

# Collaborating

for

# Change

## Educational Food Safety Materials for Consumers

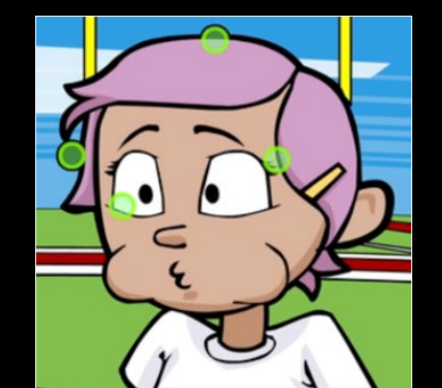
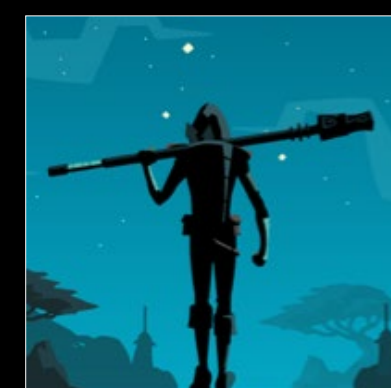
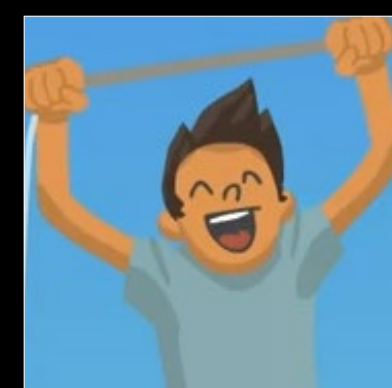
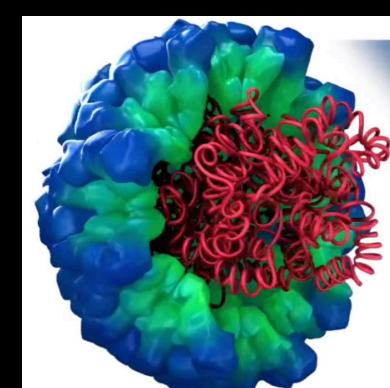
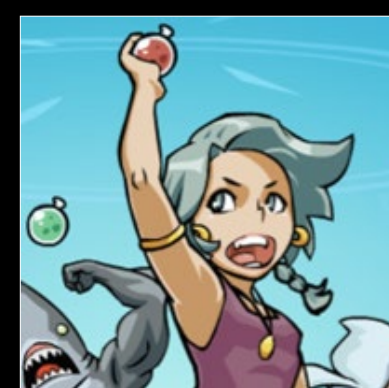
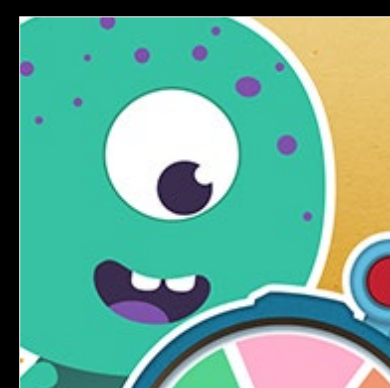


USDA's  
97th  
Annual

United States Department of Agriculture  
Agricultural Outlook Forum

*Building on Innovation:  
A Pathway to Resilience*

February 18-19, 2021 • <https://www.usda.gov/oce/ag-outlook-forum>



Barbara Chamberlin, PhD • [bchamber@nmsu.edu](mailto:bchamber@nmsu.edu) •  @bchamber

NMSU Innovative Media, Research & Extension • [LearningGamesLab.org](http://LearningGamesLab.org)



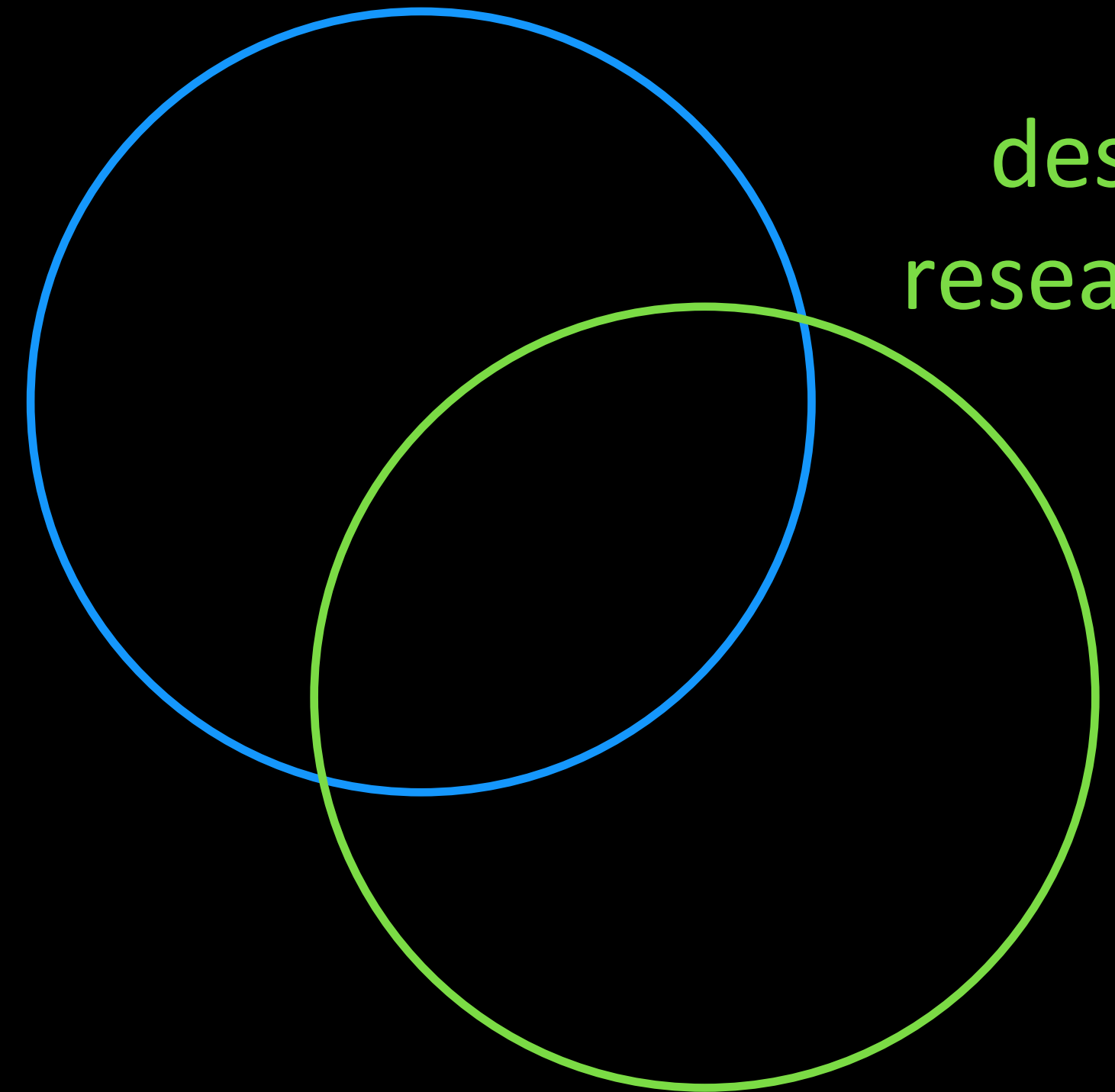
# Learning Games Lab at New Mexico State University





original research

design  
research

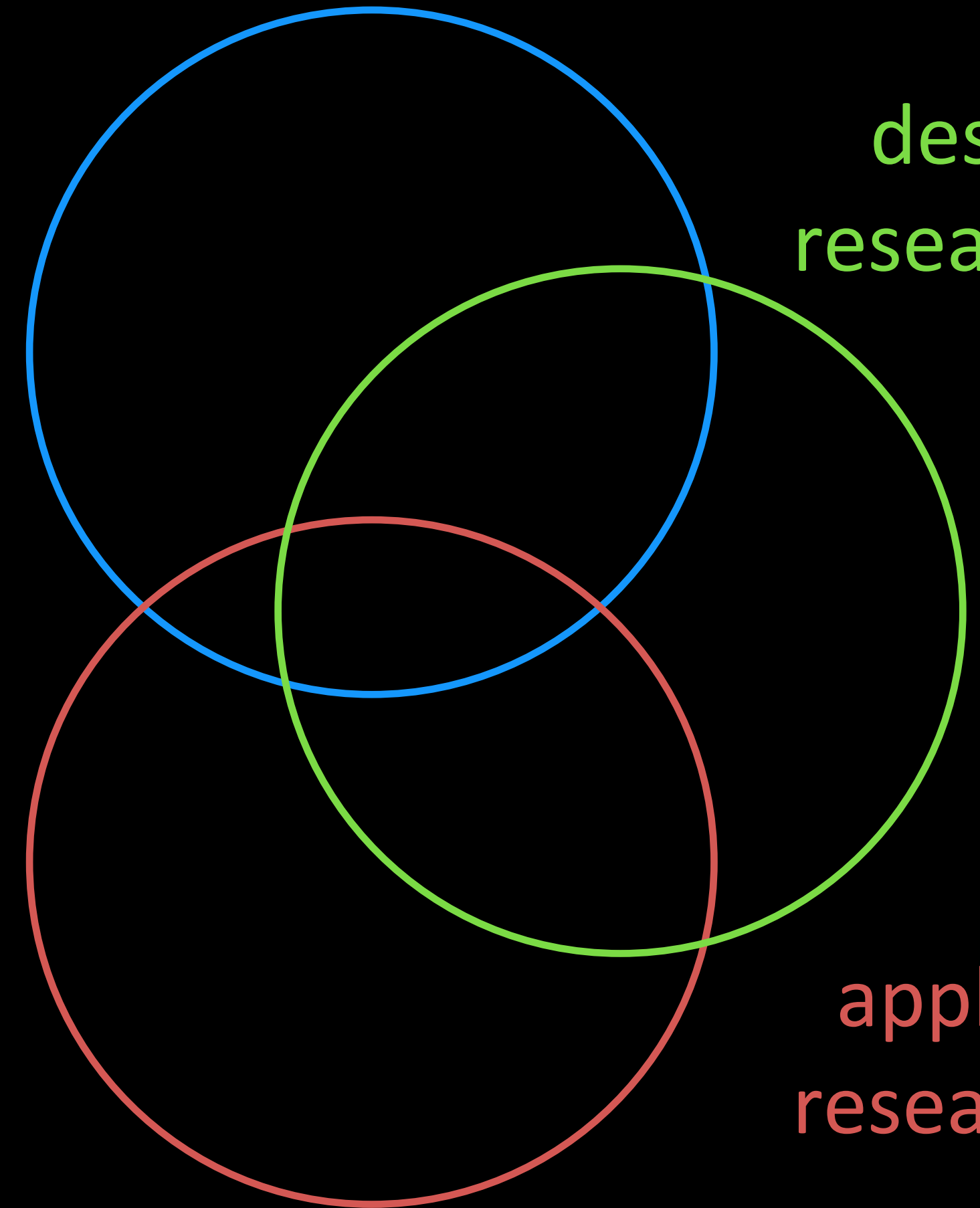


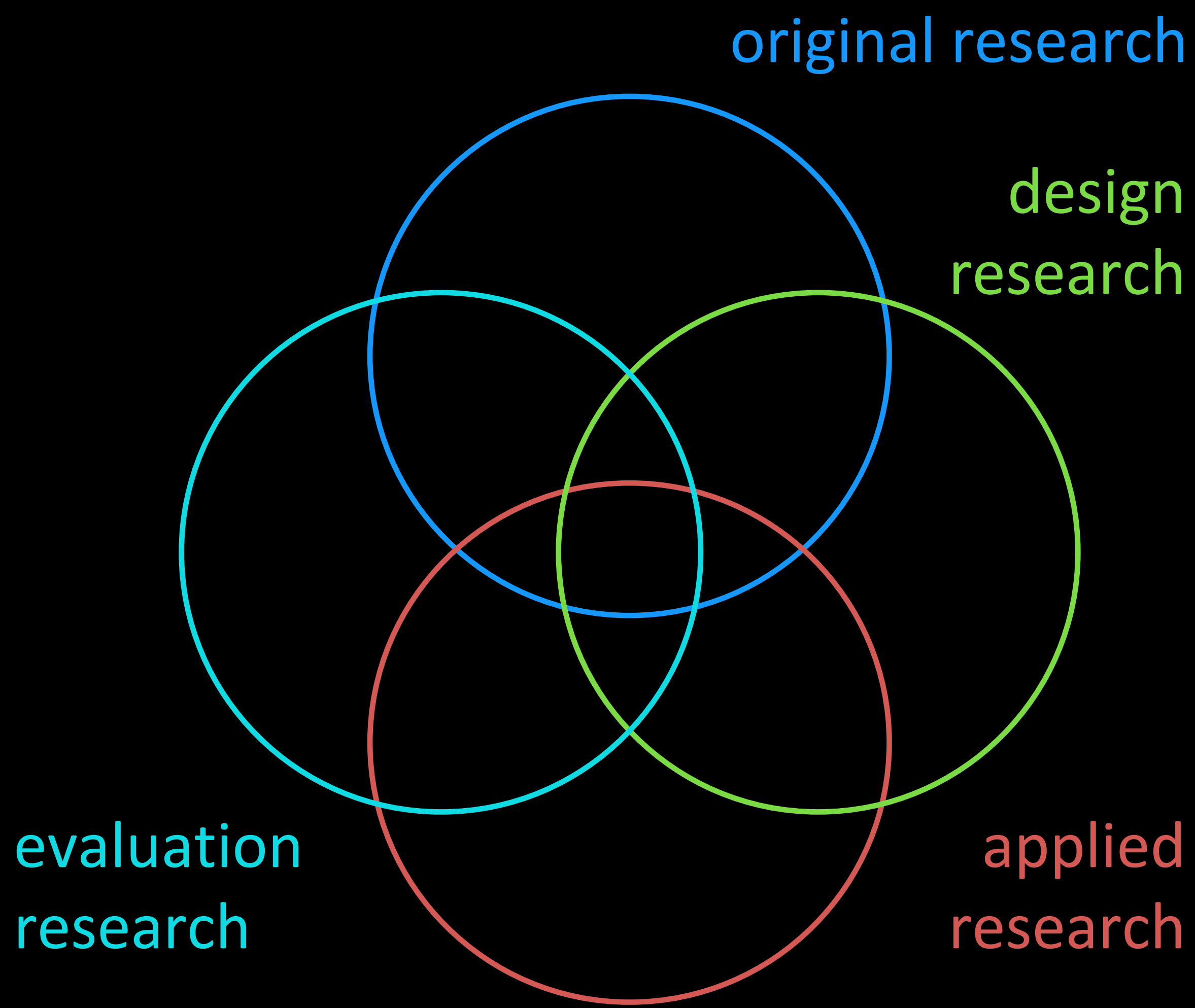


original research

design  
research

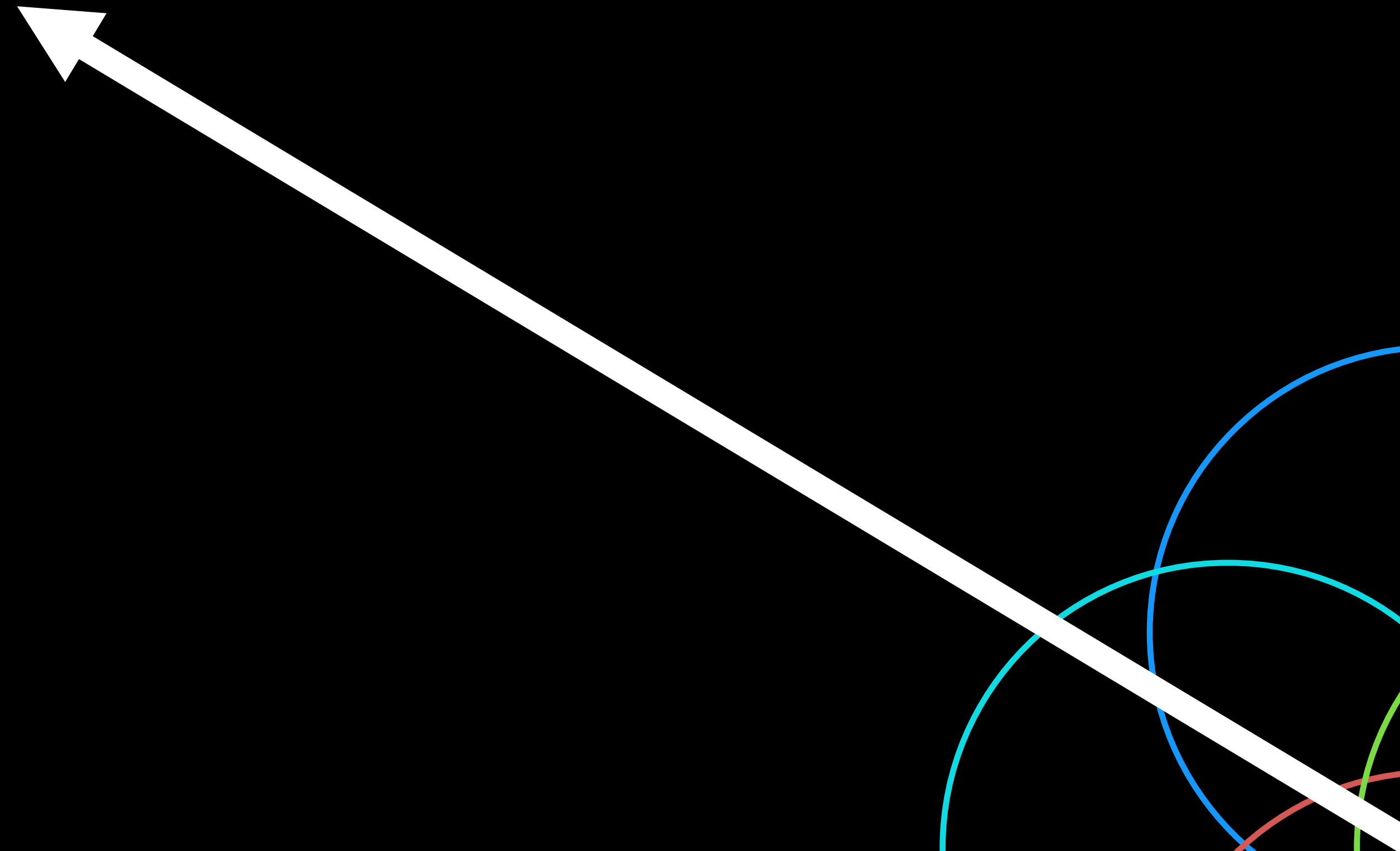
applied  
research







*safer*

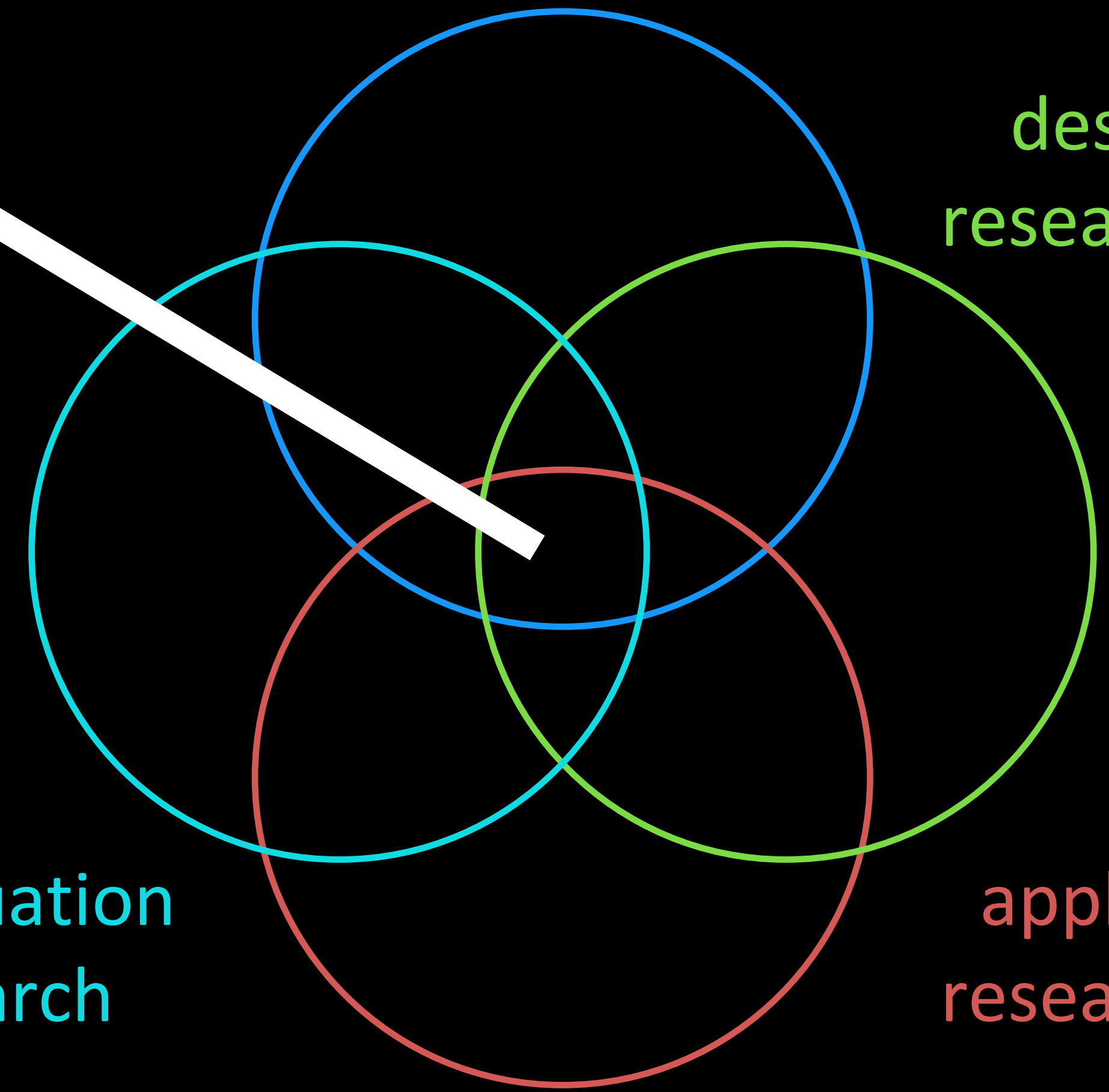


original research

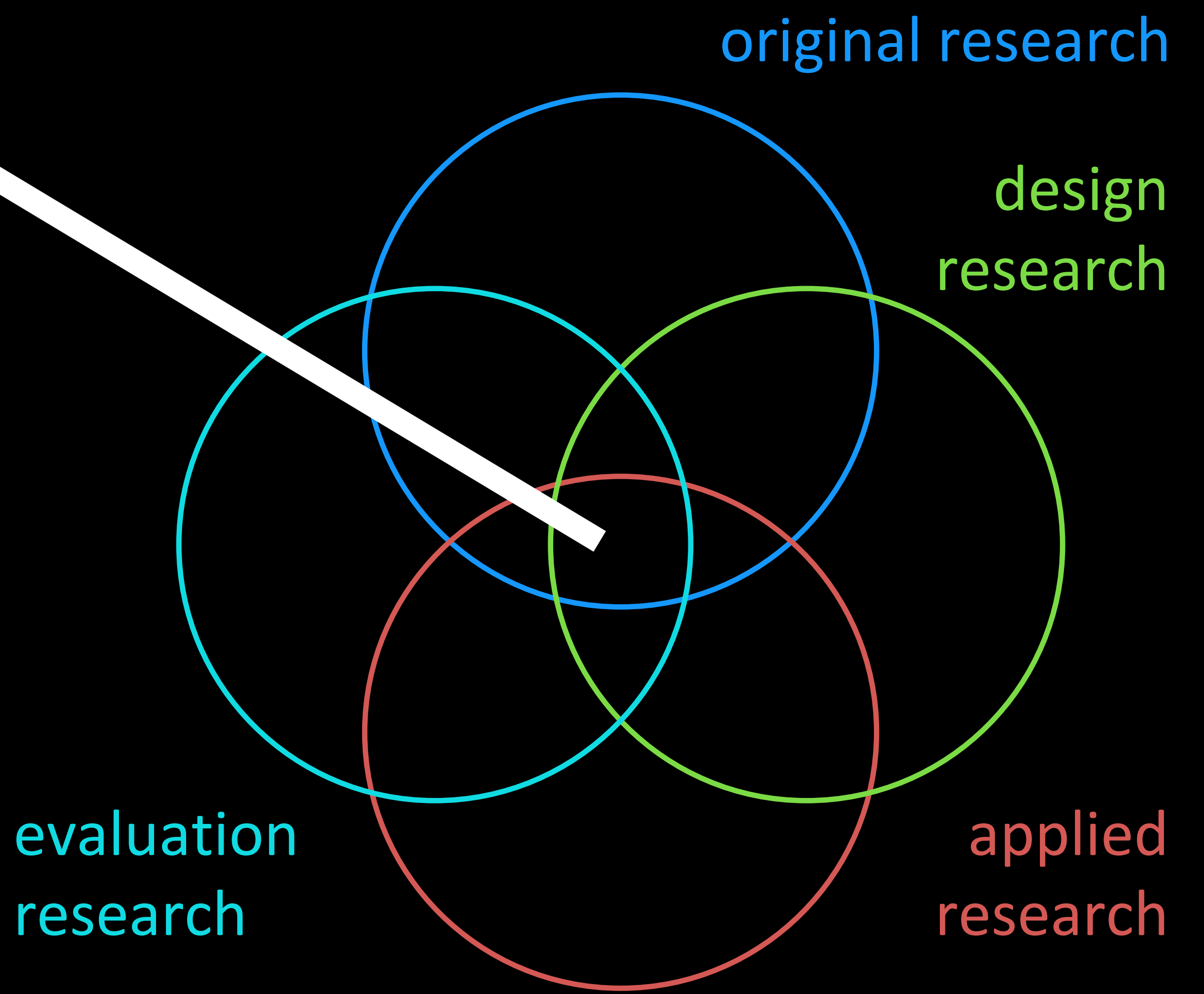
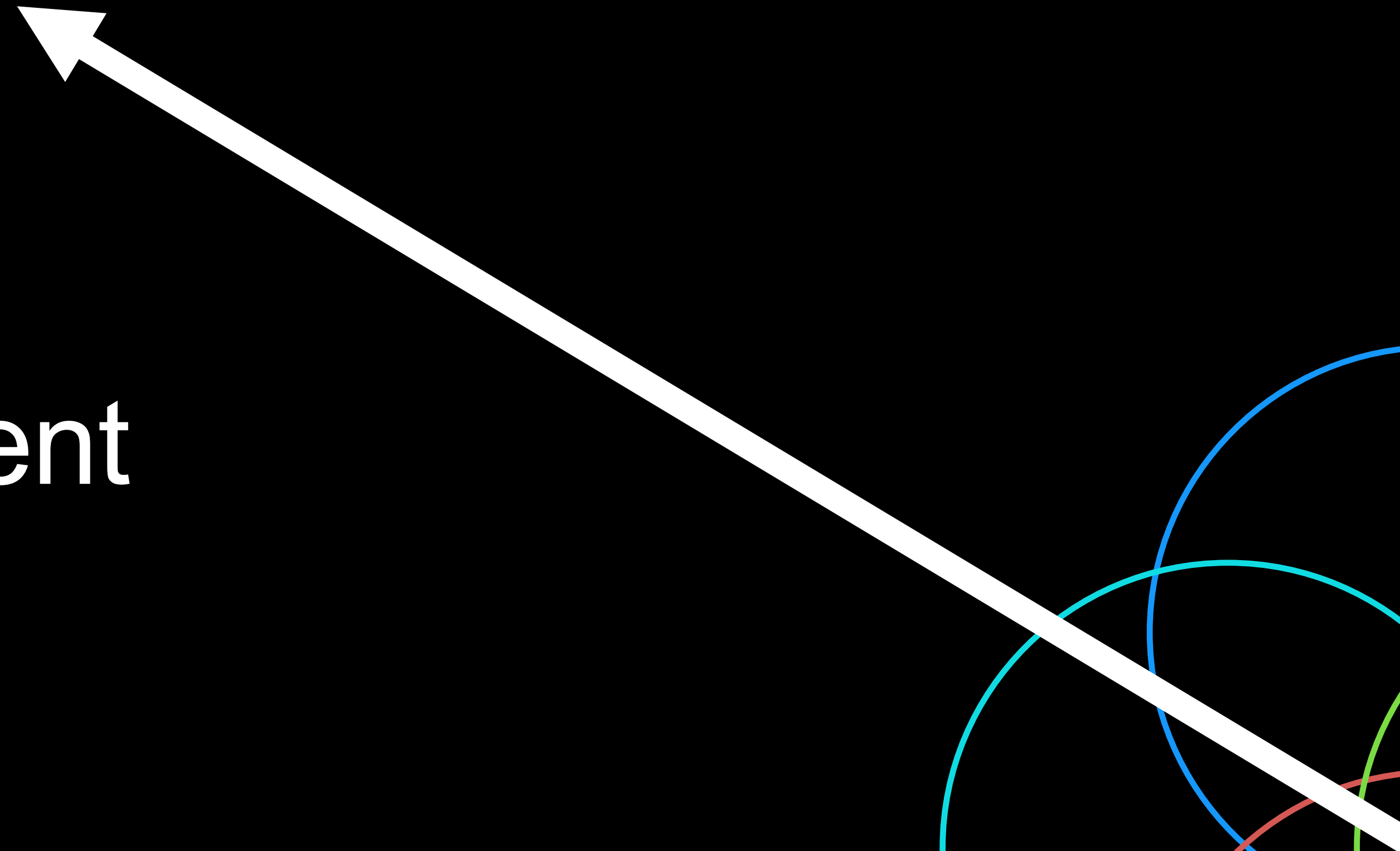
design  
research

evaluation  
research

applied  
research

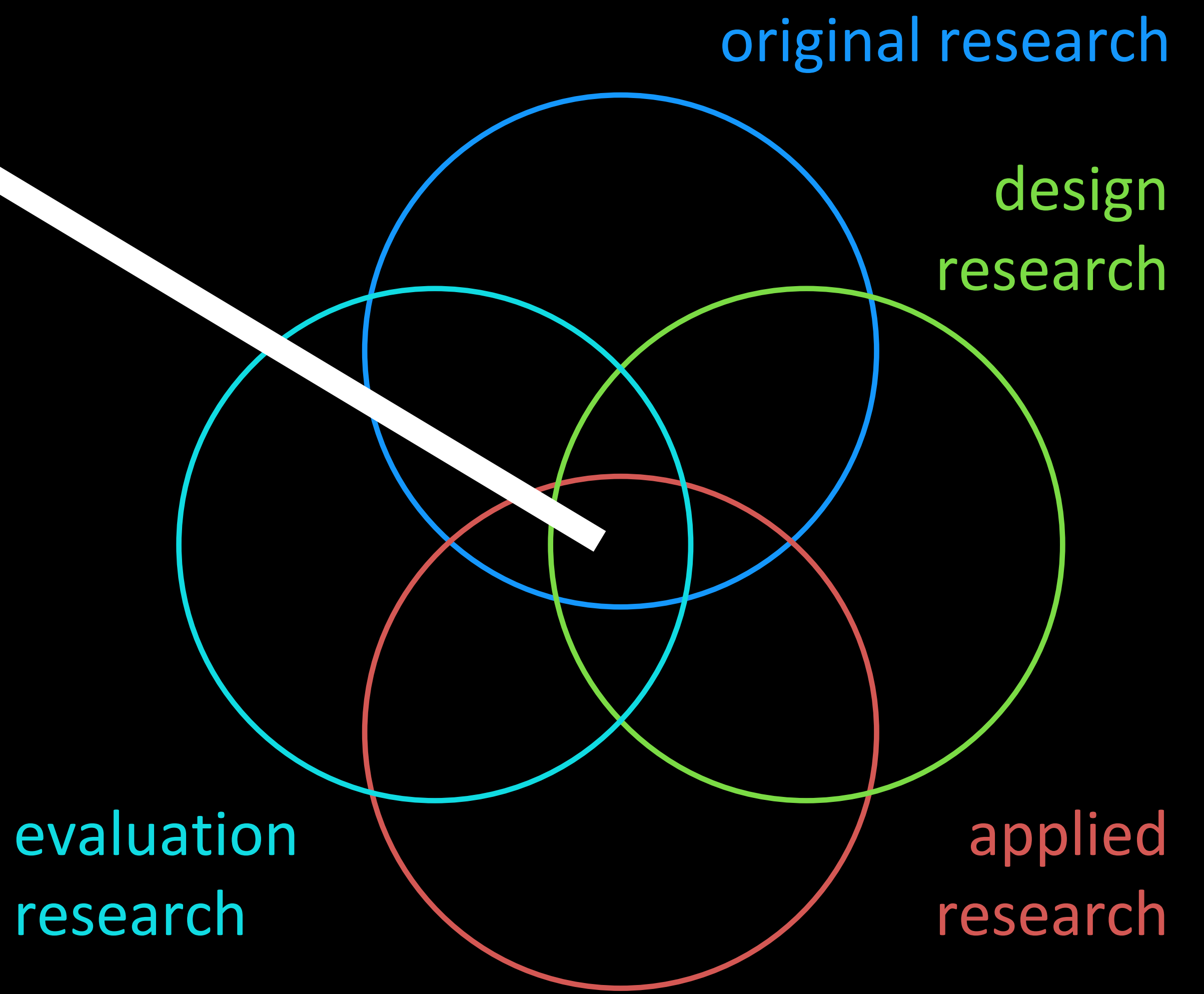
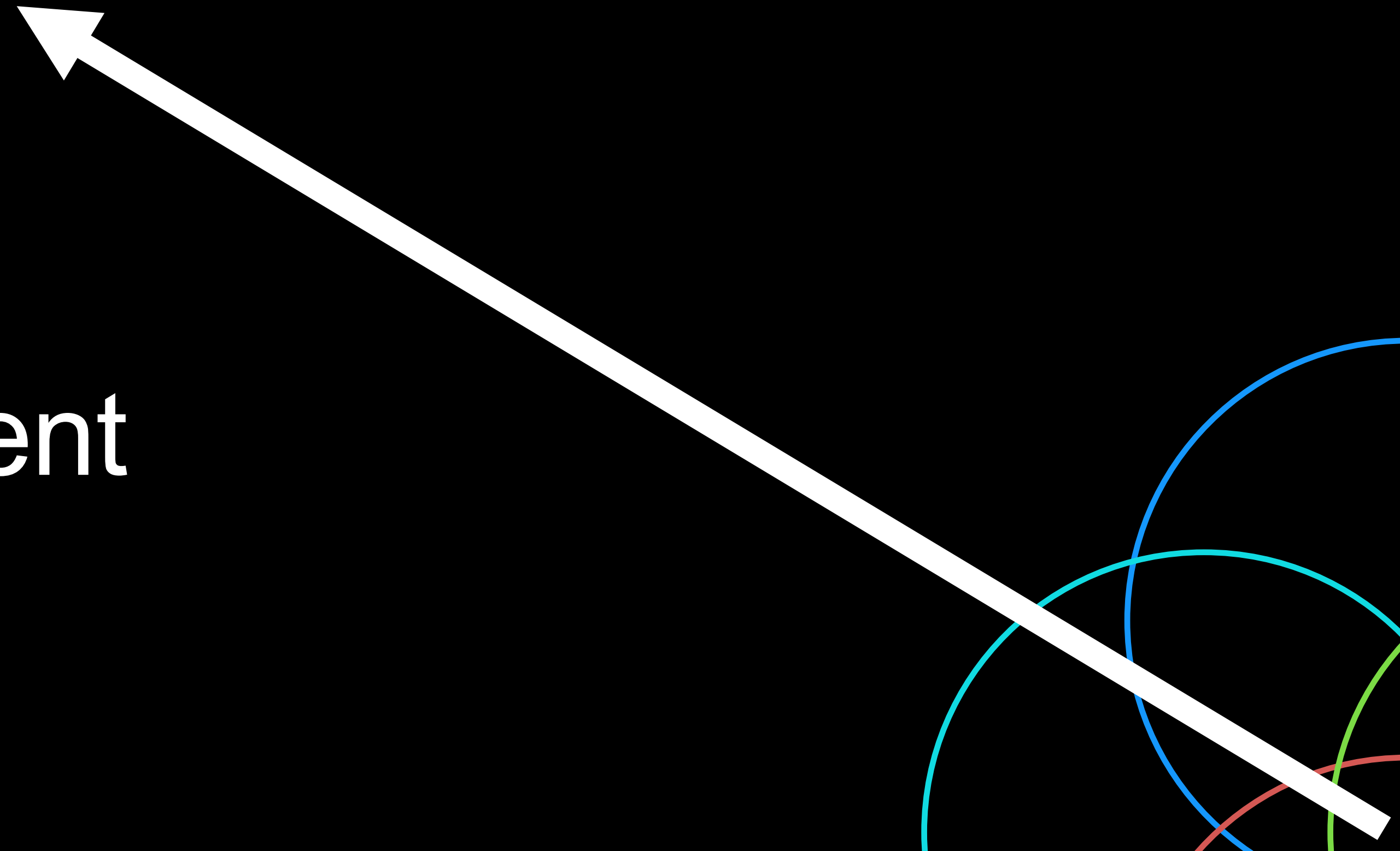


*safer*  
more efficient

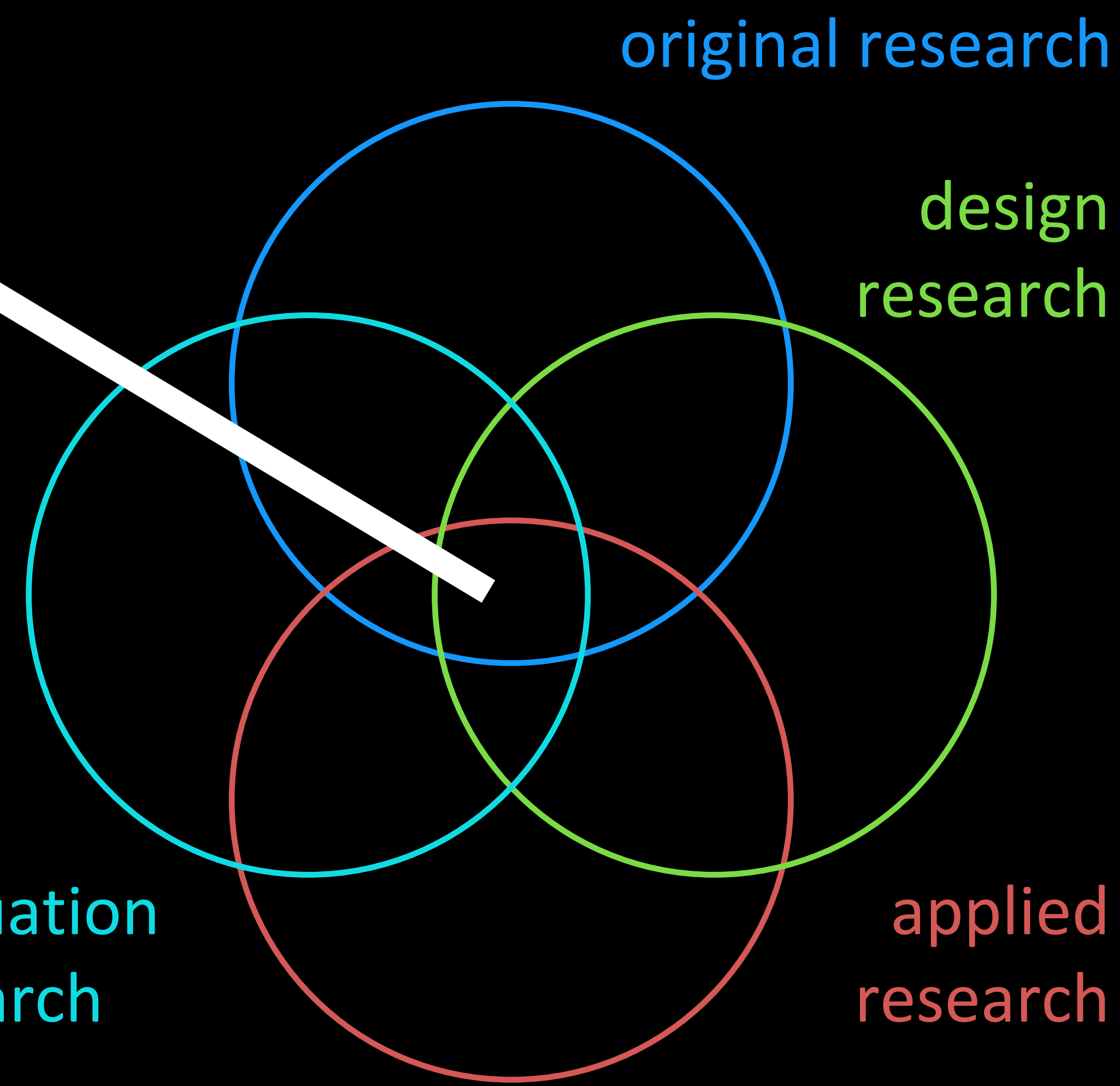
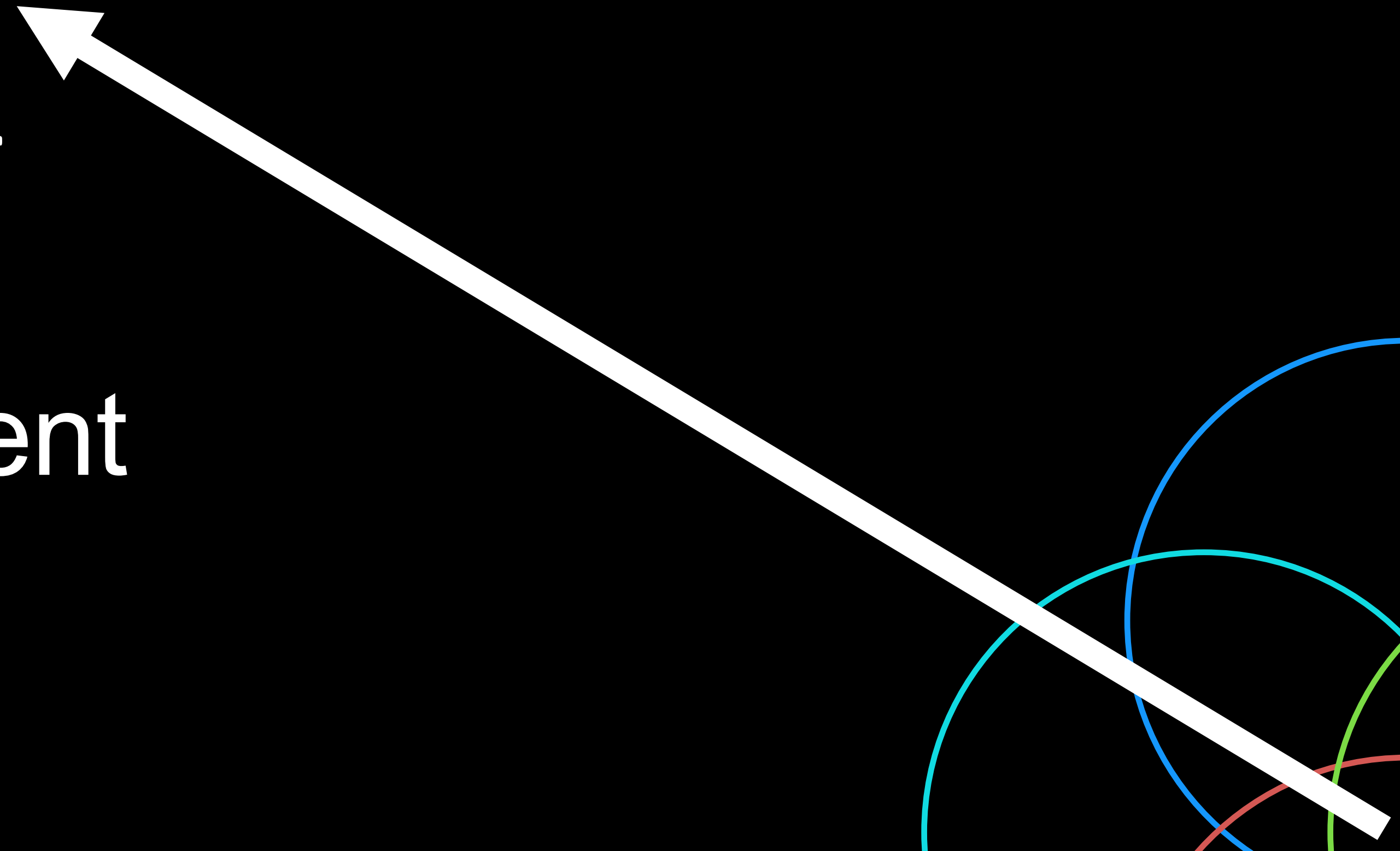




*safer*  
*wiser*  
more efficient



*safer*  
healthier  
*wiser*  
more efficient



original research

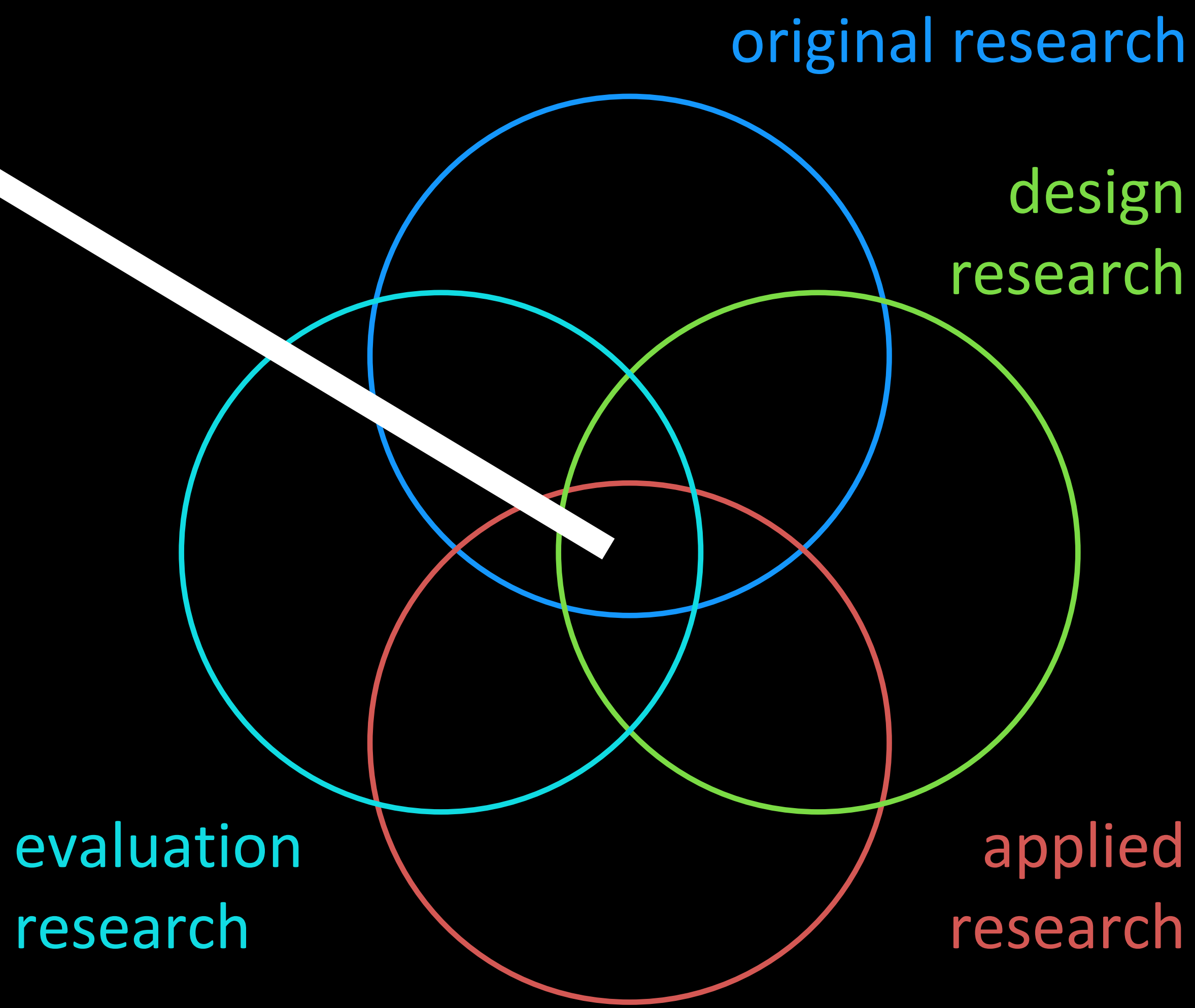
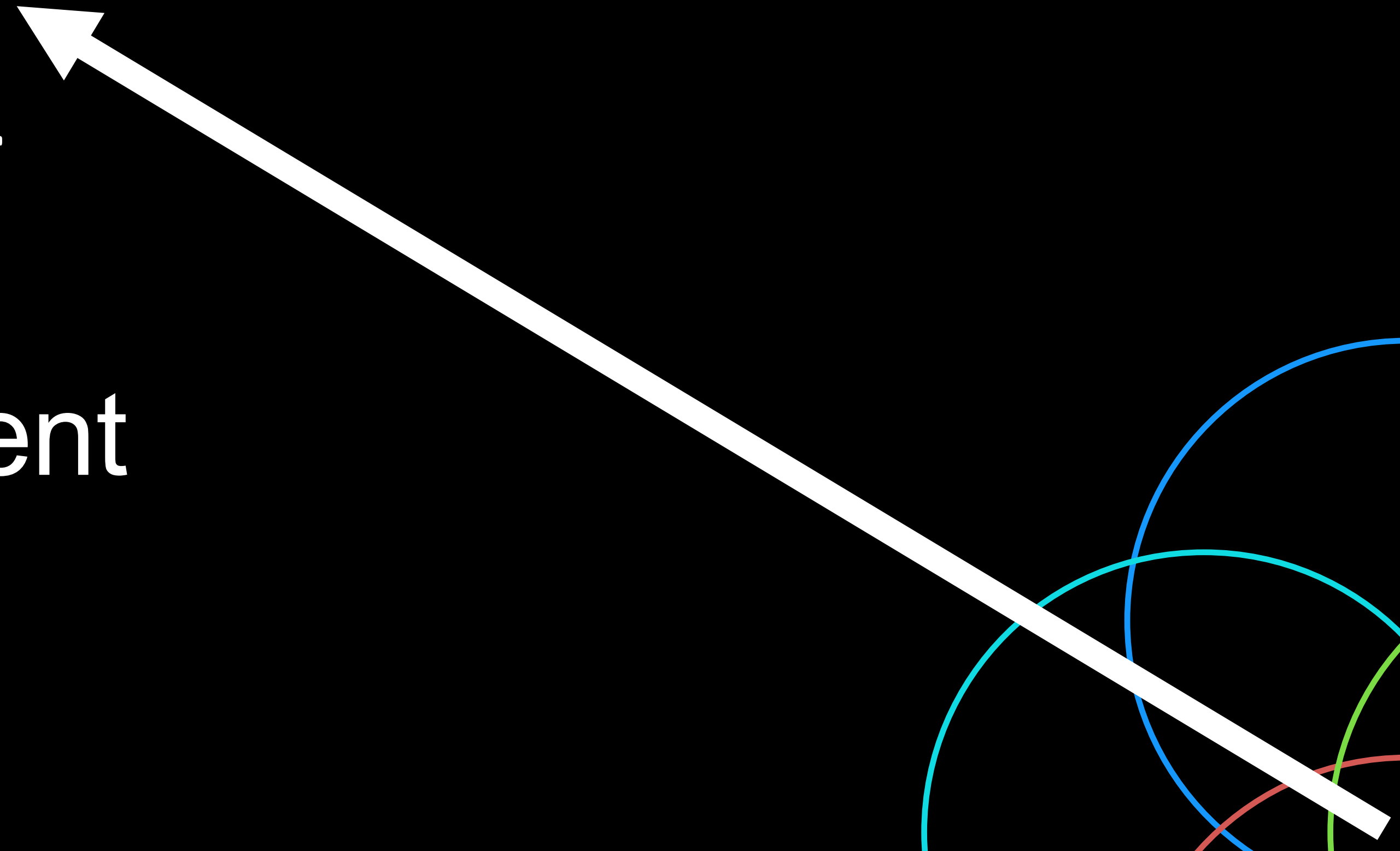
design research

evaluation research

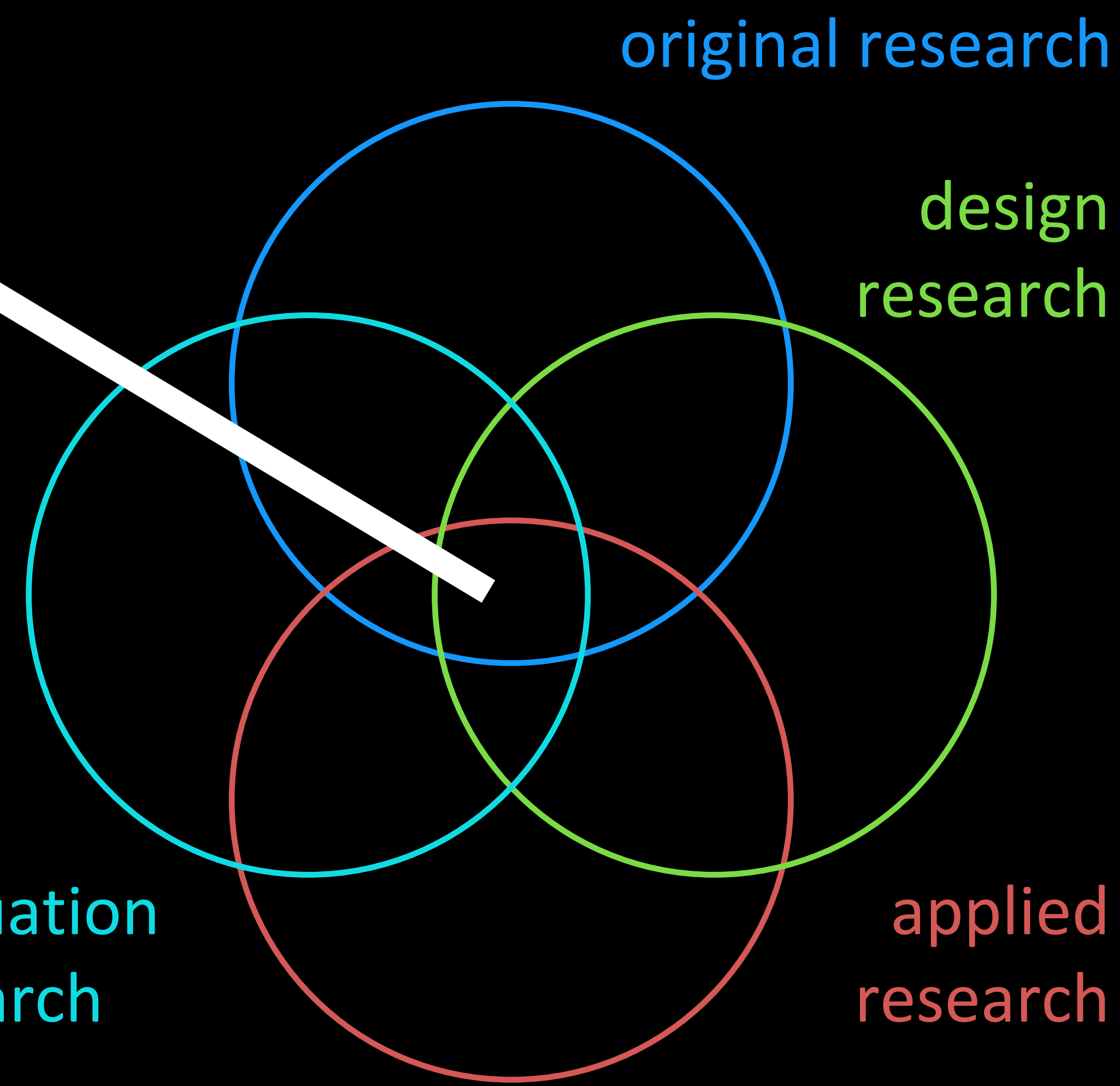
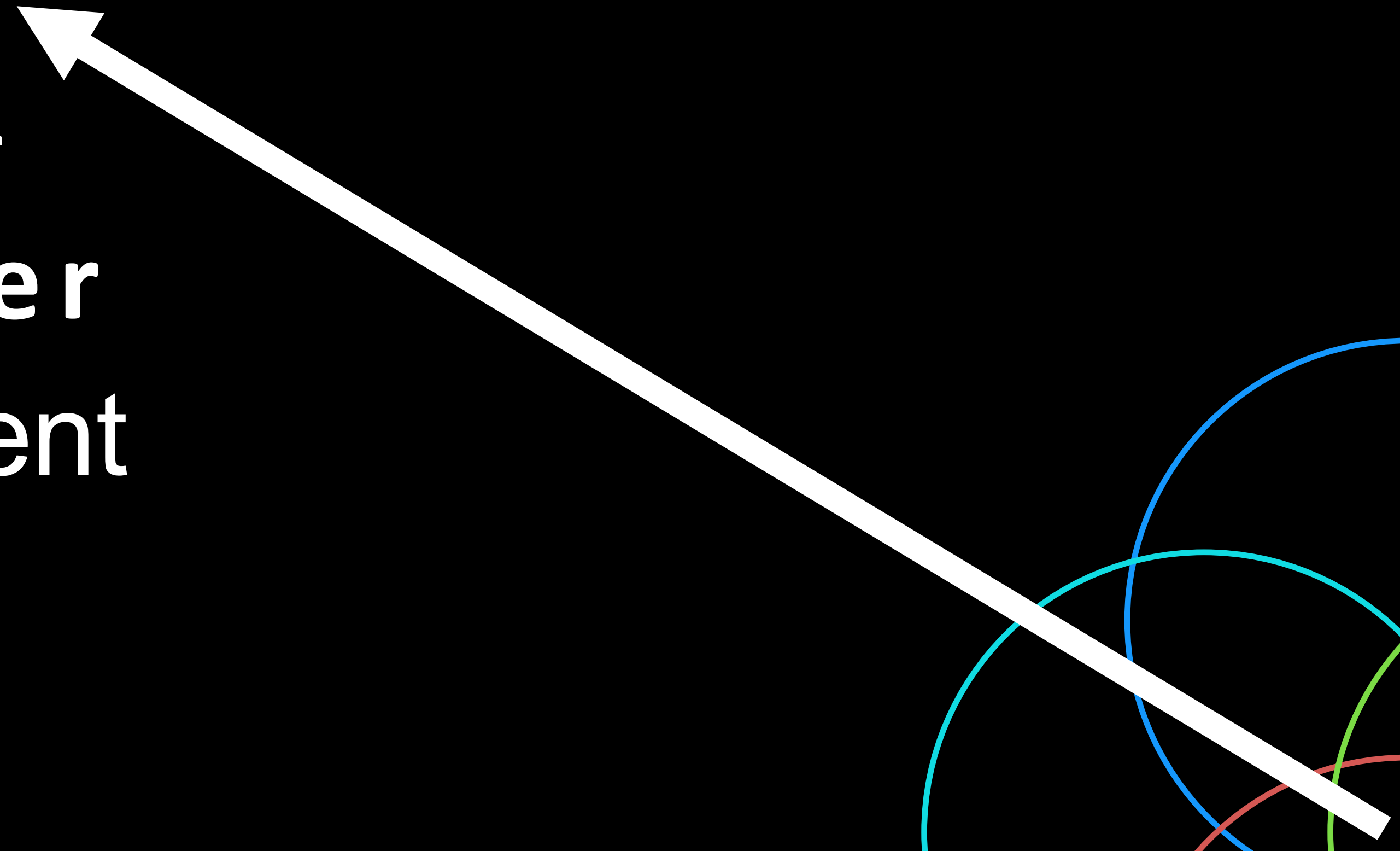
applied research



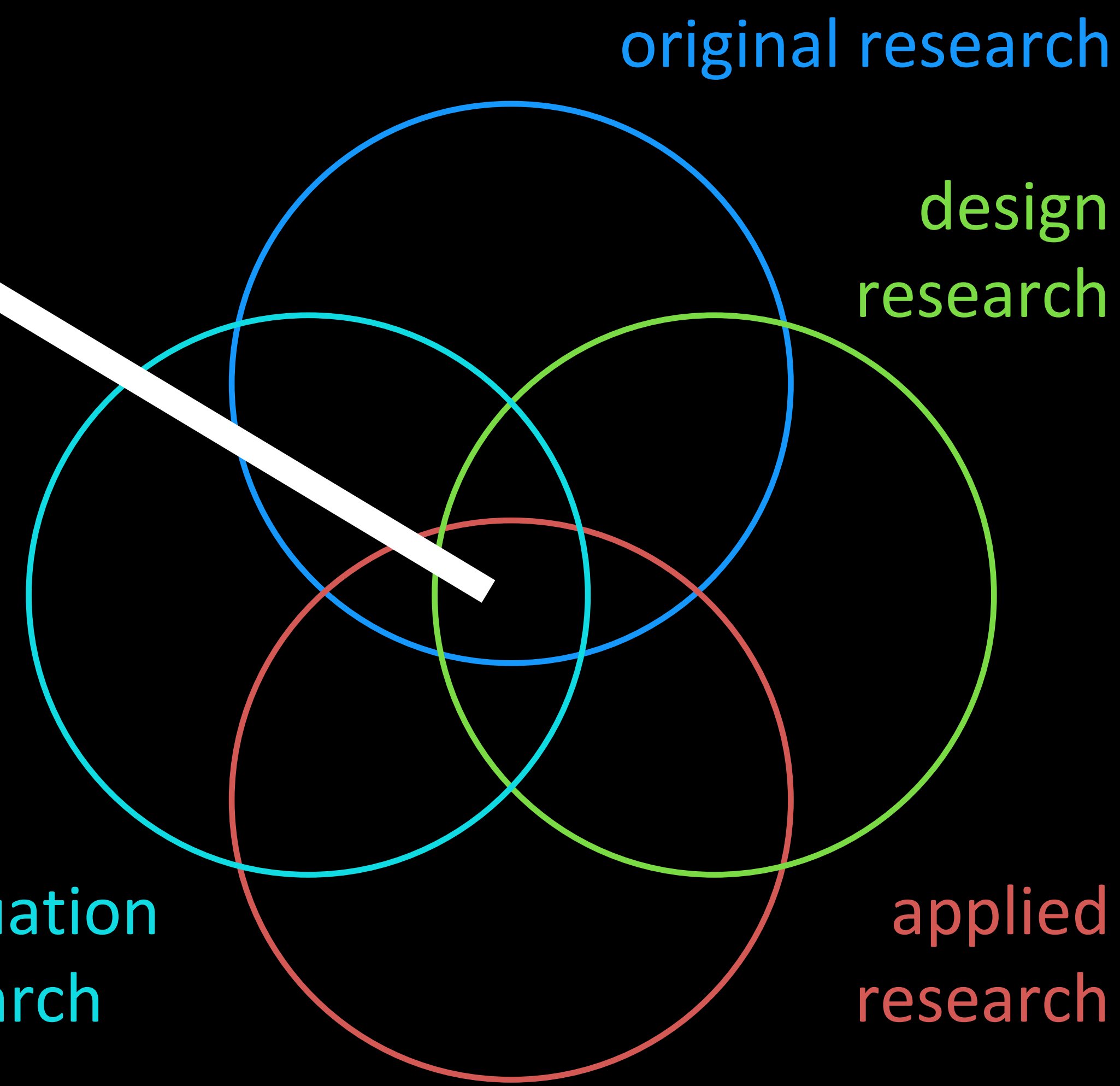
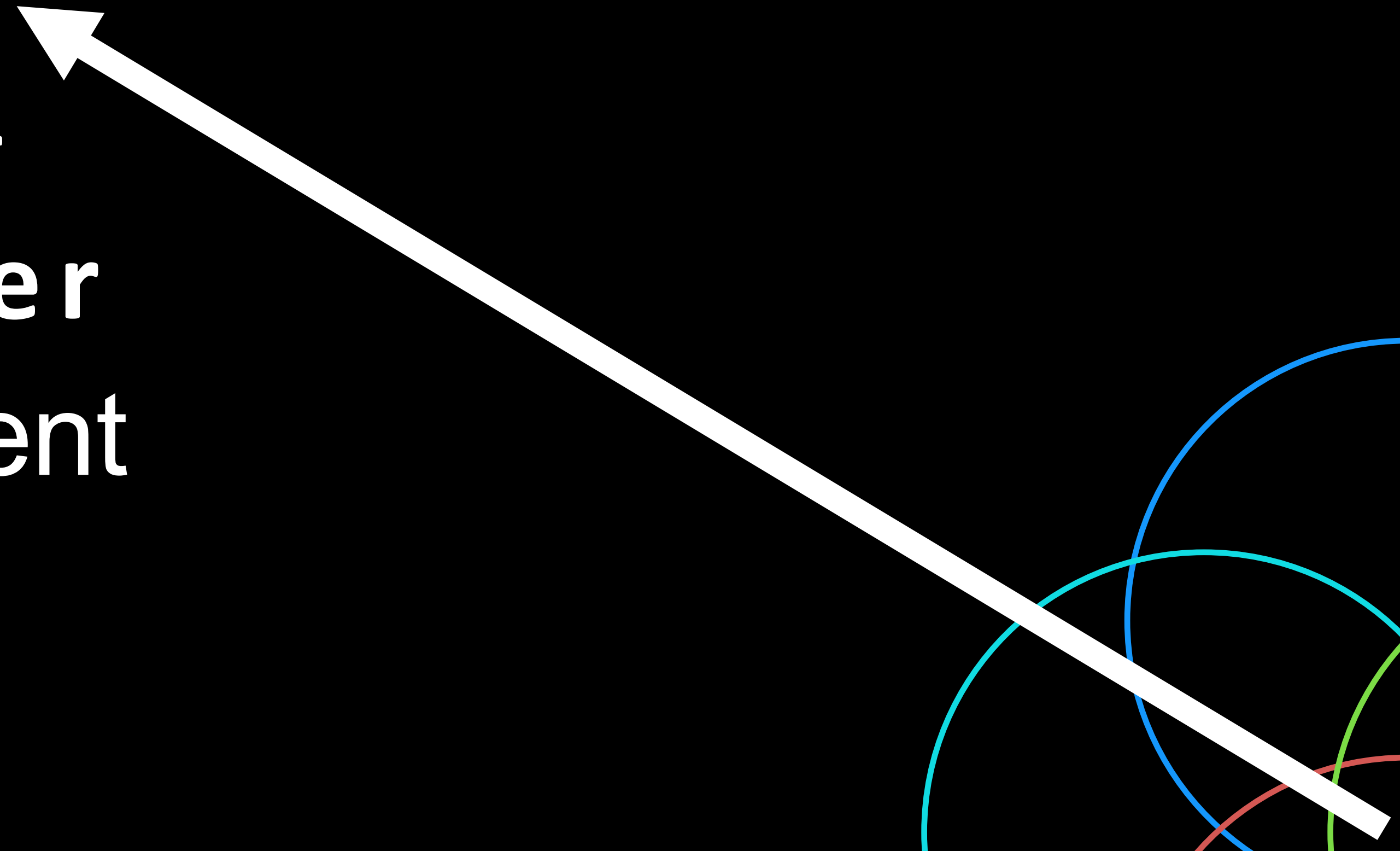
*cheaper*  
*safer*  
healthier  
*wiser*  
more efficient



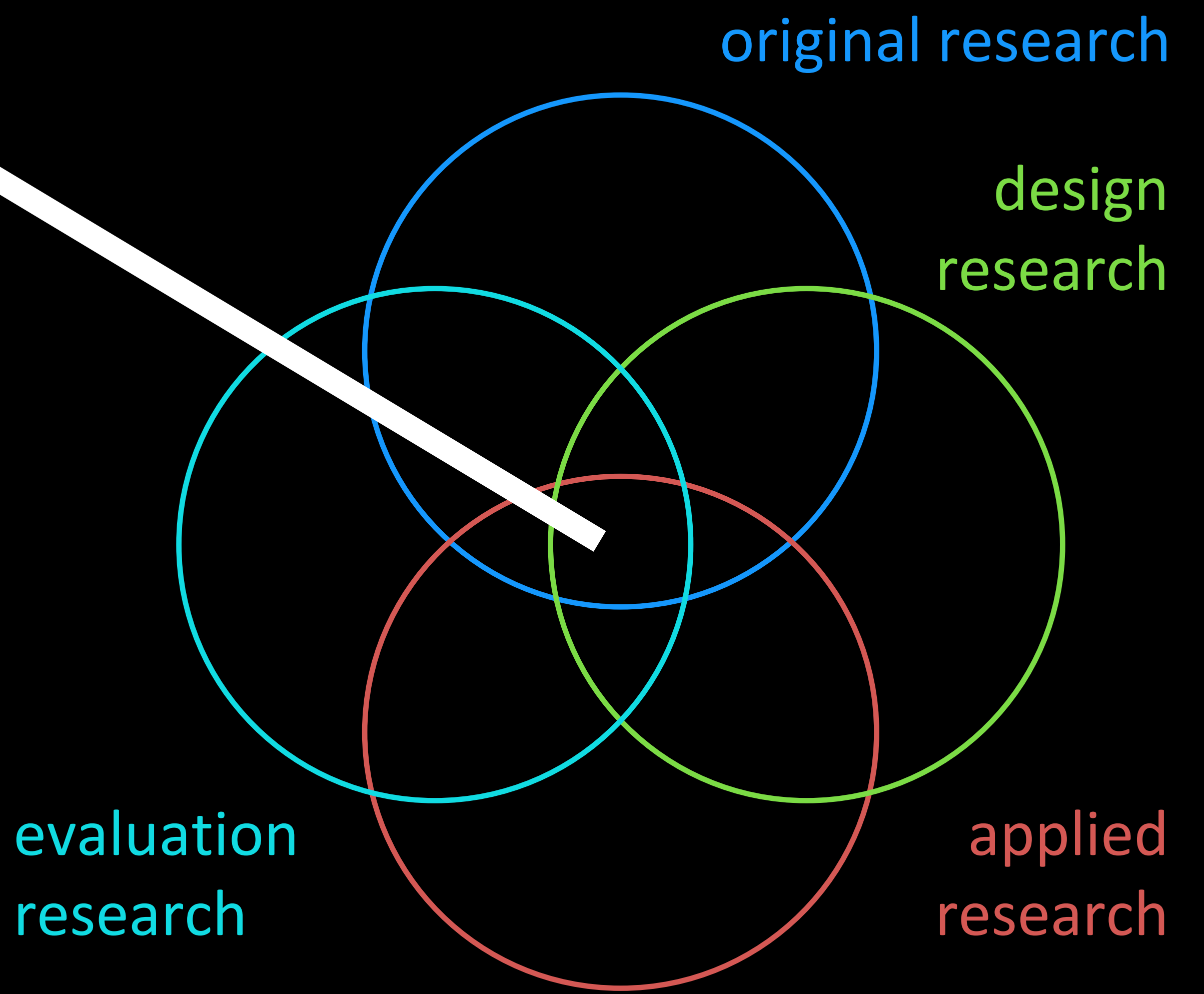
*cheaper* *wiser*  
**safer** **healthier**  
**richer**  
**more efficient**



*cheaper* *wiser*  
**safer** **healthier**  
**richer**  
**more efficient**  
**smarter**



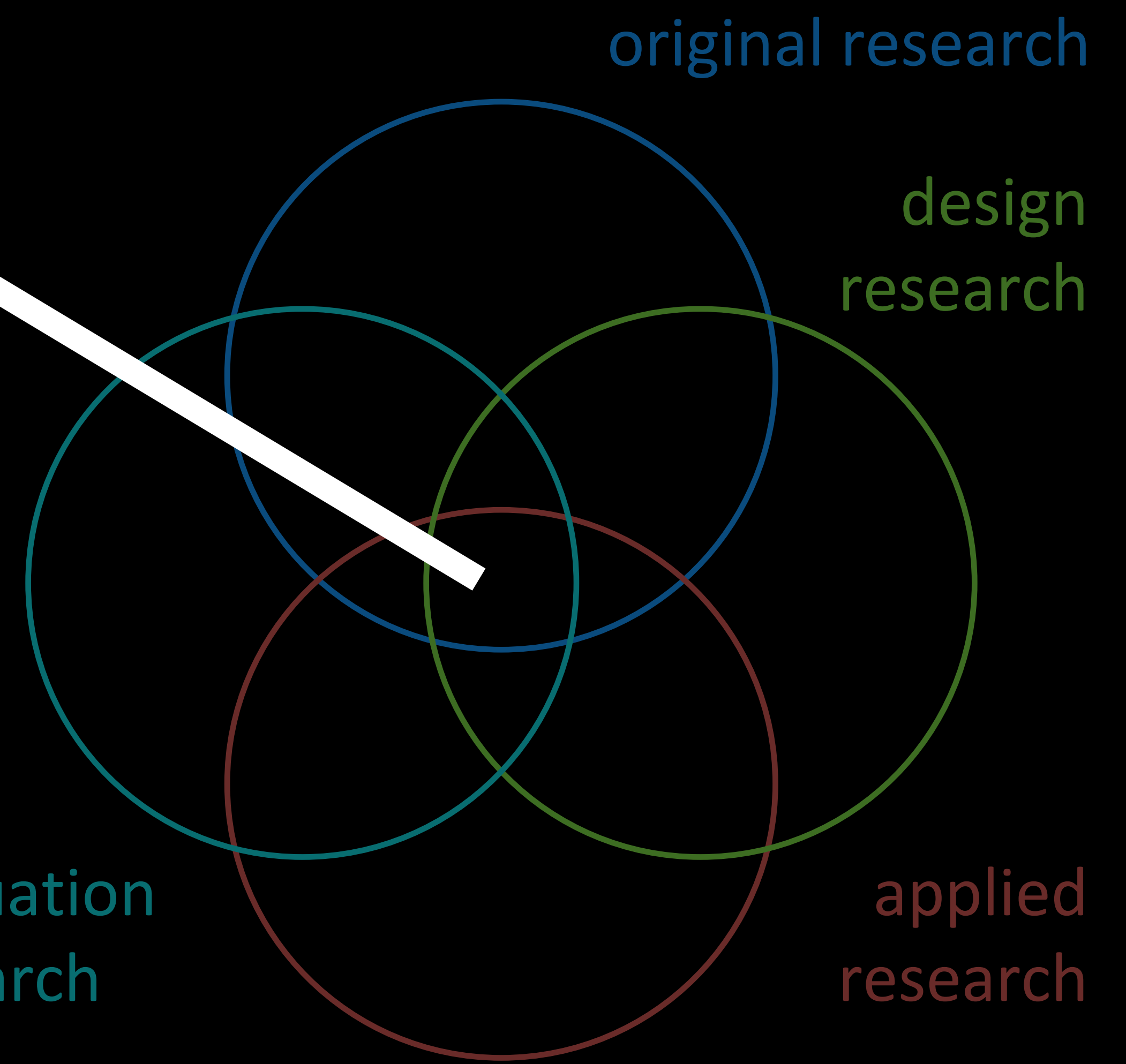
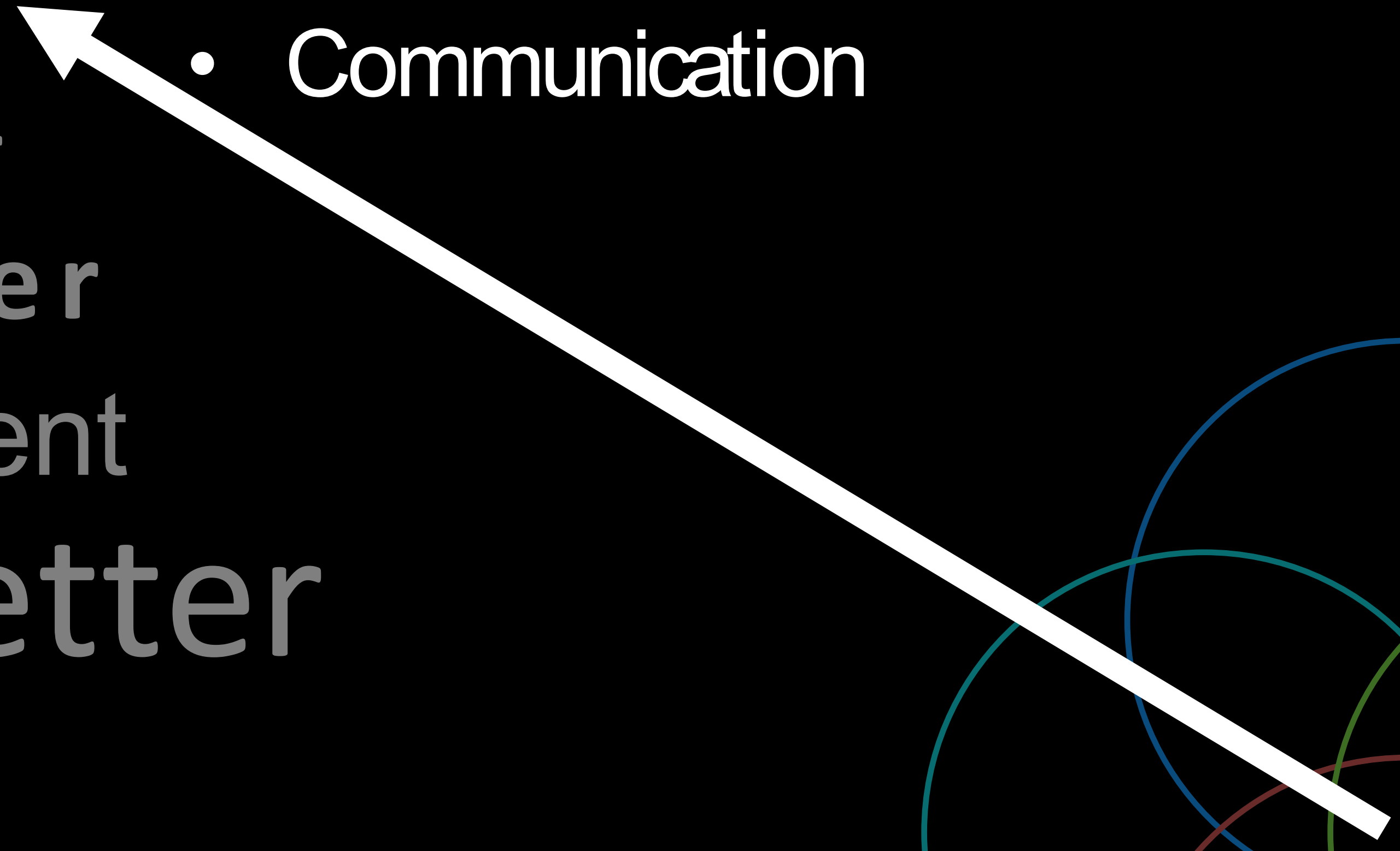
*cheaper* *wiser*  
*safer* healthier  
★ richer  
more efficient  
*smarter* better





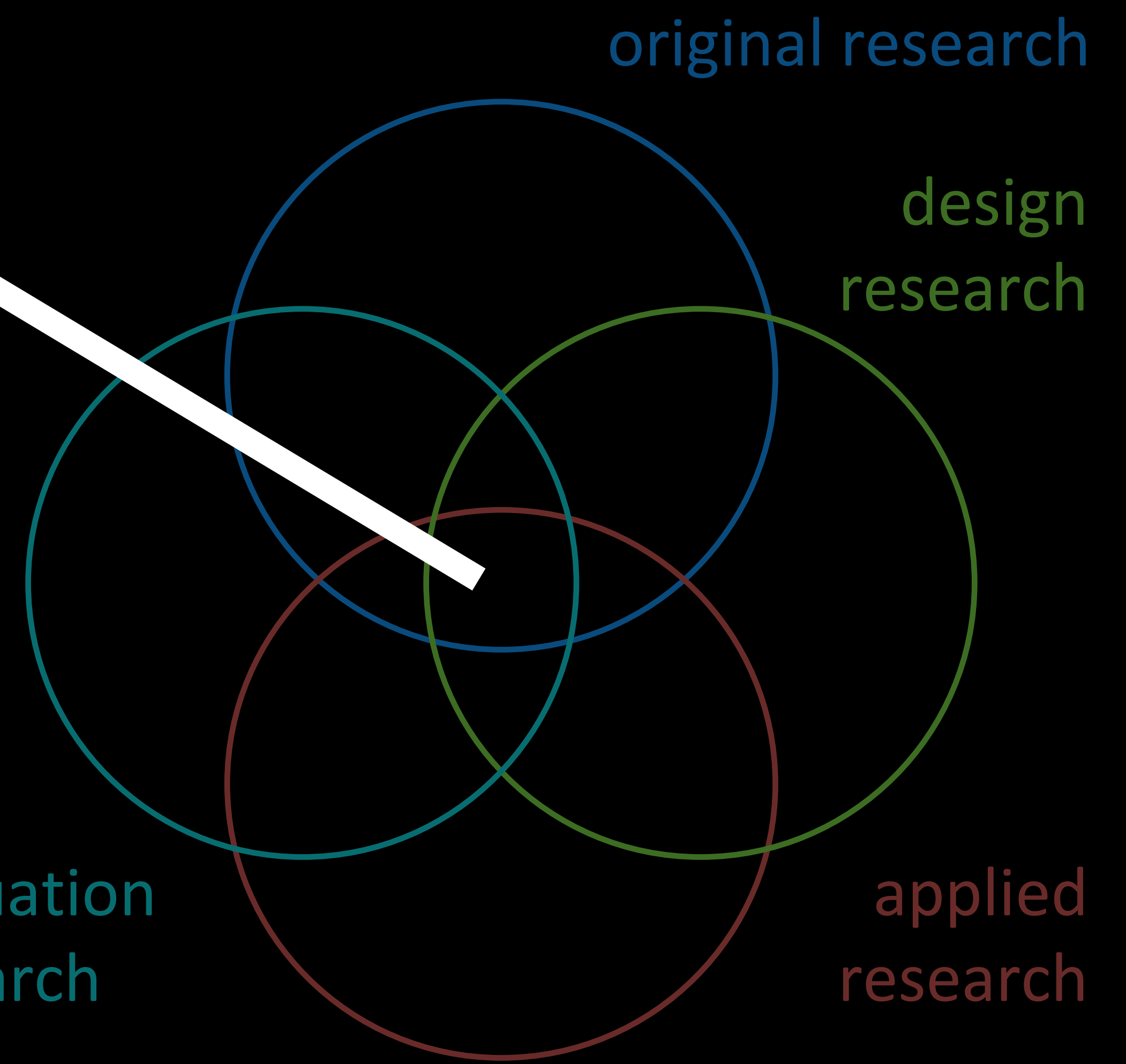
*cheaper* *wiser*  
*safer* healthier  
★ **richer**  
more efficient  
*smarter* **better**

• Communication



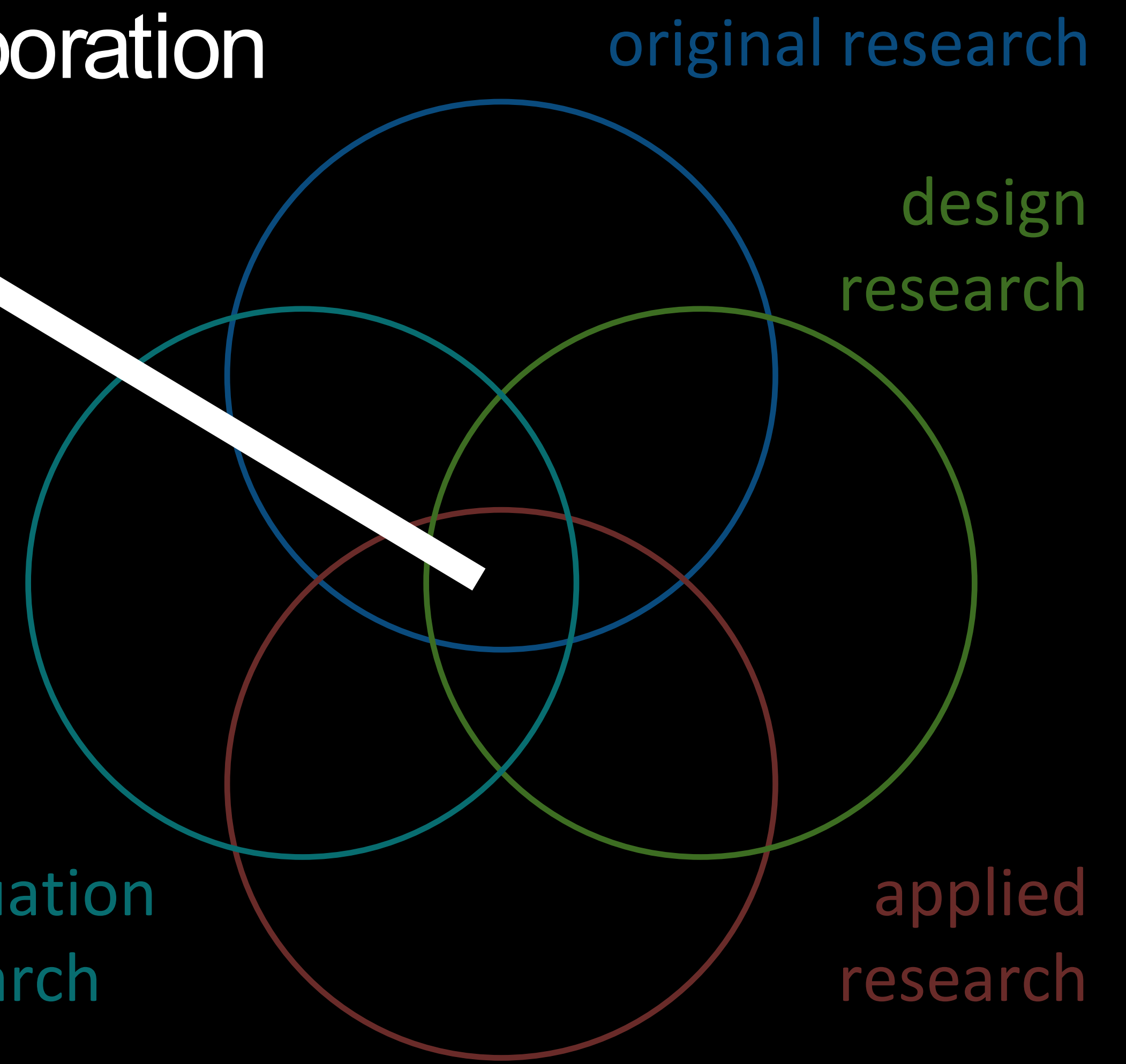
*cheaper* *wiser*  
*safer* healthier  
★ **richer**  
more efficient  
*smarter* **better**

- Communication
- Land-grant University



*cheaper* *wiser*  
*safer* healthier  
★ **richer**  
more efficient  
*smarter* **better**

- Communication
- Land-grant University
- Collaboration



Collaboration  
is the new  
*competition.*



Collaboration

*helps us*

*change behavior.*



About Don't Be Gross

View All Animations

## Vomit Girl

Good Boy

We Have A Winner

Vomit Girl

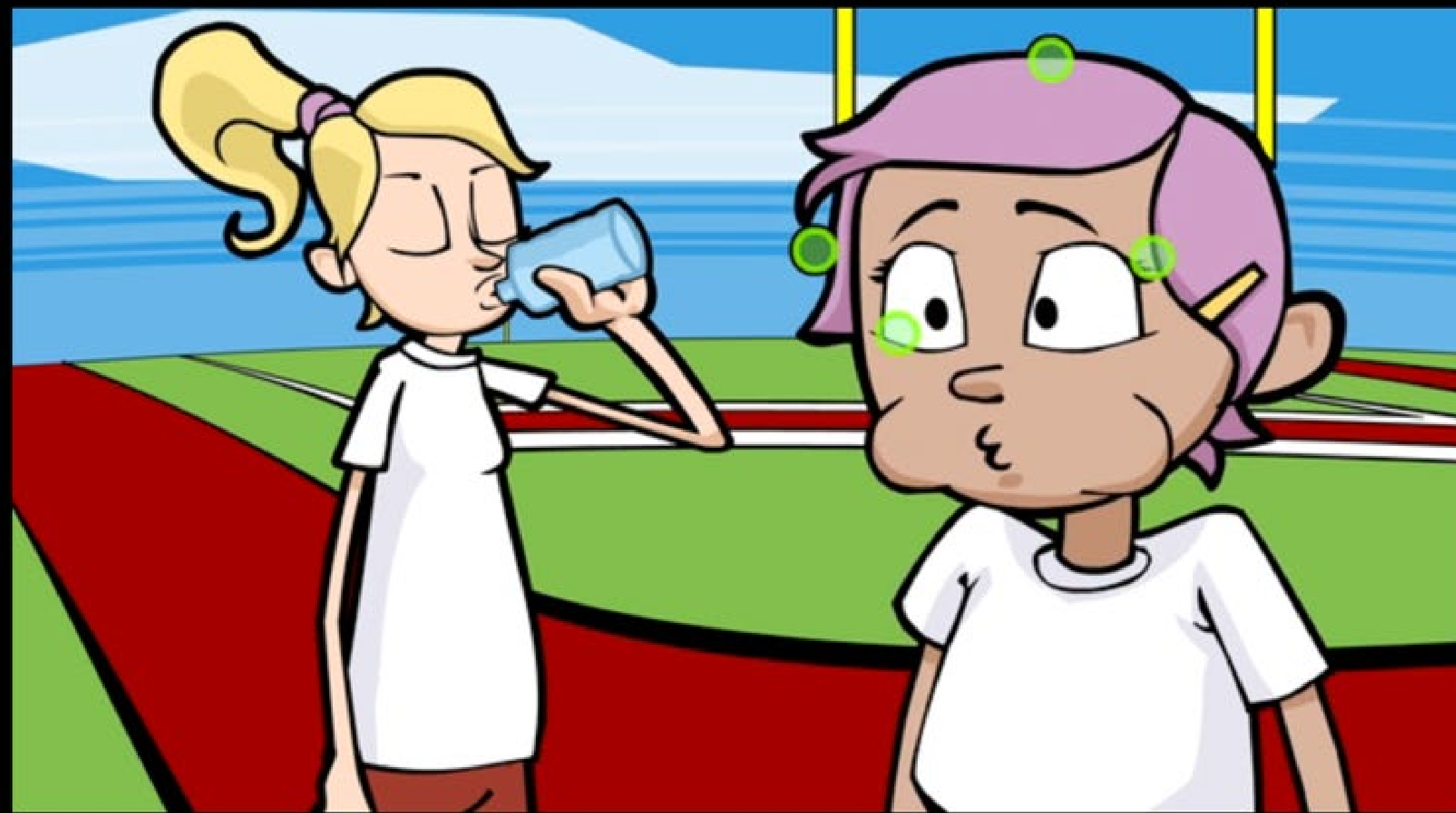
10 Minutes Earlier

Suds of War

Sticky Situations

HandCam

5 Second Invasion



[dontbegross.com](http://dontbegross.com)



eating and health

# Julia Child Was Wrong: Don't Wash Your Raw Chick

by MARIA GODOY

August 23, 2013 8:48 AM ET



[Listen to the Story](#)

Morning Edition



Produced by the Learning Games Lab at New Mexico State University in conjunction with Jennifer Quinlan and Drexel University, as part of USDA grant 2009-51110-05853.



eating and health

## Julia Child Was Wrong: Don't Wash Your Raw Chick

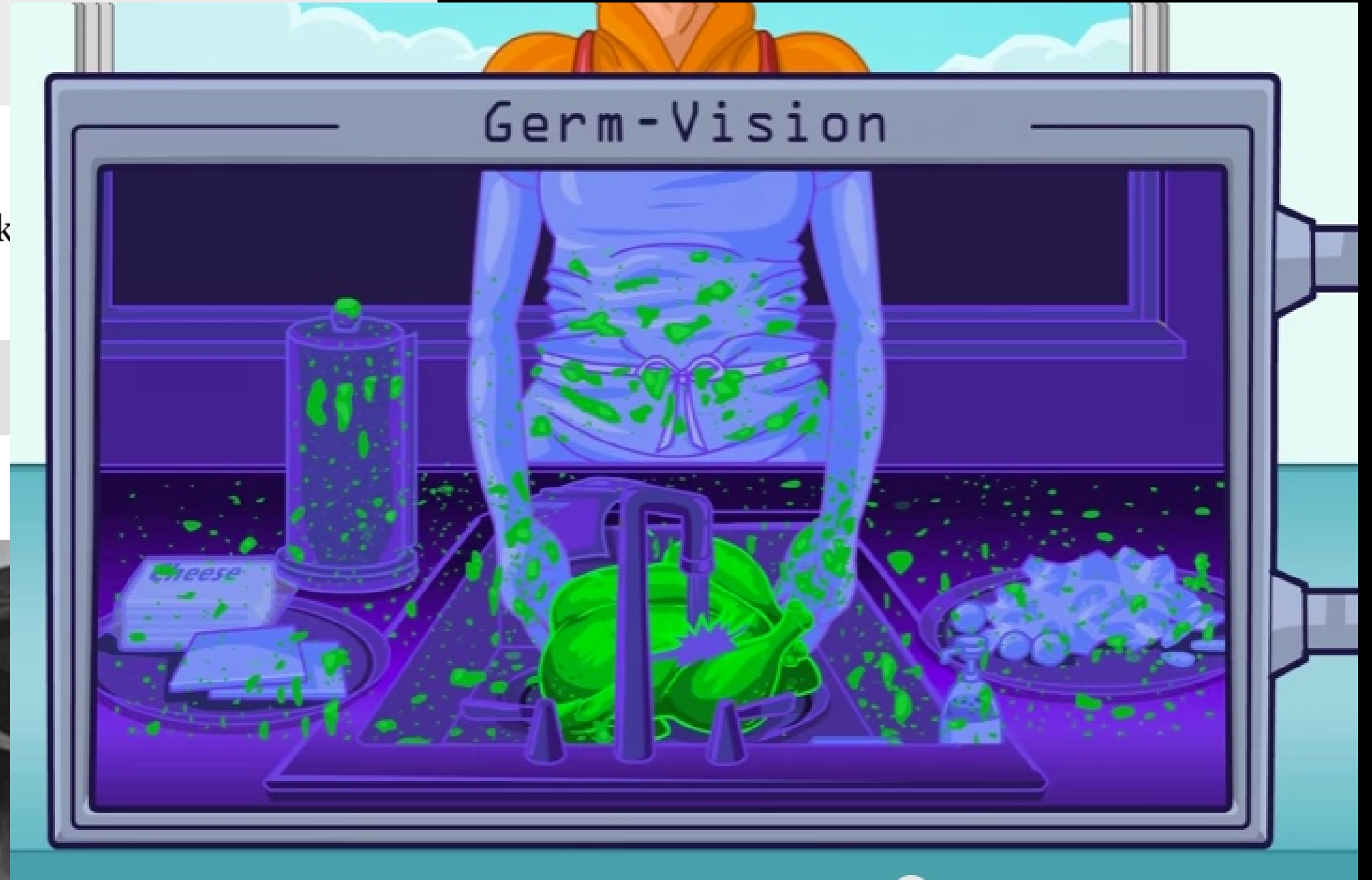
by MARIA GODOY

August 23, 2013 8:48 AM ET



Listen to the Story

Morning Edition



Produced by the Learning Games Lab at New Mexico State University in conjunction with Jennifer Quinlan and Drexel University, as part of USDA grant 2009-51110-05853.



Version 1.6

# Ninja Kitchen



New Game

Continue

Music

Sound FX



United States  
Department of  
Agriculture

National Institute  
of Food and  
Agriculture

Produced by the Learning Games Lab at NMSU in collaboration with Carol Byrd-Bredbenner and Rutgers University. This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under Agreement No. 2007-51110-03813.



\$0

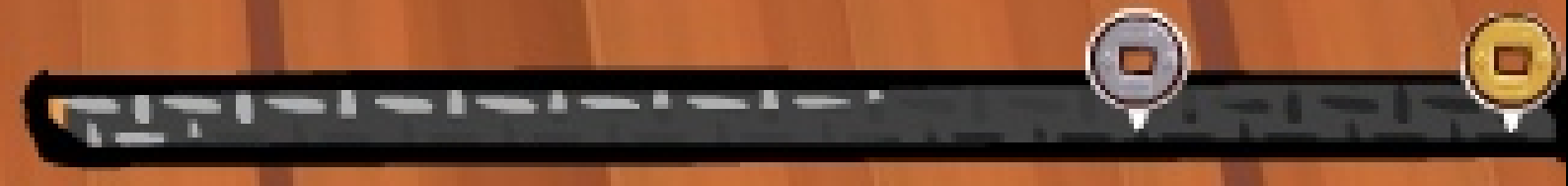
乱道



First, click on the sink to wash your hands.



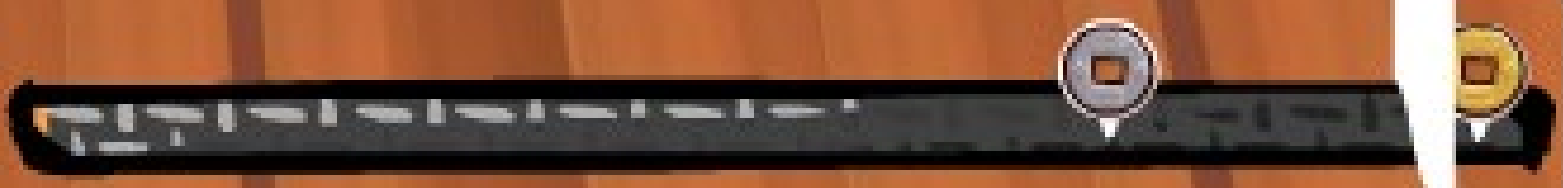
Level 1



\$2000



Level 3





Open

\$2004



Level 9



Collaboration

*helps us*

*support research.*



- Using the Microscope
- Gram Staining
- Bacteria Sampling
- Testing for Corn Mold Mycotoxins
- Understanding Water Activity
- Testing/Adjusting pH
- The pH Scale & Meter Calibration
- Controlling Water Activity

These Virtual Labs help students learn basic laboratory techniques and practice methods used by lab technicians and researchers in a variety of careers, using specific food science lab processes.

It is easy for consumers to take safe food for granted: as most people don't understand the rigorous testing, research and assessment food and food processing requires. Healthy, safe food is of extreme importance and vital to human survival. Expert lab technicians help make sure that the food we eat and feed to our animals will not harm us or our livestock.



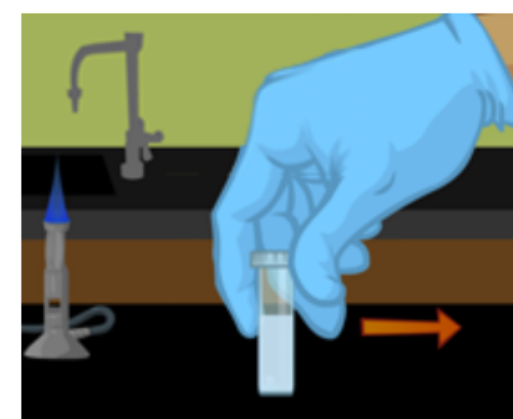
**Testing for Corn Mold**

The process of testing corn for the presence of aflatoxin.



**Bacteria Sampling**

Testing milk samples for bacterial contamination with various disposable lab equipment.



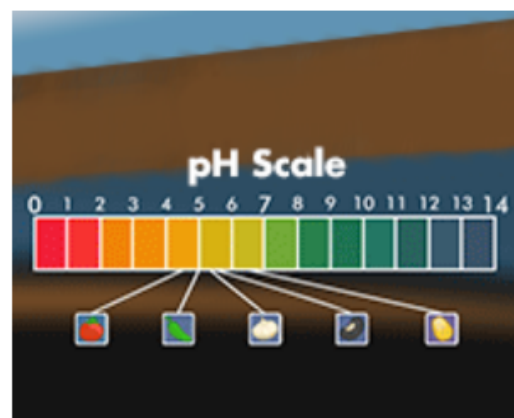
**Gram Staining**

Using gram staining to test the yogurt sample for bacterial contamination.



**Using the Microscope**

Learning to use the microscope to view what type of bacteria is contaminating the yogurt sample.



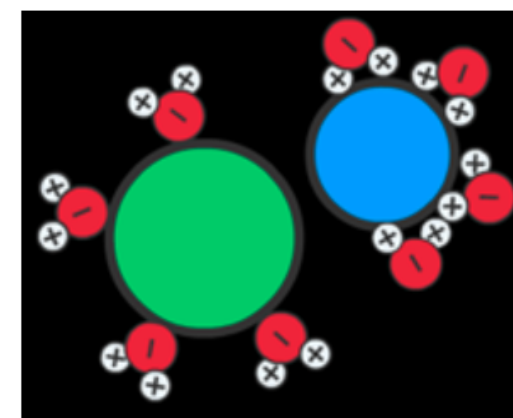
**The pH Scale & Meter Calibration**

Learn about the pH scale and calibrating a pH meter.



**Testing and Adjusting pH**

The process of preventing *Clostridium botulinum* growth in salsa.



**Understanding Water Activity**

Explore how water acts inside food and how this affects spoilage.



**Controlling Water Activity in Food**

Test the water activity of corn dried using traditional methods.

virtuallabs.nmsu.edu

Created by the Learning Games Lab at NMSU in collaboration with South Dakota State University and North Dakota State University. This work was supported by USDA CSREES and USDA National Institute of Food and Agriculture under Higher Education Challenge Grant projects 2008-38411-19055 and 2011-38411-30625.

This work was supported by USDA CSREES and USDA National Institute of Food and Agriculture under two Higher Education Challenge Grant projects: 2008-38411-19055 and 2011-38411-30625. © 2008-2014 NMSU Board of Regents. Collaborating universities South Dakota State University, North Dakota State University and New Mexico State University are all equal opportunity/affirmative action employers and educators.

For web technical issues such as typo, broken link, or other technical problem with the site, please contact NMSU, Media Productions





# Irrigation Training Modules

## Water Treatment Systems for Pre-Harvest Use

Explore four treatment methods for cleaning irrigation water for fruits and vegetables and practice testing water with the Test Strip Lab. Learn the ins and outs of each method so you can choose and implement treatment appropriate to your situation while continuing to validate, verify and monitor your process.

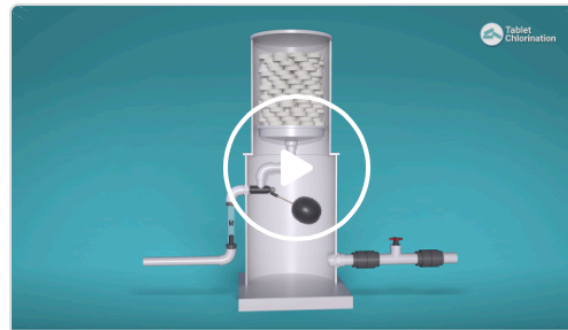
Animated Videos ↓

Test Strip Lab ↓

### Animated Videos



Overview: Water Treatment System



Tablet Chlorinator: Water Treatment System

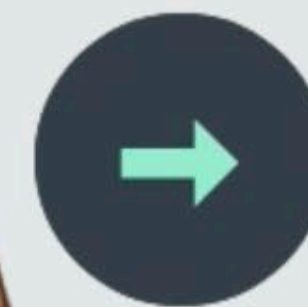
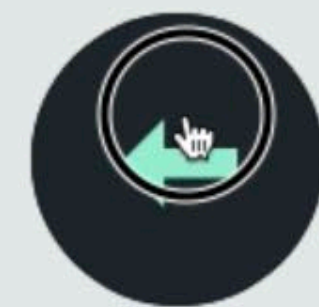
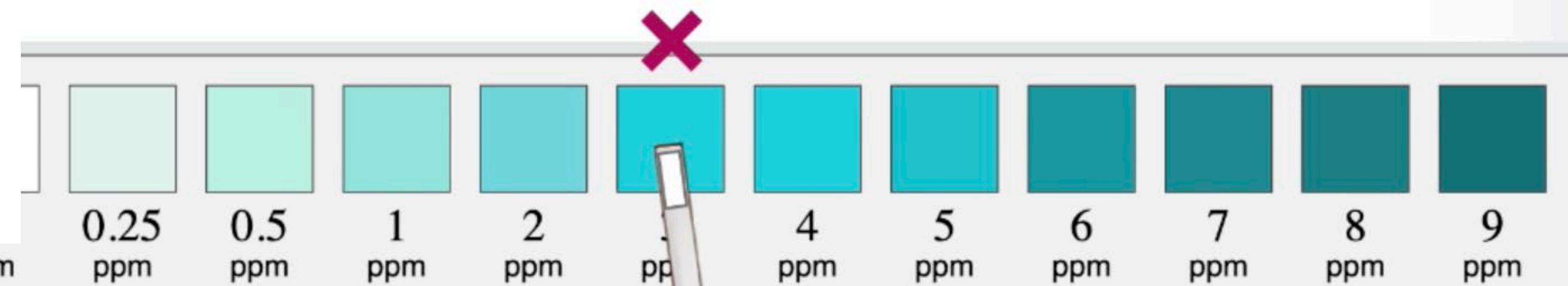
### Interactive: Test Strip Lab



Learn how to accurately test chlorine levels in irrigation water and how to avoid common pitfalls of chlorine testing systems.

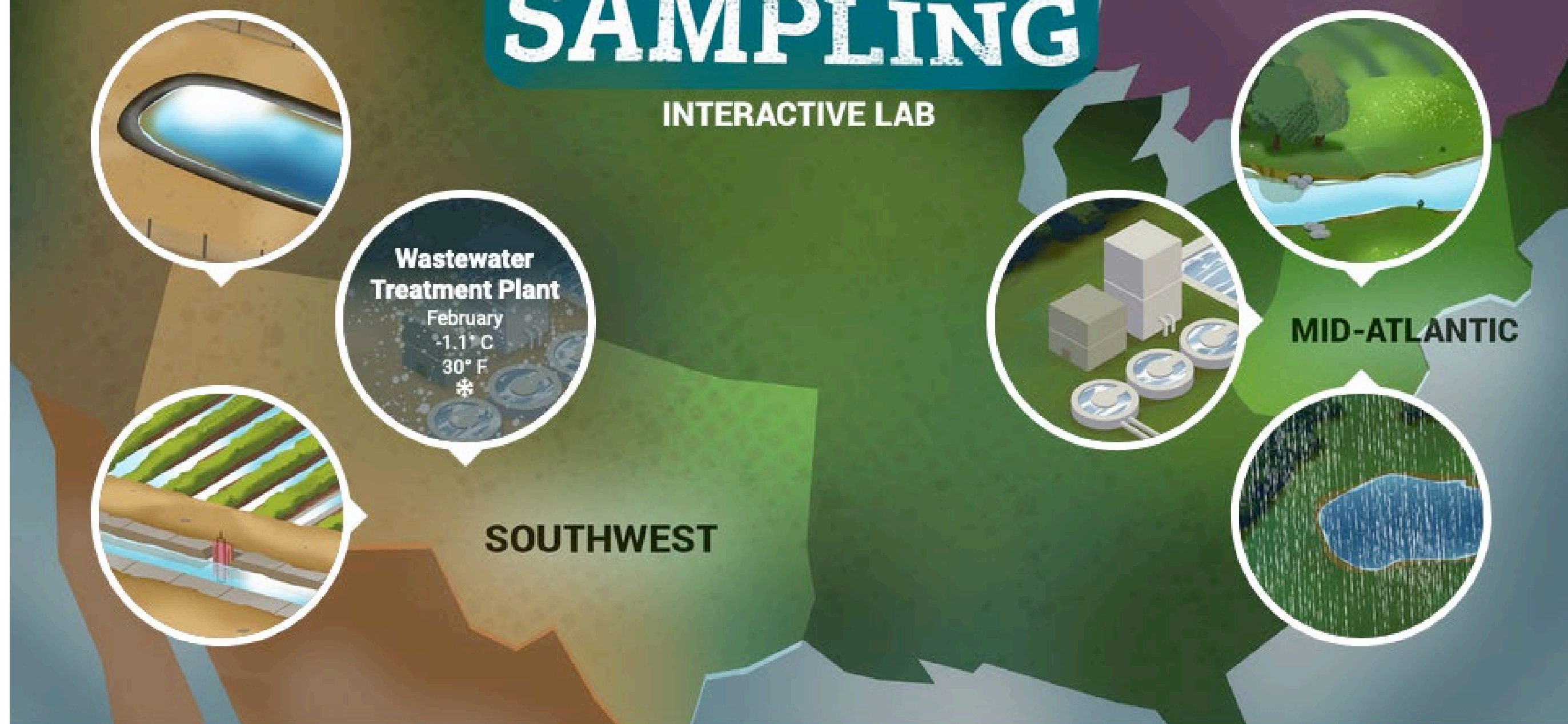
## Match the test strip to the color chart

far lighter than this color chip. There must be far less than 3 ppm. Try moving it left a few steps.



# WATER SAMPLING

INTERACTIVE LAB



[conservewaterforfood.org](http://conservewaterforfood.org)

© 2019 NMSU Board of Regents. All rights reserved. NMSU is an equal opportunity/affirmative action employer and educator. CONSERVE was awarded to the University of Maryland School of Public Health and is supported by the United States Department of Agriculture-National Institute of Food and Agriculture, Grant number 20166800725064.



United States Department of Agriculture National Institute of Food and Agriculture



SCHOOL OF PUBLIC HEALTH



United States Department of Agriculture National Institute of Food and Agriculture

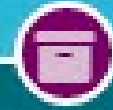
Created by the Learning Games Lab at NMSU in collaboration with the CONSERVE team. CONSERVE was awarded to the University of Maryland School of Public Health and is supported by the USDA National Institute of Food and Agriculture Grant Number 2016-6800725064





Stream

MID-ATLANTIC 84°F



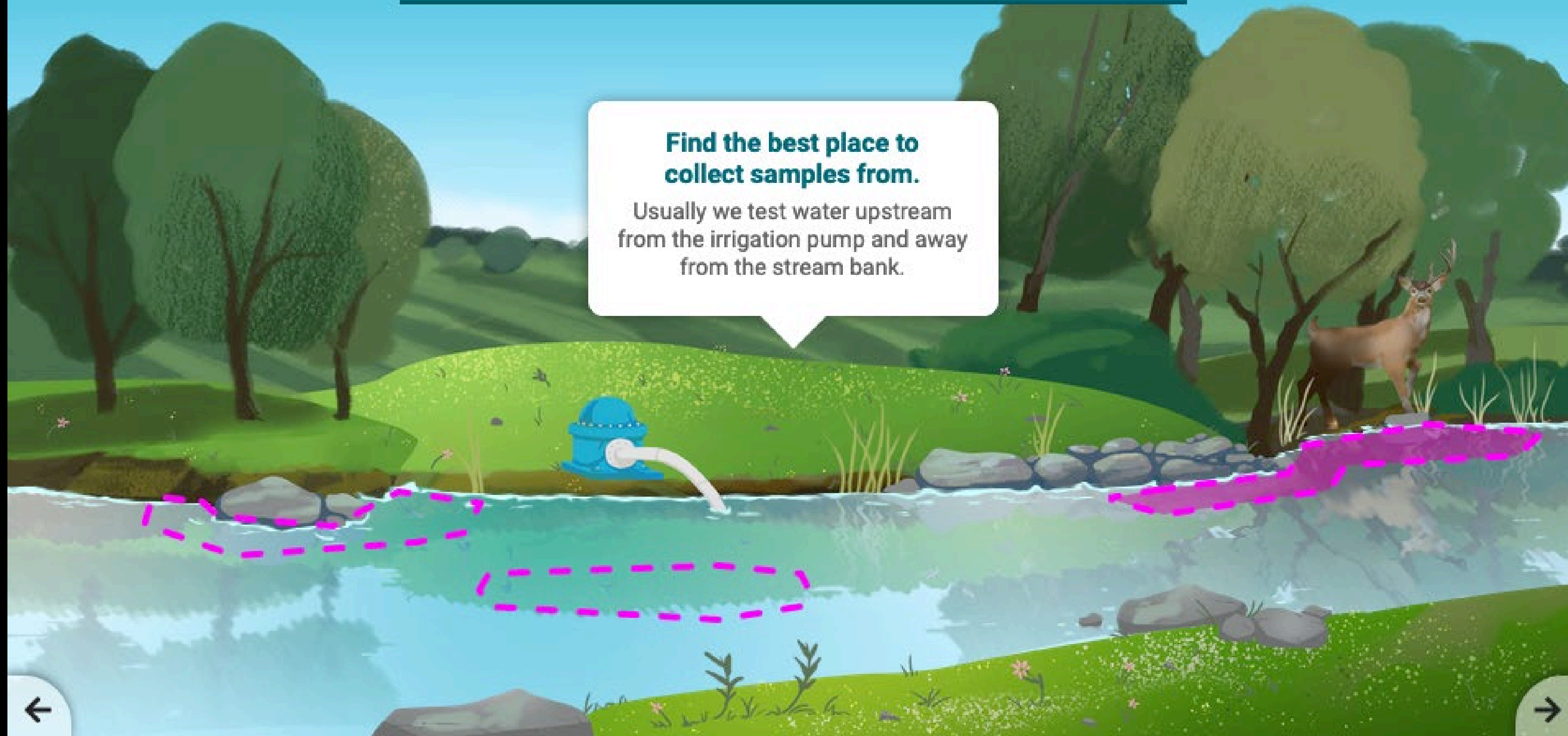
°F



## 1.0 – Prepare the location for sampling.

### Find the best place to collect samples from.

Usually we test water upstream from the irrigation pump and away from the stream bank.





1

2

3

4

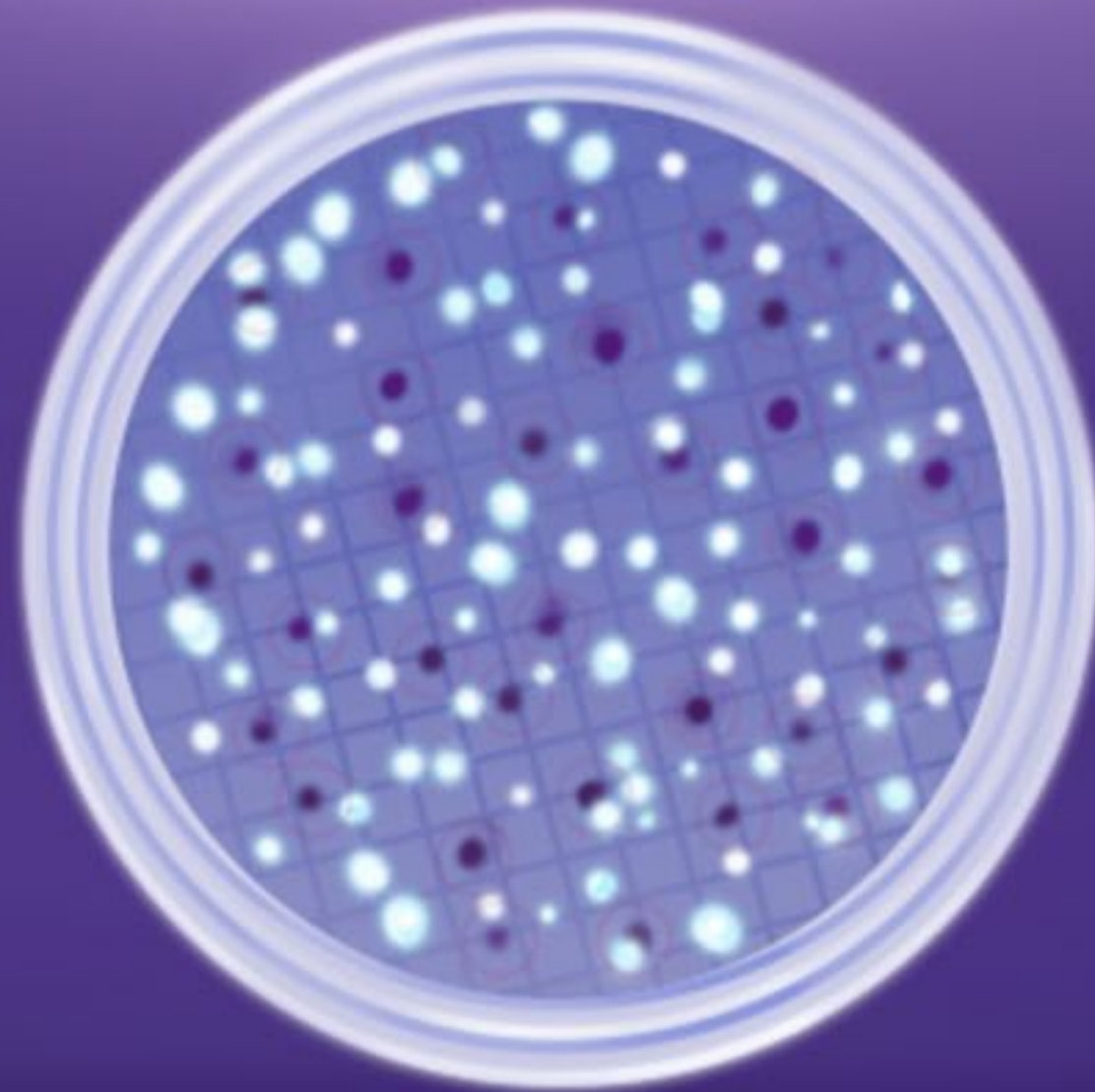
5

6

### 3 Count Fluorescent Colonies

**Now, mark the fluorescent colonies with the sharpie.**

Fluorescent colonies are coliform bacteria other than *E. coli*. These must be counted and added to the number of total coliforms



● Blue

**35**



GLOSSARY:

Coliforms







## DAY 1 Preparation Overview



1 Make dilutions



2 Place a filter into the funnel



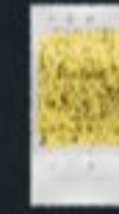
3 Add dilutions to the funnels



4 Filter dilutions



5 Place filters on the agar plates



6 Incubate the agar plates

Today, we're taking the first steps for analyzing samples from a **pond**, creating dilutions and filtering the water.

CONTINUE





**Method 1604**  
*Total Coliforms and E. Coli.*



# Produce Safety Matters

**The Bigger Picture**

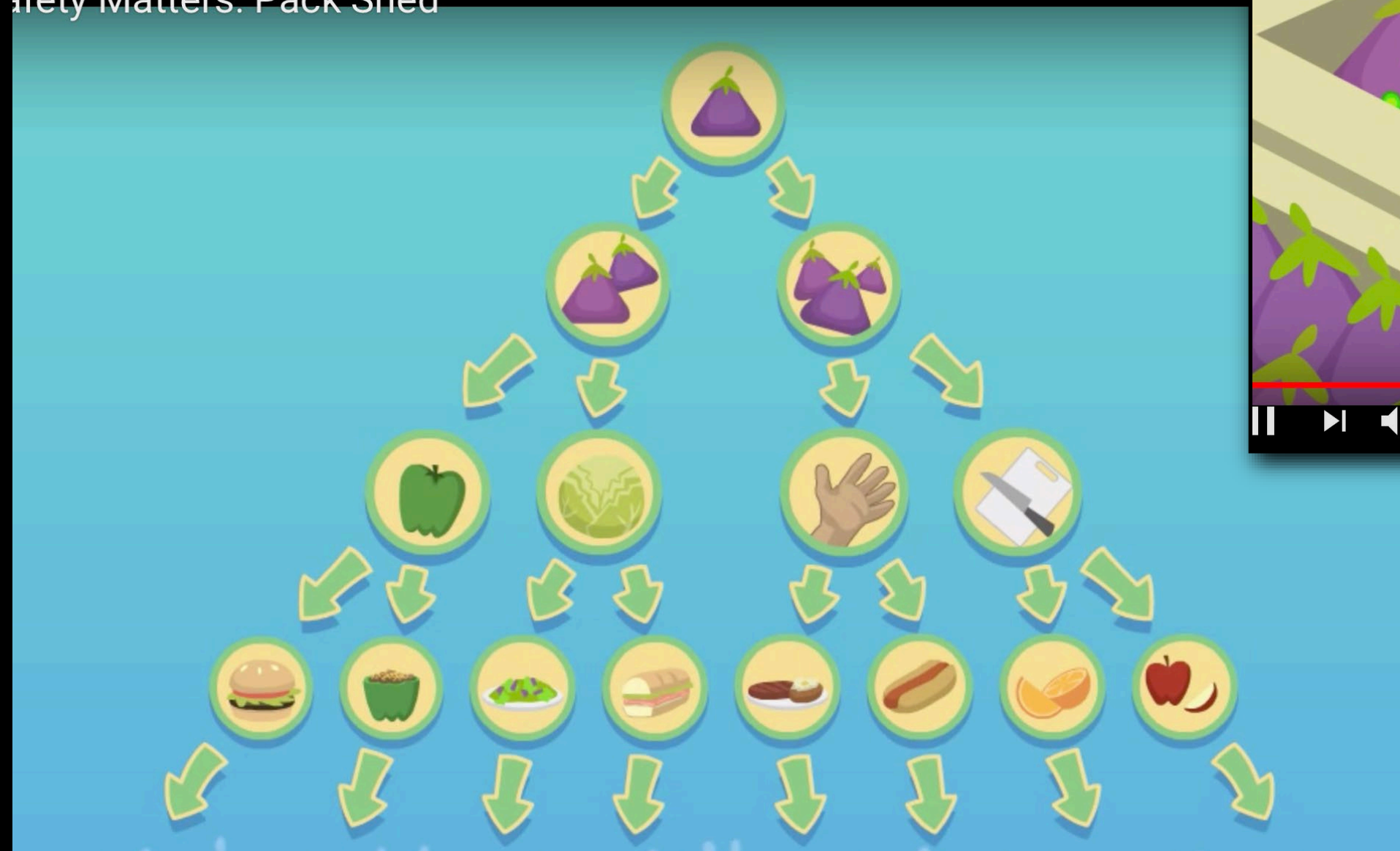
**The Field**

**The Dump Tank**

Pause (k) **Learn More About Produce Safety**



Produce Safety Matters: Pack Shed



Created by the Learning Games Lab at NMSU as part of a collaborative project supported by North Carolina Cooperative Extension, The Ohio State University Extension, and a 2012 Florida Specialty Crop Block Grant as part of the Multi-State Project "A systems approach to improving the safety of cantaloupe."

Collaboration

*helps us*

*reach new audiences.*





Even as simple as washing my hands.

### Hand Washing Songs: Because I Care Lullaby

90,384,148 views • Sep 8, 2011

148K 68K SHARE SAVE ...



nmsuaces  
262K subscribers

SUBSCRIBE

This nap time lullaby honors day care workers for the many small but important ways they demonstrate care and concern for children.

Produced by the Learning Games Lab at NMSU based on work funded by the National Integrated Food Safety Initiative (NIFI), United States Department of Agriculture (USDA), under Agreement No. 2008-51110-04365; Michigan State University, New Mexico State University, and Kansas State University cooperating.





• Handwashing Home

Curriculum Guides

• Day 1 - How Germs Spread

• Day 2 - Invisible Germs

• Day 3 - How to Wash

• Day 4 - When to Wash

• Day 5 - Catch a Sneeze

• Songs for Every Day

Teacher Resources

• Curriculum Resources

• Curriculum Video Demos

• Songs

# Because I Care, I Wash My Hands

Hand washing and good hygiene show respect and consideration for co-workers, your family and the community. Research shows that child care centers can be significant sources for the spread of illness within a community, even indirectly impacting families who do not have children.

Ideally suited to child care centers, this fun, hands-on curriculum, packed full of songs, activities and experiments, helps even very young children understand why and how hand washing helps keep friends and family healthy.

Building on scientific research conducted at Michigan State University, this five-day curriculum is available for free download of the daily activity lists, child materials, and songs. The curriculum materials, developed by Media Productions at New Mexico State University, also include teacher training videos and free downloadable songs for the classroom.



Even as simple as washing my hands.

## Hand Washing Songs: Because I Care Lullaby

90,384,148 views • Sep 8, 2011

148K 68K SHARE SAVE



nmsuaces  
262K subscribers

SUBSCRIBE

This nap time lullaby honors day care workers for the many small but important ways they demonstrate care and concern for children.

Produced by the Learning Games Lab at NMSU based on work funded by the National Integrated Food Safety Initiative (NIFSI), United States Department of Agriculture (USDA), under Agreement No. 2008-51110-04365; Michigan State University, New Mexico State University, and Kansas State University cooperating.





- Handwashing Home
- Curriculum Guides**
- Day 1 - How Germs Spread
  - Day 2 - Invisible Germs
  - Day 3 - How to Wash
  - Day 4 - When to Wash
  - Day 5 - Catch a Sneeze
  - Songs for Every Day
- Teacher Resources**
- Curriculum Resources
  - Curriculum Video Demos
  - Songs

## Because I Care, I Wash My Hands

Hand washing and good hygiene show respect and consideration for co-workers, your family and the community. Research shows that child care centers can be significant sources for the spread of illness within a community, even indirectly impacting families who do not have children.

Ideally suited to child care centers, this fun, hands-on curriculum, packed full of songs, activities and experiments, helps even very young children understand why and how hand washing helps keep friends and family healthy.

Building on scientific research conducted at Michigan State University, this five-day curriculum is available for free download of the daily activity lists, child materials, and songs. The curriculum materials, developed by Media Productions at New Mexico State University, also include teacher training videos and free downloadable songs for the classroom.



Even as simple as washing my hands.



### Hand Washing Songs: Because I Care Lullaby

90,384,148 views • Sep 8, 2011

148K 68K SHARE SAVE



nmsuaces  
262K subscribers

SUBSCRIBE

This nap time lullaby honors day care workers for the many small but important ways they demonstrate care and concern for children.

Produced by the Learning Games Lab at NMSU based on work funded by the National Integrated Food Safety Initiative (NIFSI), United States Department of Agriculture (USDA), under Agreement No. 2008-51110-04365; Michigan State University, New Mexico State University, and Kansas State University cooperating.



# OutbreakSquad.org





Infected 🦠

Sick 🤒

Very Sick 🏥

Dead ☠️

Low Risk 🔑



6

High Risk 🗡️



2



GROCE

??/??



# SQUAD Attacks!



## Event

No new cooldowns on abilities this round.

Points

10

GO!



Infected 🦠

Sick 🤒

Very Sick 🏥

Dead 💀

Low Risk 🔑



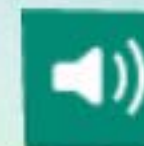
6

Press Esc to exit full screen

High Risk 🗑️



2



GROCERY

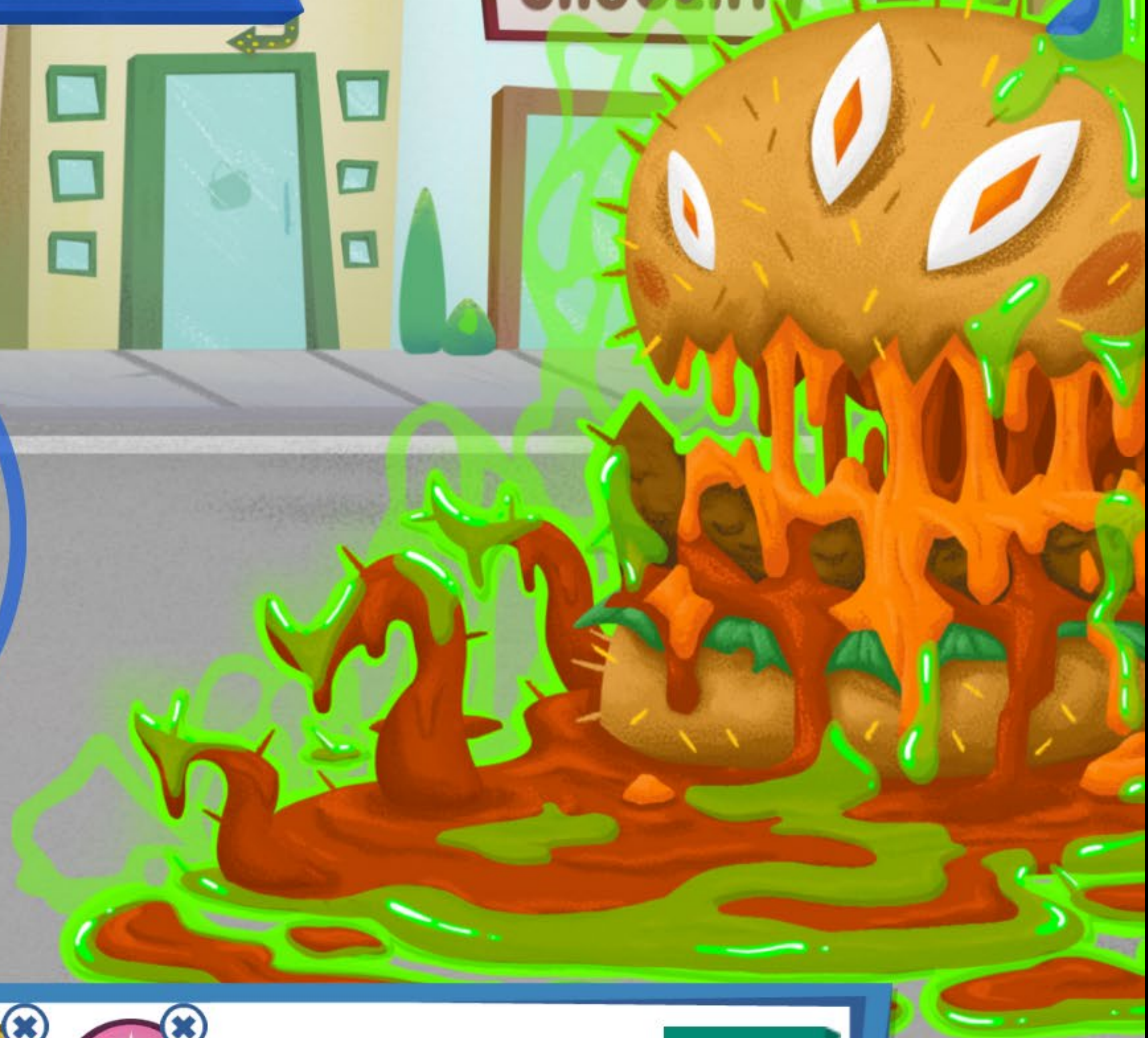
40/40



Critical Limit

Deal 2 damage.

Cost:1



Points

1



GO!



Infected

Sick

Very Sick

Dead

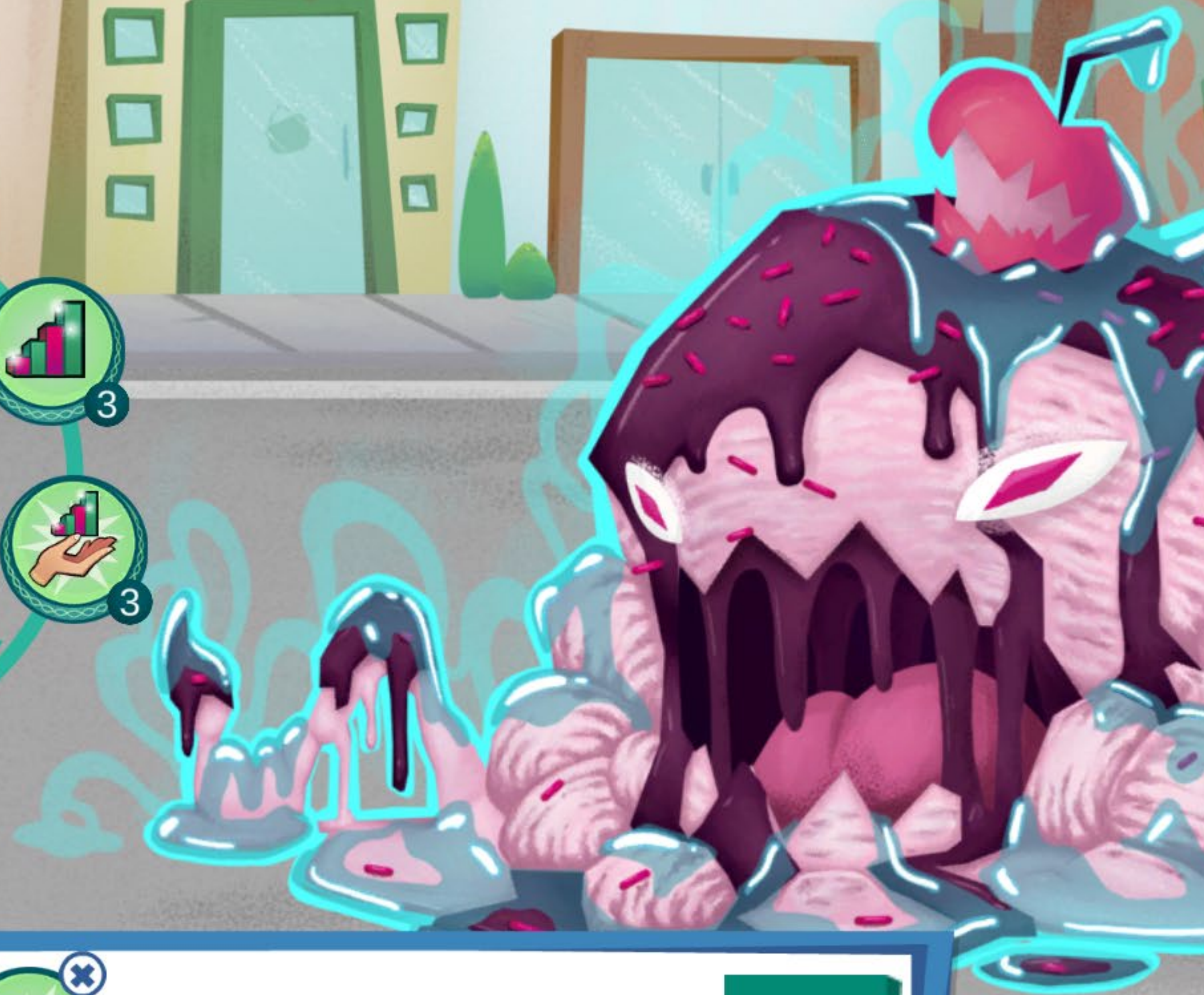
Low Risk

High Risk



GROCERY

??/??







Points  
4



GO!



	Infected 🦠	Sick 🤒	Very Sick 🛒	Dead ☠️
3 Low Risk 🔑	6			
3 High Risk 🔑	2			

GROCERY
36/40
i



Educator uses Specification Education



Infected 🦠

Sick 🤒

Very Sick 🏥

Dead ☠️

Low Risk 🔑

3 High Risk 🛡️



GROCERY

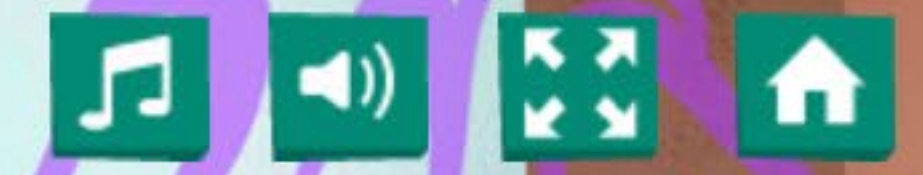
??/?? ⓘ



Educator uses Prerequisite Program







GROCE 34/50 i

??/?? i

Event: Public Outcry  
They need more help out there! Treatment effects doubled this round.

CONTINUE





Infected

Sick

Very Sick

Dead

3 Low Risk

High Risk

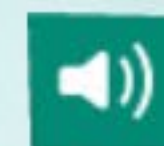
3



5



2



GROCERY

# Outbreak Defeated!

## Level Summary

	Low Risk	High Risk	Total
Infected	0	0	0
Sick	0	0	0
Very Sick	3	0	3
Deaths	5	2	7

CONTINUE

## REAL OUTBREAK!



In 1993, an outbreak occurred where 732 became ill from consuming contaminated beef patties in the Northwest United States. The majority of the victims were under the age of 10.

Energy used: Critical Limit





Collaboration

*helps us*

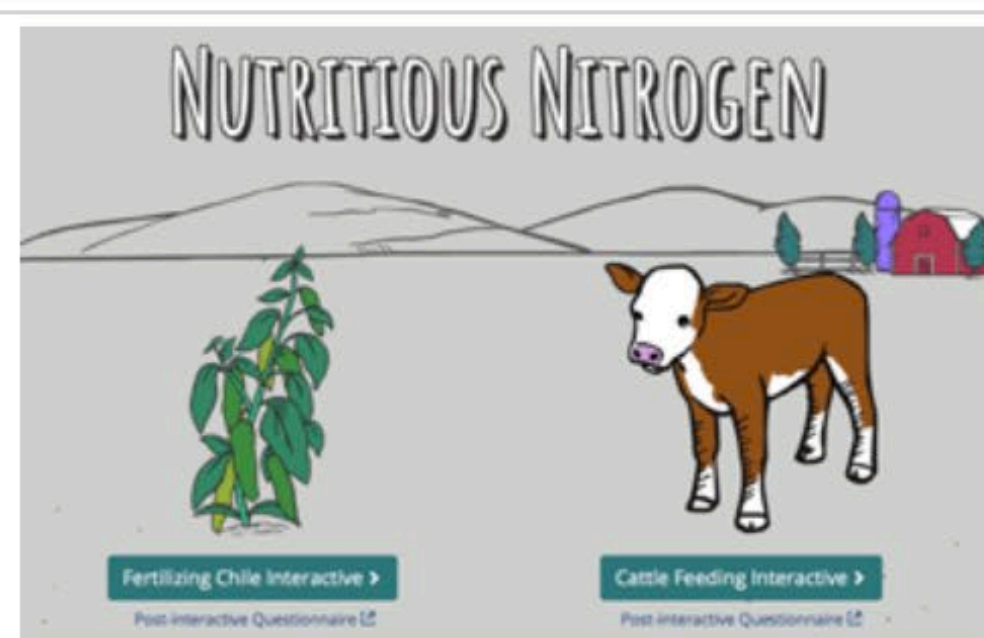
*innovate with technology.*





# Science of Agriculture

Short animations, interactives and videos teach math & science concepts crucial to the study of agriculture.



## Nutritious Nitrogen (interactive)

Plants and animals both need nitrogen to grow and thrive. Learn how to add the right amount of nitrogen at the right time to support production without polluting the environment.

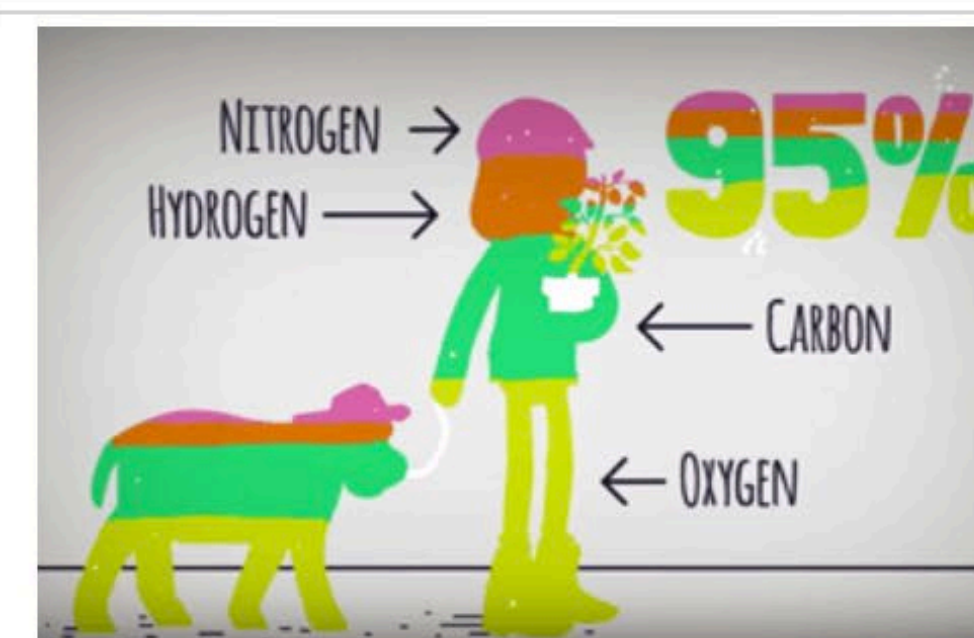
[View Interactive >>](#)



## Nitrogen & Agriculture (interactive)

This interactive explores the importance of nitrogen for plant, animal and soil health. Build amino acid and fertilizer molecules and calculate molecular weight in relation to nitrogen content.

[View Interactive >>](#)

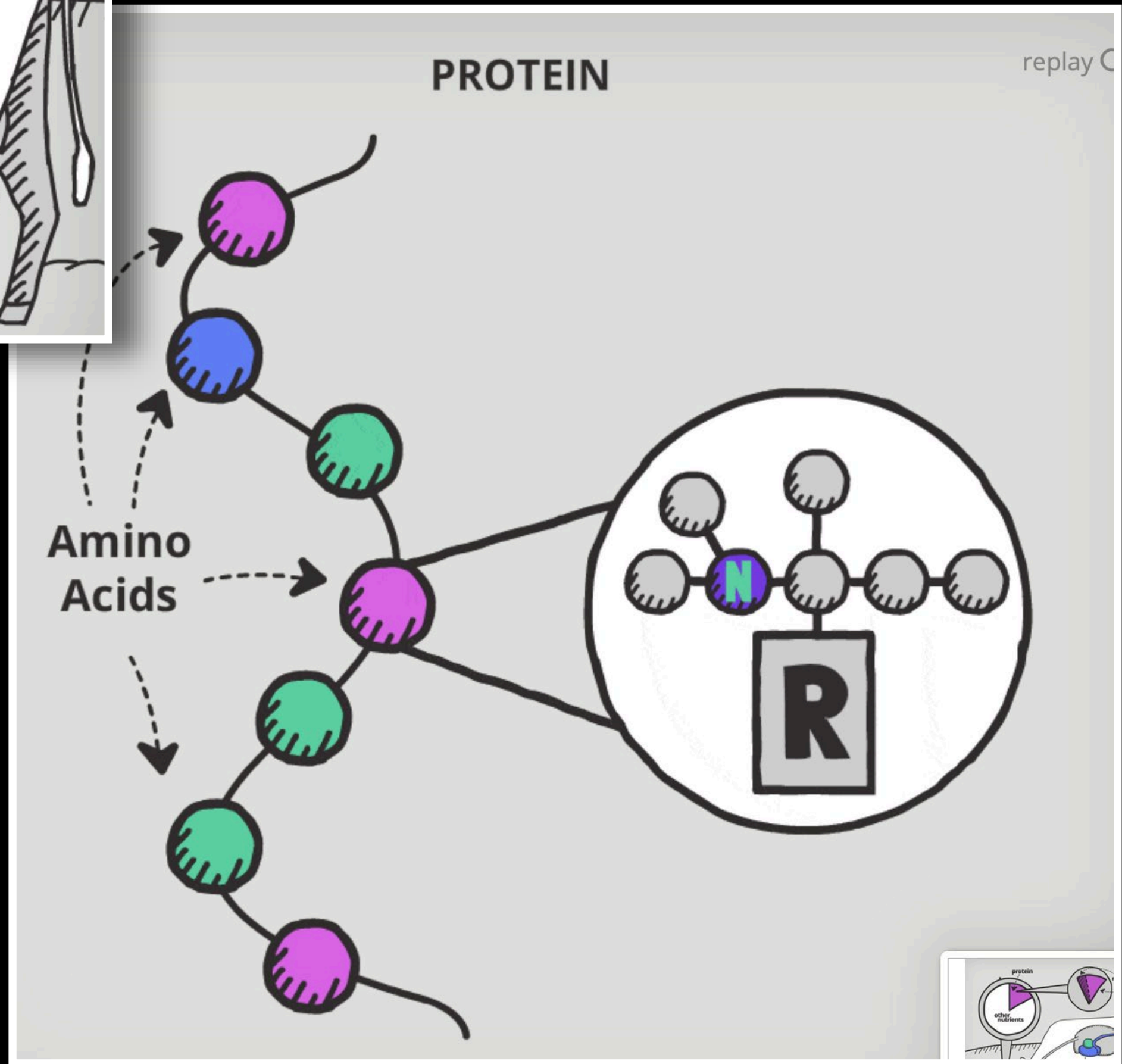
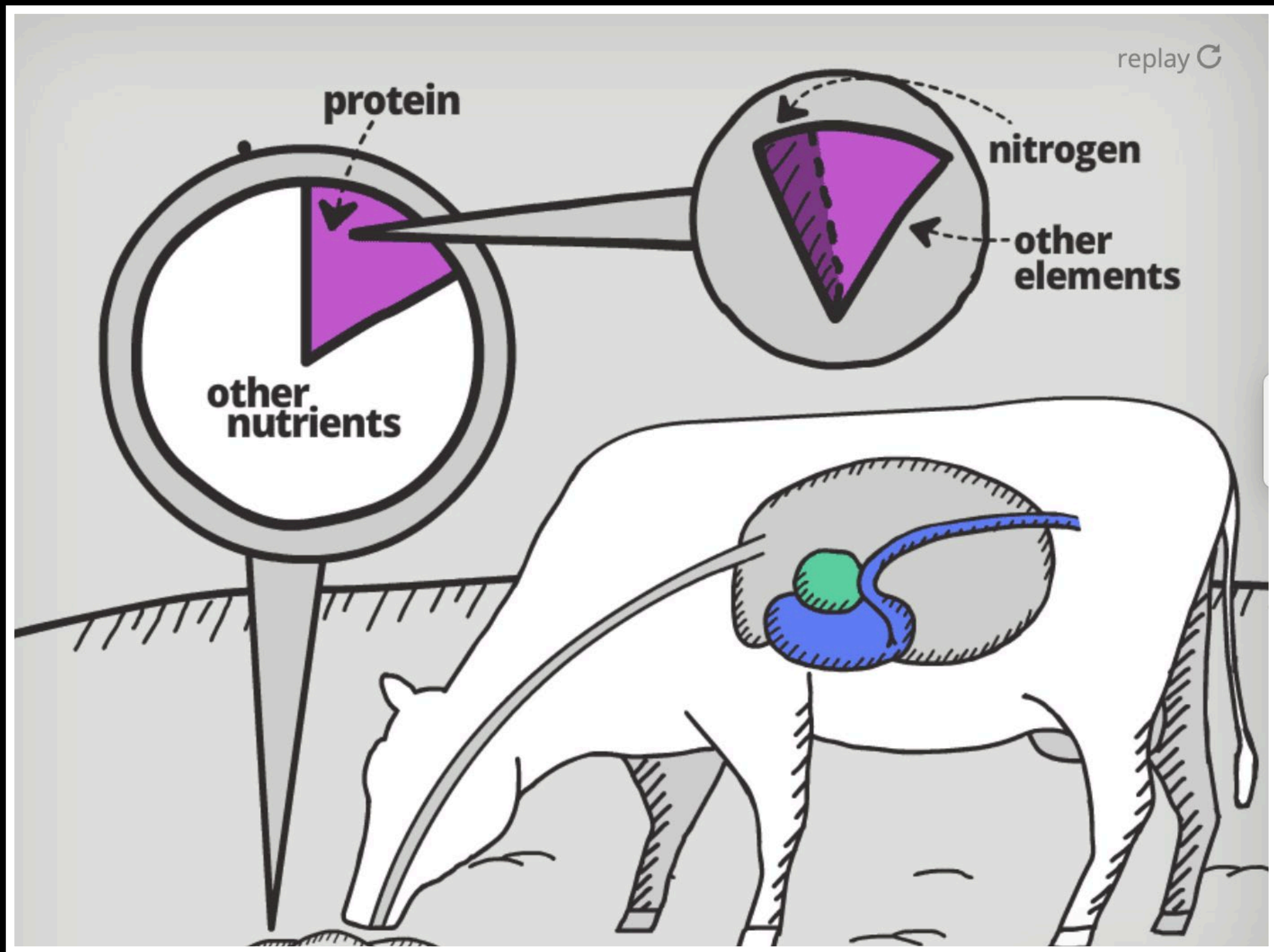


## Everything is Chemical (animation)

Plants and animals are mostly composed of carbon, hydrogen, oxygen, and nitrogen. These chemicals – and how they are put together – underlie everything around us.

[View Animation >>](#)





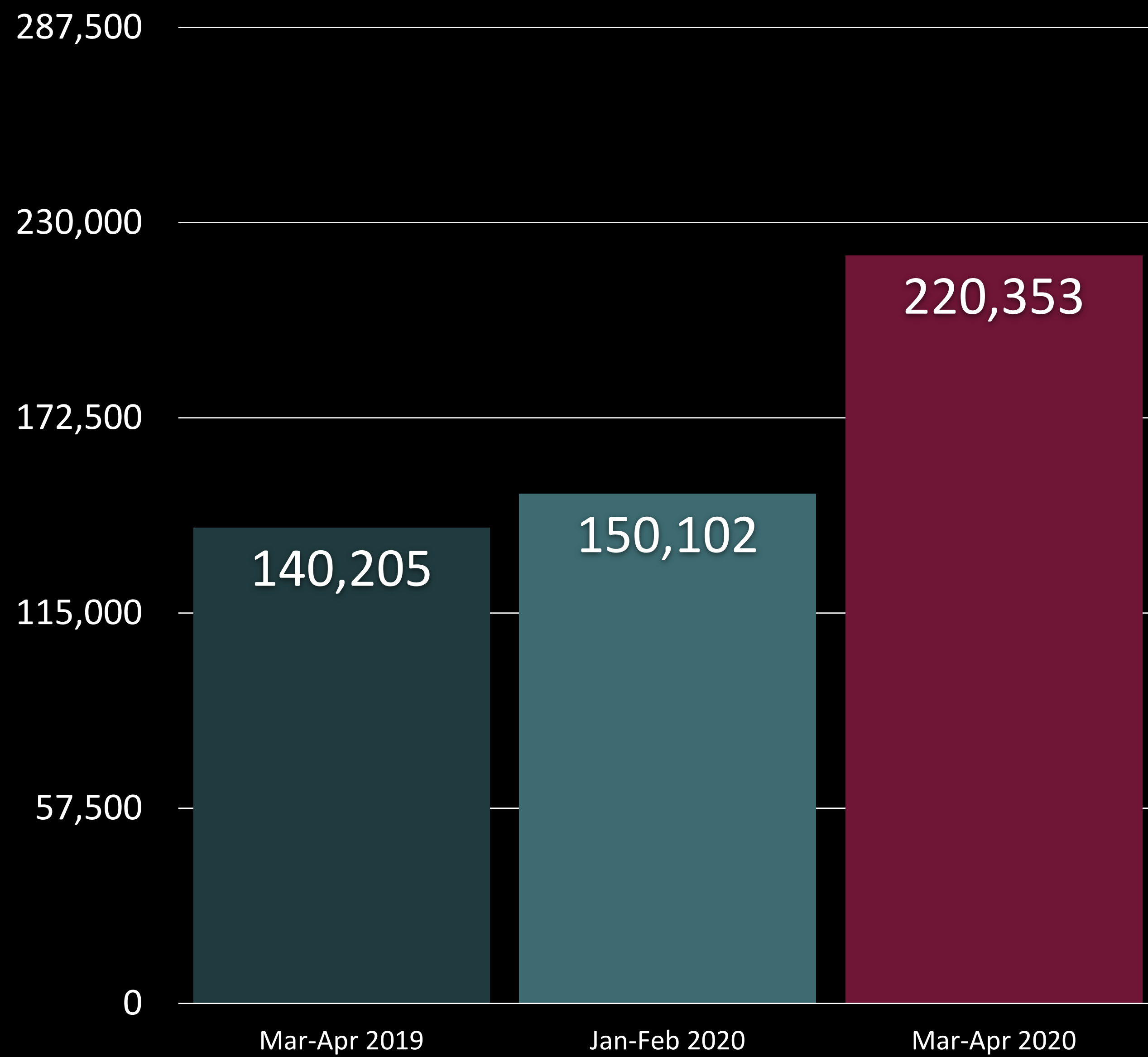


# Publication Downloads

Quarantine period (March, April)  
compared to:

Same time, last year: +80,148

Previous 2 months: +70,251



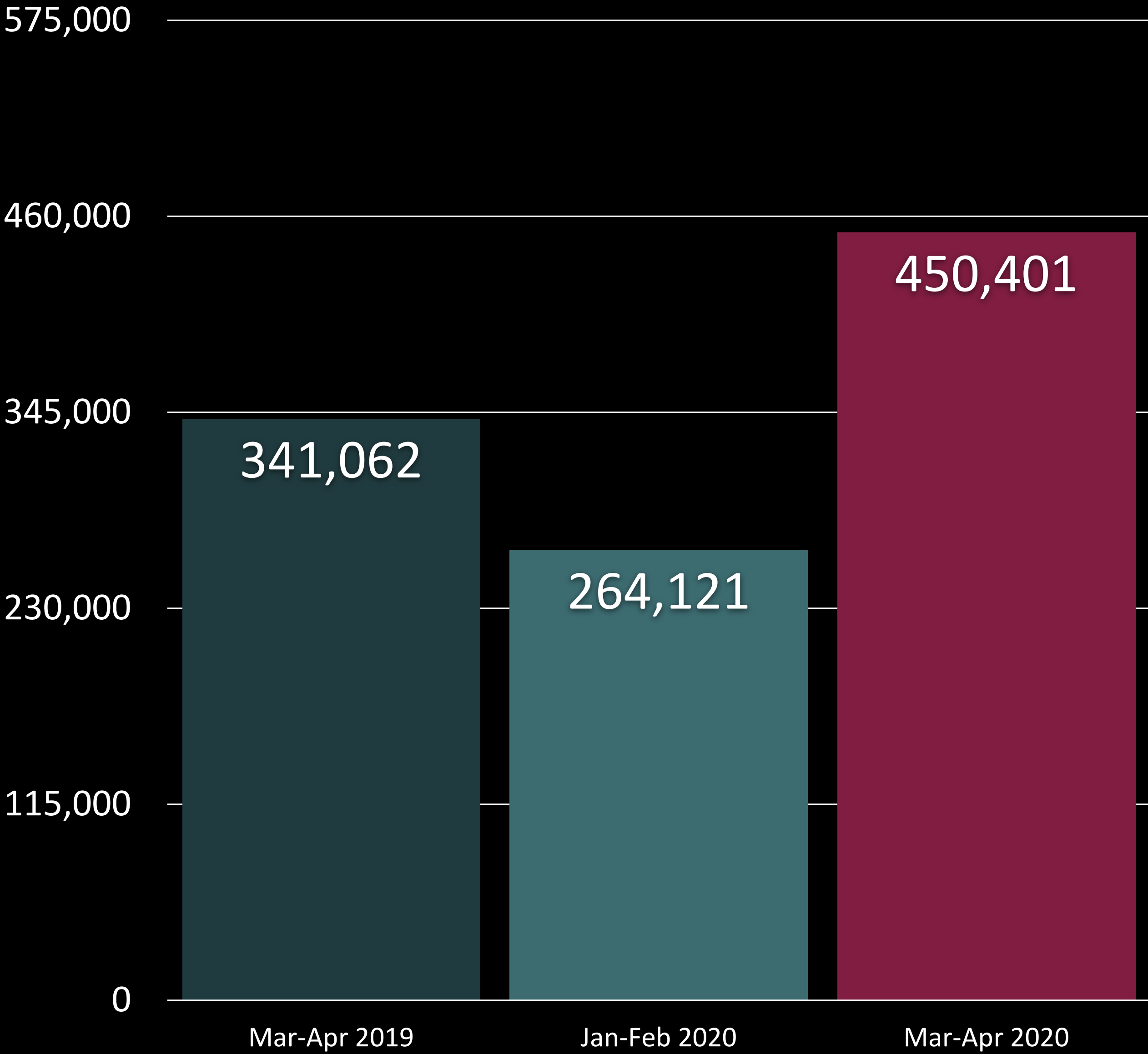


# Videos on YouTube

Quarantine period (March, April)  
compared to:

Same time, last year: +109,339

Previous 2 months: +186,280



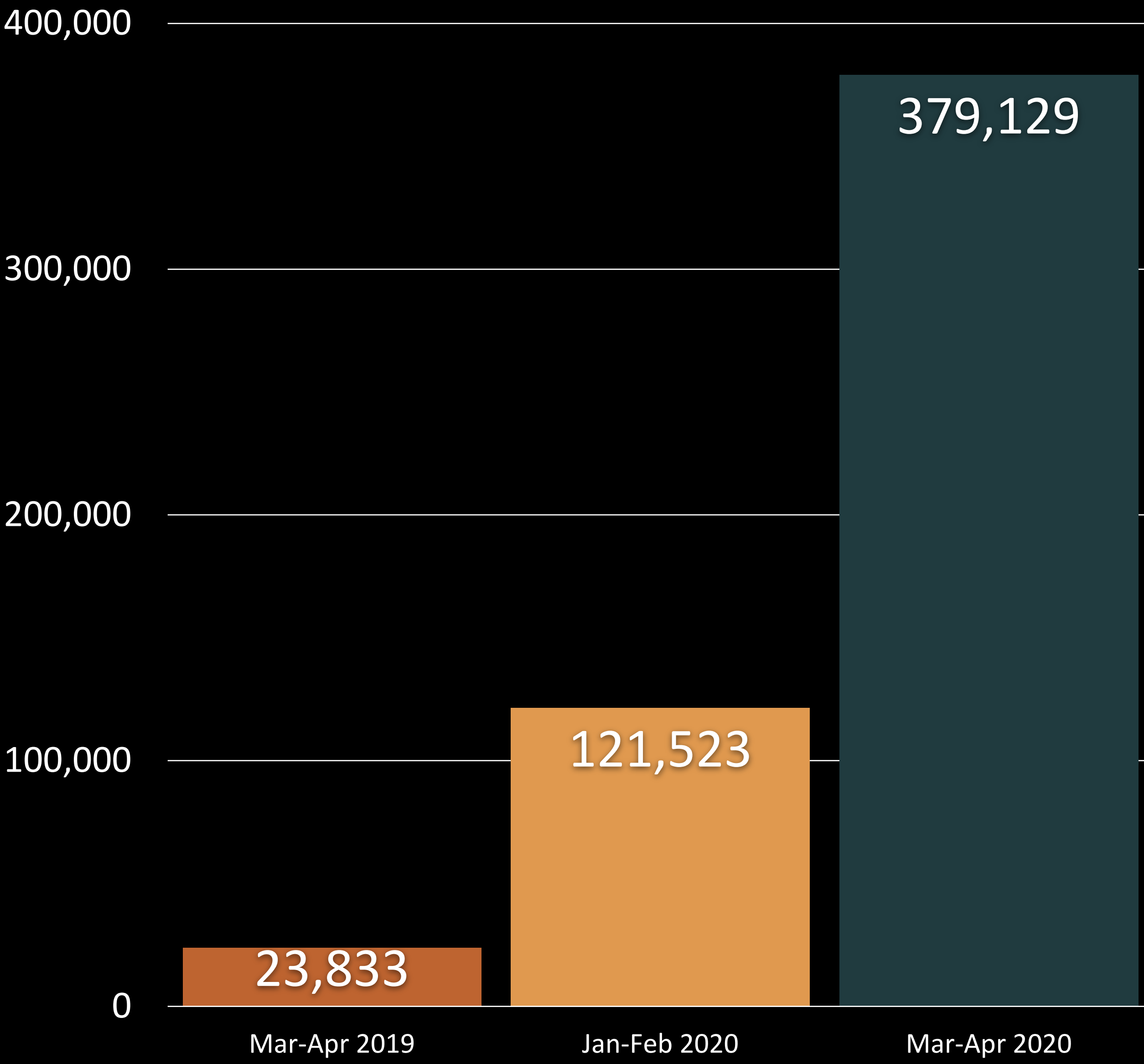


# App Downloads

Quarantine period (March, April)  
compared to:

Same time, last year: +355,296

Previous 2 months: +257,606





# Collaborating

for

# Change

## Educational Food Safety Materials for Consumers

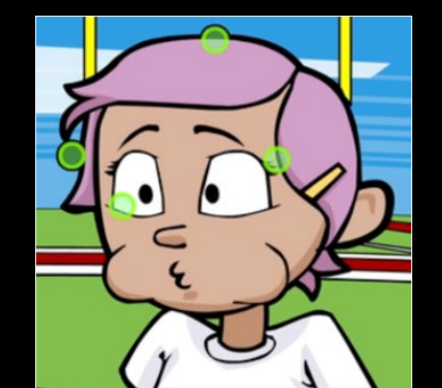
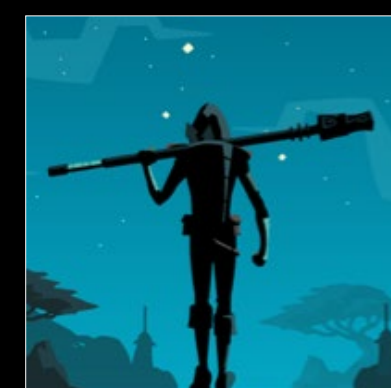
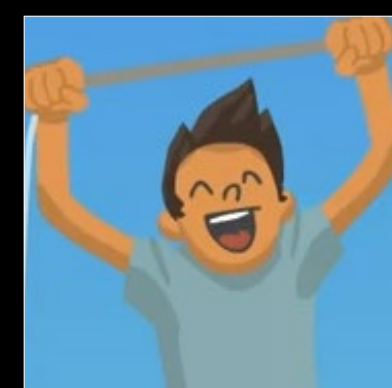
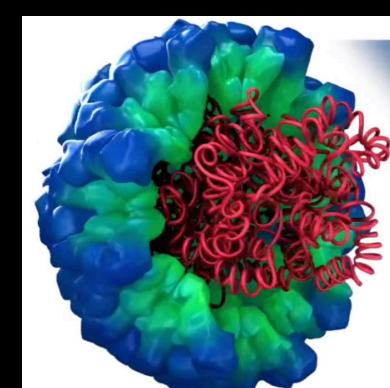
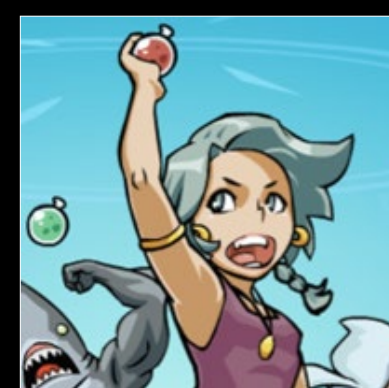
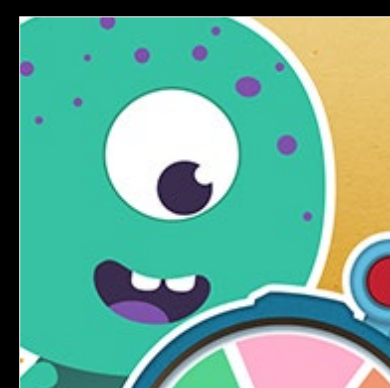


USDA's  
97th  
Annual

United States Department of Agriculture  
Agricultural Outlook Forum

*Building on Innovation:  
A Pathway to Resilience*

February 18-19, 2021 • <https://www.usda.gov/oce/ag-outlook-forum>



Barbara Chamberlin, PhD • [bchamber@nmsu.edu](mailto:bchamber@nmsu.edu) •  @bchamber

NMSU Innovative Media, Research & Extension • [LearningGamesLab.org](http://LearningGamesLab.org)