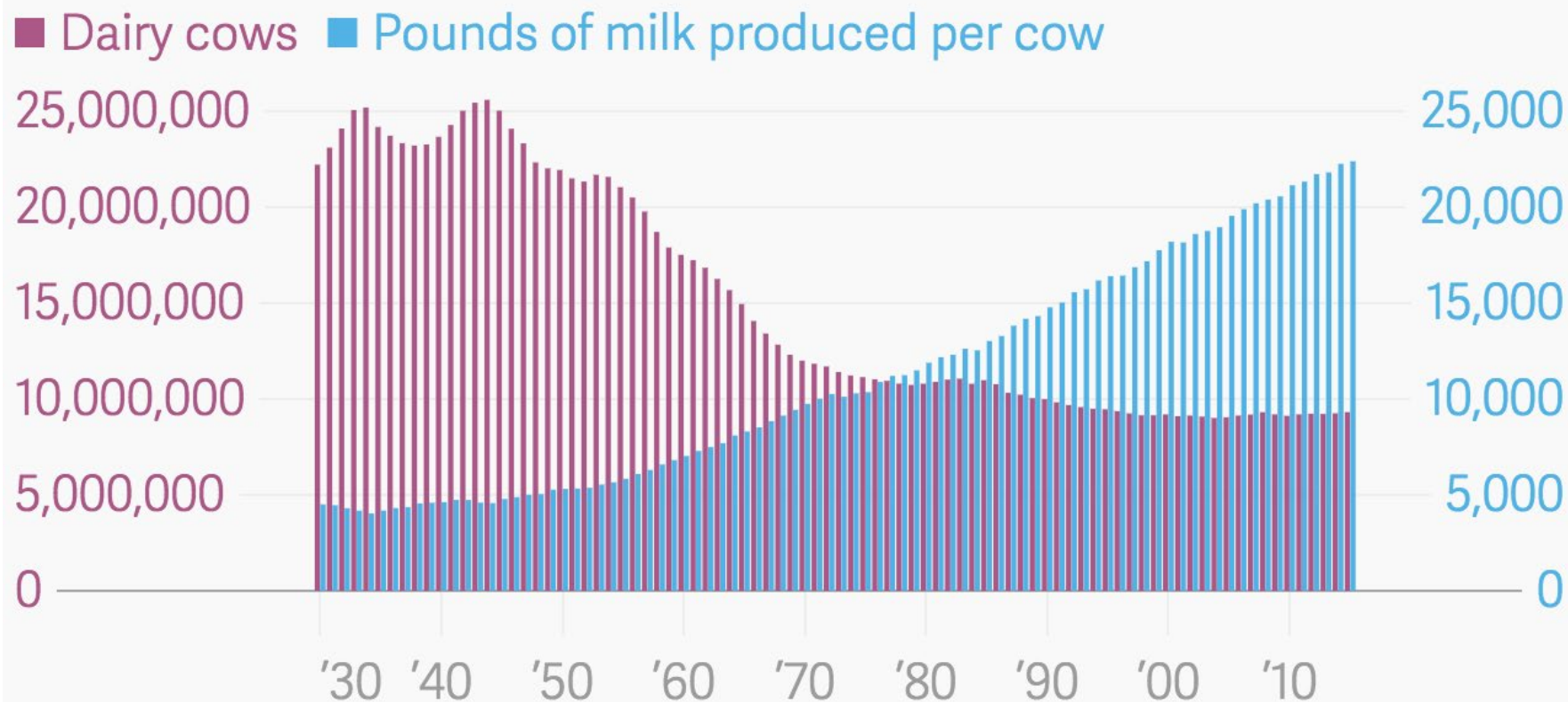
- Fertilizer
- Irrigation
- Mechanization
- Improved farming practices
- Increase in cultivated land
- Improved genetics and pest control
- Research and education



Norman Borlaug

Producing more with less

US farmers produce more milk with fewer dairy cows



△ T L △ S | Data: US Department of Agriculture



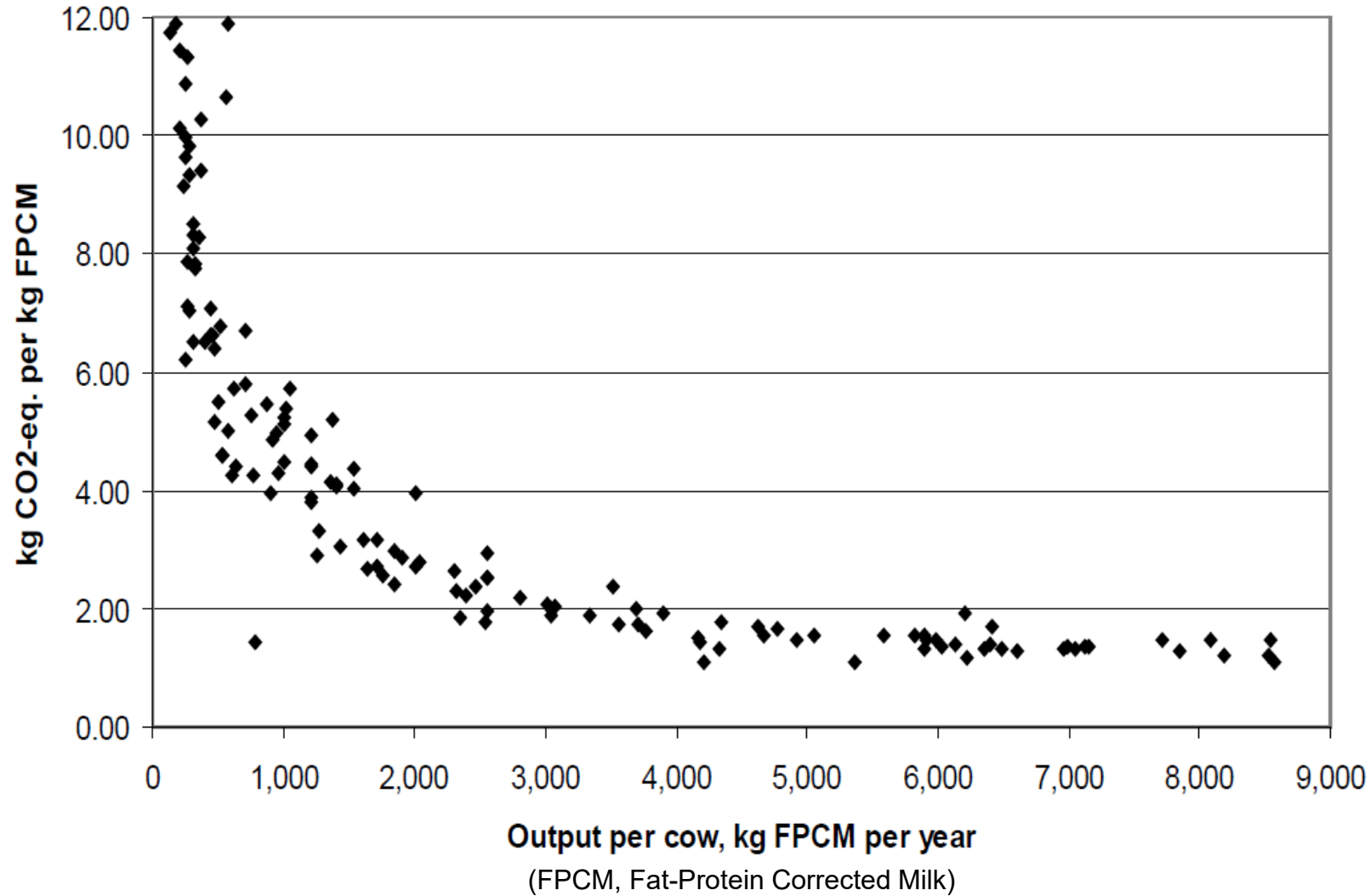
1945

- 25 million cows
- 119,828 billion lbs of milk

2018

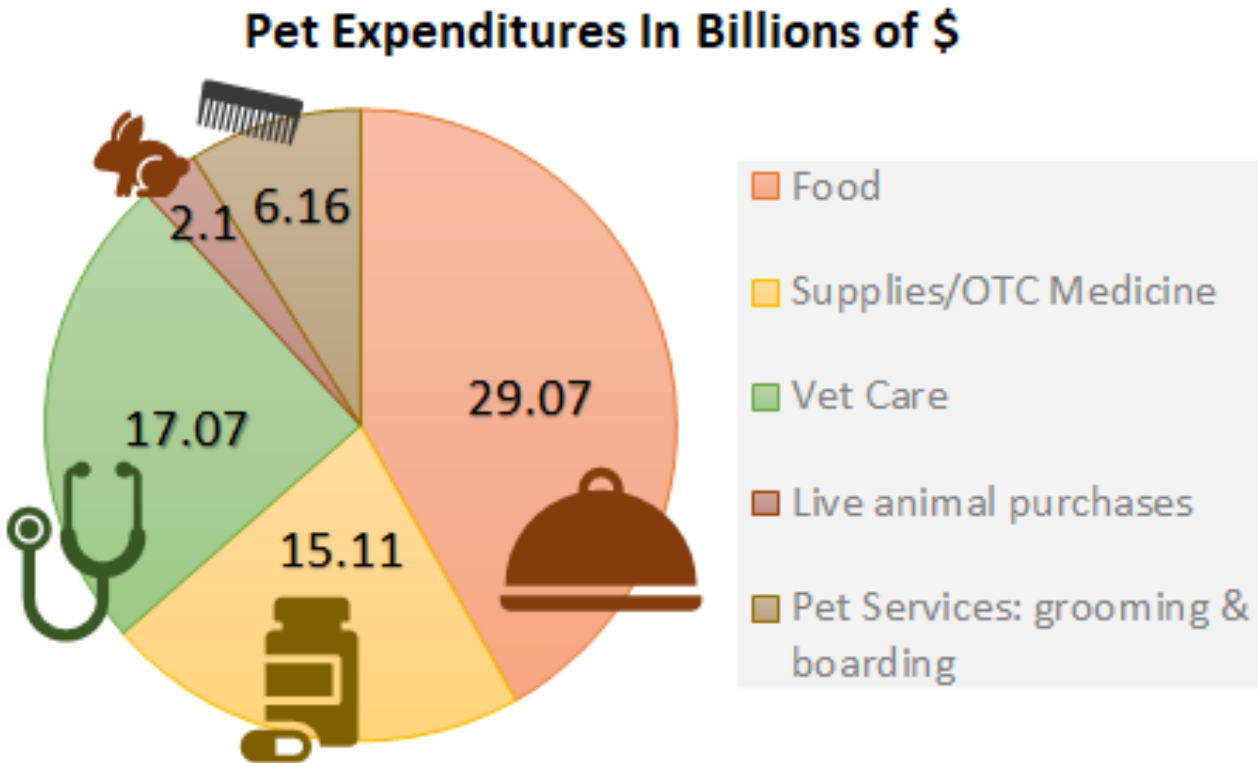
- 9.2 million cows
- 217.5 billion lbs. of milk

Production efficiency reduces GHG emissions

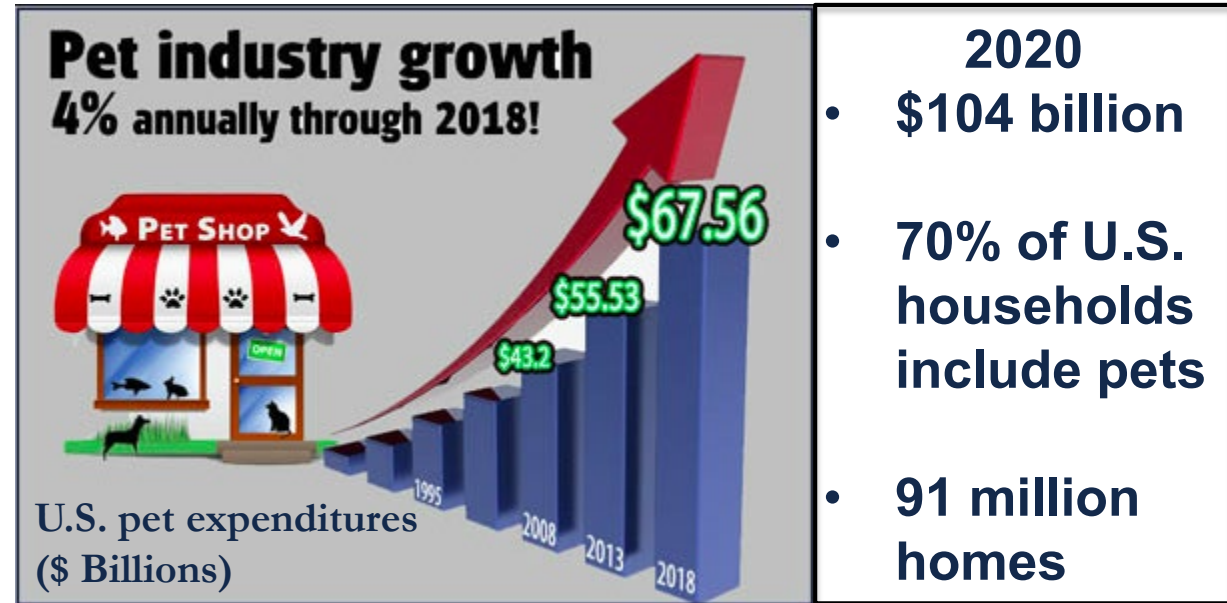


H. Steinfeld, 2015

U.S. pet ownership statistics*



* American Pet Products Association



Dual purpose interdisciplinary research

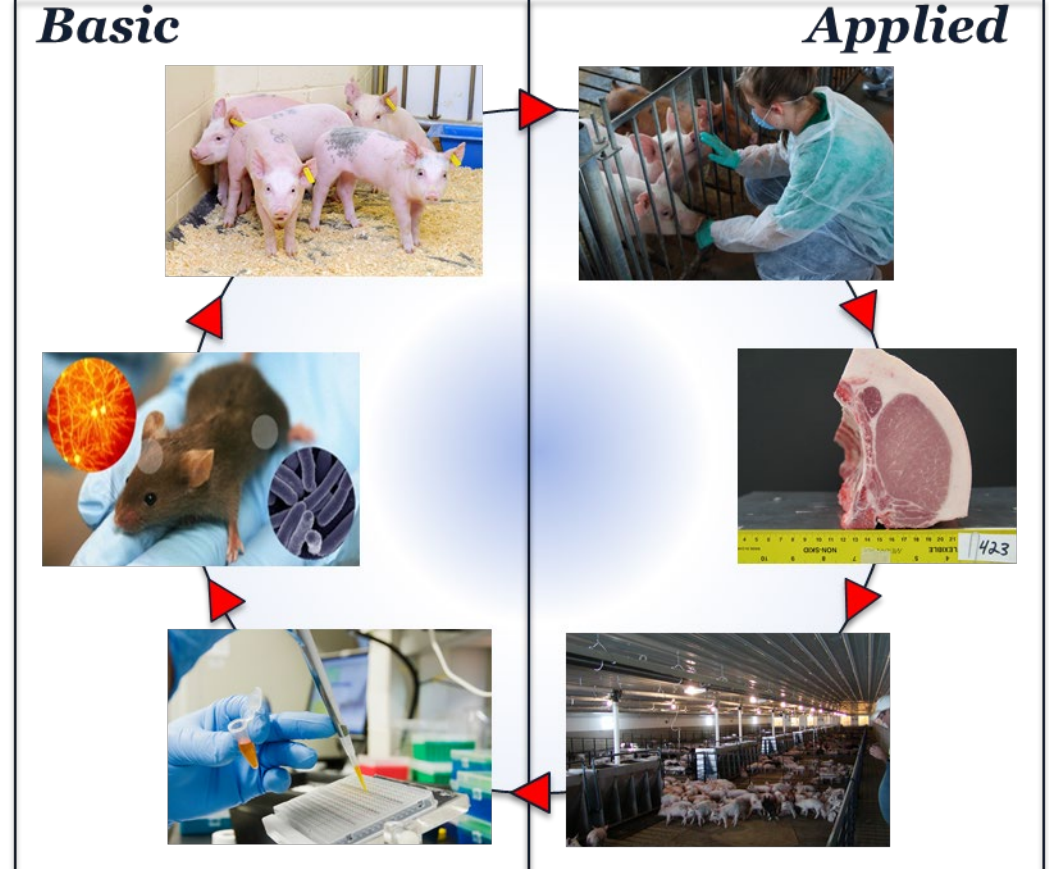
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN



College of Agricultural, Consumer and Environmental Sciences
Animal Sciences



- **Basic research**
 - Often transcends disciplinary boundaries
 - Impact may be years in the making
 - Connects department to highly visible campus programs
- **Applied research**
 - Discovery research that is species specific
 - Results are readily applicable
 - Facilitates the cell-to-society approach
- **Unique programs**
 - Microbiology, immunology, behavioral neuroscience
 - Companion animal nutrition
 - Conservation biology, evolutionary genetics



A diverse research portfolio!



ILLINOIS

College of Agricultural, Consumer
& Environmental Sciences

