

*Brainstorming scientific opportunities:
Synthesis on topics*

Animals models: Human applications

<http://oppnet.nih.gov>



The Challenge

- **Develop animals models that are matched to human behaviors**
- **Validate animals models**
- **Better metrics of behavior**



Develop animal models matched to human behavior

- **Which human behaviors?**
Typical/atypical; social/cognitive/etc
- **Which animals models?**
Primate, rodent, invertebrate...
- **Neuroethological and natural behaviors**



Validating animals models

- **Does it look the same?**
- **Does it use the same neural circuits?**
- **How predictive is it across multiple levels?**
- **How do we deal with individual heterogeneity?**



Better metrics of behavior

- **Richer measurements**
- **More quantifiable behaviors**
- **Better standardization of behavioral paradigms**
- **Better metrics of environmental factors**



The Opportunity

- **Validate animal models using endophenotypes, biomarkers and measures of neural circuitry**
- **Develop new animal behavioral paradigms borrowing from quantitative human fields like behavioral economics, psychophysics**
- **Compare across species (including humans)**



The opportunity (continued)

- **Need to support the training of behavioral specialists, and support training across fields.**
- **Develop systems for incorporating richer real time behavioral and physiological measurements**

