OSU Center for Clinical and Translational Science: 2019 Annual Scientific Meeting







CTSA Clinical & Translational [®] Science Awards



ACCELERATING DISCOVERIES TOWARD BETTER HEALTH

"a mission to translate new knowledge as a sacred social compact"

Basic Science

Clinical Research

Implementation and Population Health

















Unique skills required for career success Long time frame for adoption of new discoveries to improved health

Most discoveries fail to translate



Translational Science = Team Science





The OSU CCTS Call to Action

Sustainable and innovative translational research to improve health

Ultimate Objective

Train and Cultivate Translational Science Workforce

Enhance Scientific Innovation Innovating Research Processes (Quality, Ethics and Efficiency) and Methods

Translational Research Engine



CCTS Foundational Efforts

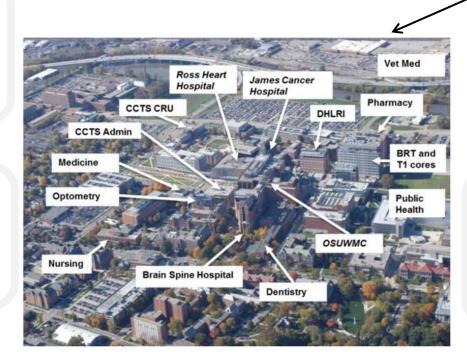


Informatics Integrated Scientific Cores Education Programs and Tools Engaged Patients and Stakeholders

CCTS Activity in Last Year

\$94 Million NIH Funding to support CCTS since 2008

189 vouchers and >200 CCTS consults and services for CTS





30 teams funded under 7 different pilot initiatives

> 200 new
publications
since 2018

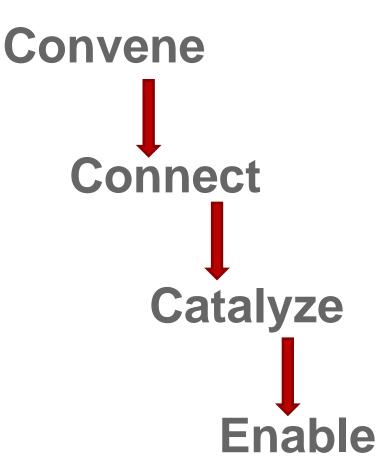
> 600 attendees at workshops and programs 11 faculty scholars and 7 TL1 awarded



The Ohio State University

CENTER FOR CLINICAL AND TRANSLATIONAL SCIENCE

Advancing New Scientific Initiatives





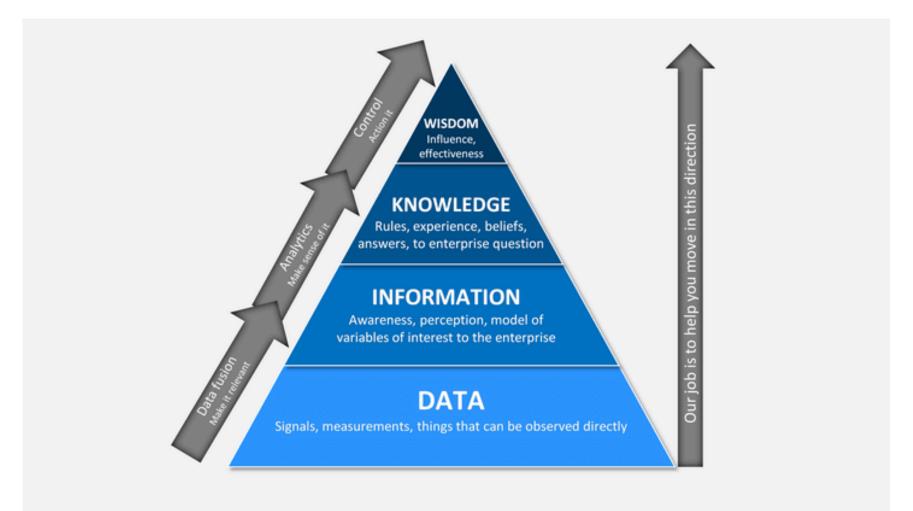


Biomedical Sciences Generates Vast Quantities of Data





Generating Knowledge from Data





Artificial Intelligence and Machine Learning

Artificial Intelligence

Machine Learning

Deep Learning

The subset of machine learning composed of algorithms that permit software to train itself to perform tasks, like speech and image recognition, by exposing multilayered neural networks to vast amounts of data. A subset of AI that includes abstruse statistical techniques that enable machines to improve at tasks with experience. The category includes deep learning Any technique that enables computers to mimic human intelligence, using logic, if-then rules, decision trees, and machine learning (including deep learning)



Our Approach to Enhancing Application of AI and ML to Advance Translational Science

Convene

CCTS-Office of Research-CCC AI workshops

Connect

CCTS Annual Scientific Meeting

Catalyze

- Pilot funding initiatives and vouchers
 - Methods development
 - Address scientific hypotheses

Enable

- Expertise discovery
- AI Toolkits
- Increasing access to high quality shareable datasets

STATE UNIVERSITY

Overview of CCTS Meeting

- Keynote presentation
 - Catalyzing Innovation in Translational Science
- Plenary talks
 - ML in monitoring mental health and performance
 - Genomics and phenotyping
 - Al and microelectronics
 - Ethical issues in AI
- Oral and Poster Presentations
 - Highlights of translational science and AI-ML activities ongoing at OSU and NCH
- Facilitated table talks
 - Small group discussion around CTS topics
 - opportunity to network and collaborate



The OSU Center for Clinical and Translational Science

"Coming together is a beginning. Keeping together is progress.



Working together is success."

Henry Ford



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