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# Mechanisms of Human Health and Disease 2021

A summer program for high school students who excel in science



Nationwide Children's Hospital  
Attn: Community Education  
700 Children's Drive  
Columbus, Ohio 43205-2696



# Mechanisms of Human Health and Disease

**Monday and Thursday evenings: June 14 – July 26, 2021 from 5:30 – 9 p.m.**  
Postmarked or completed online applications **due February 15, 2021 at 8 a.m.**

In our 16<sup>th</sup> year, Mechanisms is a fast-paced, in-depth program designed to challenge the serious science student who is interested in medicine or medical research. Students in the Mechanisms program investigate diseases with lectures from research experts. At the final class, students present their work to family and teachers. This course is lecture and activity based.

## Purpose

Introduce motivated and high-achieving high school science students to college level curriculum for medical and biomedical careers.

## Objectives

During the program, students will:

- Discuss college-level content in cellular and molecular biology, genetic engineering, physical and medicinal chemistry, immunology, virology, biomedical information and pathophysiology.
- Gain a competitive edge by developing life skills including networking, resume, writing, school selection, job applications, learning strategies and business communications.
- Complete an independent project in molecular pathophysiology.
- Complete an apprenticeship group project for a selected career path.
- Explore career options in medicine and biomedical research.

## NEW! Info Sessions

Join us for virtual information sessions to be held on November 18 and January 26 from 6-7 p.m. Sign up at [NationwideChildrens.org/Edu](https://www.nationwidechildrens.org/Edu).

## Audience

Class is designed for incoming seniors currently enrolled in 11th grade. Other students who meet the prerequisites will be considered.

## Prerequisites

High school biology and chemistry. No exceptions will be made.

## Class Size

We will accept up to 30 qualified candidates into the summer 2021 class.

## Attendance and Commitment

- Students **must** attend and participate in all class and group project sessions.
- Students will be required to read two books, before class begins.
- Students prepare for final presentation by creating an outline, final paper and presentation.
- Optional hospital-based activities in clinical medicine and outside field trips will be offered to students based on availability. Past experiences have included Nationwide Children's Stimulation Lab, Columbus State Simulation Lab, OSU Clinical Skills Lab and OSU Cadaver Lab.

## Questions

Contact Marcie Rehmar at [Marcie.Rehmar@NationwideChildrens.org](mailto:Marcie.Rehmar@NationwideChildrens.org) or (614) 355-0662

## Location

**Nationwide Children's Hospital Education Center**

575 South 18th St. | Columbus, Ohio 43205.

Based on existing COVID-19 protocols, class may be held virtually.

## Cost

No application fee. \$120 per student upon acceptance.

Snacks and refreshments are provided.

## Confirmation

Students will be notified of their acceptance into the program no sooner than April 2, 2021.

## Previous Student Successes

Mechanisms participants have enjoyed continued academic success enrolling in prestigious institutions including *U.S. News and World Report* top 20 ranked schools.

## A Typical Class

The following is an example of a typical class period:

5 p.m.	Open Office Hours
5:30 p.m.	Speaker Panel
6:30 p.m.	Quiz
6:45 p.m.	College Level Course Information
7:15 p.m.	Pathophysiology Lecture
7:45 p.m.	Teaching Assistant Lecture
8:30 p.m.	Competitive Edge
8:55 p.m.	Wrap-up
9 p.m.	Adjourn

### *Here's what some of our past participants had to say*

"...this class challenged me and influenced my future decisions."

"I've never stuck with something this hard. I have learned it's more worthwhile than anything easy."

"Mechanisms...has shown me what I was meant to do in my future."

"This course was one of the most intellectually stimulating of my life."

## Applications

You can apply electronically or by mail. **Do not apply both ways.** Students that apply both ways will be disqualified.

- **Electronic:** Log onto [NationwideChildrens.org/MHHD](https://www.nationwidechildrens.org/MHHD). Follow the instructions on the website. ACT and SAT scores

### *Tips for Success—When you apply online, be sure to:*

1. Log on
2. Look at the essay prompts
3. Finish essay in a separate document
4. Attach online
5. Finish the entire online application at one time
6. You **MUST** enter the name and email for your reference. They will receive instruction on uploading your reference into the system.
7. Click SUBMIT. **If there are no errors**, you will receive a message that it is complete.

are from the December test dates.

**To apply by mail**, complete the application. Email, fax or land mail the completed application, including essays and reference, to [CommunityEducation@NationwideChildrens.org](mailto:CommunityEducation@NationwideChildrens.org), fax (614) 355-0670 or Community Education, Nationwide Children's Hospital, 700 Children's Drive, Columbus, OH 43205. Mail must be postmarked no later than February 15, 2021 at 8 a.m.

- **Late or partial applications will NOT be accepted. No exceptions.**

## Student Selection

Students are selected by a panel of researchers, physicians and administrators at Nationwide Children's Hospital and former MHHD students based on a holistic review. Applications are evaluated through a blind review process.

## Top Student

The top student from each class is given the opportunity to participate in an internship at The Research Institute at Nationwide Children's Hospital. The top 5 students present their project at The Research Institute at Nationwide Children's Hospital.

## Summer Scientist Education Series

As part of the MHHD experience, students attend this lecture series held on Thursdays at 4 p.m. for further exposure to research, medicine and careers.

Log onto [NationwideChildrens.org/Summer-Scientist-Series](https://www.nationwidechildrens.org/Summer-Scientist-Series) to review