



**Program Overview**

The purpose of the Research Scientist Development Program is to help students enhance their scientific skills through hands-on work in a research environment. The work that students do range from learning how to develop and implement a research plan to learning how to patent and market their own innovations.

Students in this program meet once a week at Ecotek Lab. Homework is given weekly. Students are expected to complete all homework, research projects and participate in field expeditions. They are also expected to participate in at least one academic competition and publish one copyrighted research paper.

**Who Can Attend?**

Any student that meets the program eligibility requirements listed below can participate in the program

**Program Eligibility Requirements**

- Must be at least 9 years old
- Must be in grades 5 thru 12
- Minimum 3.2 GPA
- Good work ethic
- Interest in science and global affairs
- Completed and approved student application

**Program Benefits**

After completing the Research Scientist Development Program, your child will be able to:

- Identify and use key science laboratory equipment
- Understand and follow basic lab safety procedures
- Develop and implement a plan for conducting advance science research
- Perform, document, and present research activities (including field work)
- Showcase a portfolio that involves research lab work and field work

**Topics Covered in Program**

- |                                  |                                |
|----------------------------------|--------------------------------|
| - Research Topic Selection       | - Data Collection and Analysis |
| - Research Planning              | - Presentation of Research     |
| - Field Work/Experiment Planning | - Publication of Research      |

**Hands-on Science**

- |                                      |                                  |
|--------------------------------------|----------------------------------|
| - Lab Equipment Use                  | - Alternative Energy Experiments |
| - Environmental Science Experiments  | - AgriTech Experiments           |
| - Biotechnology Experiments          | - Material Science Experiments   |
| - Mechanical Engineering Experiments | - Civil Engineering Experiments  |
|                                      | - Digital Technology             |

Student Name \_\_\_\_\_

Gender \_\_\_\_\_

Birth date \_\_\_\_\_ Age \_\_\_\_\_  
(must be at least 9yrs old)

Street \_\_\_\_\_

City \_\_\_\_\_

State/province \_\_\_\_\_

ZIP or postal code \_\_\_\_\_

County \_\_\_\_\_

Country \_\_\_\_\_

Telephone \_\_\_\_\_

School \_\_\_\_\_

Current Grade \_\_\_\_\_

Current GPA \_\_\_\_\_ (PROVIDE COPY OF MOST RECENT REPORT CARD)

1. What is your primary interest in science? \_\_\_\_\_
2. List public speaking events that you have participated in related to science
3. List scientific contributions you have made (e.g. science demo, research paper publication)
4. List all STEM Programs that you have attended (e.g. MSU biofuel program)
5. List all science related competitions that you have participated in (e.g. YBTC)

**Cost**

The cost to attend the Ecotek Lab Program for the 2016-17 school year is \$395/month. Partial scholarships are available for high performing students. This fee covers core activities (lab work, field trips, supplies). It does not cover field expeditions with the YoungXplorers Program or our visit to the United Nations. Payment can be made via check made payable to Ecotek Lab Program. Do not send cash, and do not staple your payment to this form. Send payment along with completed application to:

EcoTek Lab  
440 Burroughs, Suite 518  
Detroit, Michigan 48202

**Parent/guardian information**—Parent/guardian must fill out the following.

**Parent Name** \_\_\_\_\_

**Address** \_\_\_\_\_

**City** \_\_\_\_\_ **State** \_\_\_\_\_ **Zip Code** \_\_\_\_\_

**Email** \_\_\_\_\_ **Cell Phone** \_\_\_\_\_

**How did you hear about our program (check all that apply)?**

Counselor or teacher

Previous participant

Ecotek website

Other \_\_\_\_\_

**Health History**

Ensuring your child’s safety and health while participating in the ECOTEK Lab Program is important to us. To prevent the spread of communicable illnesses (e.g. flu, pink eye) and to ensure that no student is exposed to an unhealthy situation, every student must provide a medical report showing that they have had all vaccination shots and have had a physical assessment in the last six months from a local physician. This information has to be provided prior to joining any ECOTEK Lab Program.

While in the program, if a student becomes ill or show signs of illness while in our lab, they will be immediately restricted from continuing in the program and will not be allowed to return until they have received clearance from a local physician indicating that they are no longer ill and is not a health risk to other students in the lab.

Students that have allergies that are controlled by administering a pharmaceutical inhibitor (e.g. asthma inhaler), must bring have their medicines with them at all times when in ECOTEK Lab. Any information related to the administration of the inhibitor must be provided, in writing, to the ECOTEK Lab staff.

Please list any health problems that your child has that we need to be aware of. Also, provide information about medications that your child is currently taking to treat their medical condition.

Medical Condition	Medication Treatment

\_\_\_\_\_  
Parent Guardian Signature

\_\_\_\_\_  
Date

**2016-17 Ecotek Lab Schedule and Activities**  
(schedule subject to change)

**2016**

- August 15-17 Project Portfolio Kickoff, Accelerated Math/Science Prep (9am to 12pm)
- September 10, 17, 24 Phase 1 Research
- October 8, 15, 22 Report Card Check/ Research Portfolio Review
- November 5, 12, 19 Phase 2 Research
- December 3, 10, 17- Report Card Check/ Research Portfolio Review

**2017**

- January 7, 14, 21 – Local YBTC Competition/ Research Portfolio Review
- February 4, 11, 18- STEM Summer Program and Intern Applications Completed
- March 4, 11, 18- Report Card Check/Regional STEM Competitions
- April 2-3, 15-United Nations Visit
- May 6, 13, 20–Research Portfolio Review
- June 4- Year End Celebration

**Research Portfolio**

Each student scientist must identify, plan out, and complete a minimum of four research projects (2 per semester) in their area of interest during the school year. The projects must be challenging, complex, global in nature and produce innovative solutions. Projects should be unique and expand the knowledge base of the student scientist.

**Attendance Policy:**

Student scientists are expected to attend and actively participate in Ecotek Lab program. A maximum of three (3) unexcused absences will be allowed for a student during the school year. Though a student scientist may be absent, they are still responsible for meeting deadlines for their research portfolio.

**Field Trips**

It is expected that student scientists meeting the academic and in-lab performance requirements of the program will be nominated to travel with the Ecotek Lab program. Every student may not go on the same trip. In instances when travel occurs during the school week, it is the responsibility of the parent to notify the teachers and administrative staff at their child's school of the absence.

**GPA/ Academic Performance Requirement**

Student scientists must maintain a GPA of 3.2 or better to stay in the Ecotek Lab program. In the event a student scientist is unable to meet this academic performance requirement, they will not be allowed to continue their research or participate in any lab activities. If student performance does not improve significantly during the GPA recovery period (one report card marking), they will be removed from the Ecotek Lab program.

**Participation Fee Schedule**

Payment of monthly participation fee (\$395) is due on the first lab session of each month. Payment arrangements can be made in the event you are unable to pay your child's participation fee due to financial challenges.

Due Date

August 15, 2016  
September 10  
October 8  
November 5  
December 3  
January 7, 2017  
February 4  
March 4  
April 2  
May 6

**Academic Competitions**

Student scientists must participate in at least one academic competition during the school year. Below are list of competitions that the Ecotek Lab program recognizes:

You Be the Chemist	Chemistry Olympiad	Physics Olympiad
Biology Olympiad	MATE Competition	Future Farmers of America
International Brain Bee	Science Olympiad	MATHCOUNTS
Metro Science Fair	Intel Science Fair	International Bridge Design Competition
Future City	Natl Video Game Challenge	International BioGENEius Challenge

**Summer Internships and College Programs**

It is expected that all student scientists in Ecotek Lab will be accepted into a top summer science program. The staff at Ecotek Lab will nominate students for application to summer programs based on their academic and in-lab performance. Low quality work and inconsistent performance in the lab will increase a student scientist's chances of NOT being nominated for a summer program.

The decision to accept a student scientist into a summer program is made by admission staff at the partner universities and national laboratories. It is the responsibility of the student scientist to do research that will make their applications competitive on a national level.

**Ecotek Lab**  
**440 Burroughs Street, Suite 518**  
**Detroit, Michigan 48202**

**IMAGE RELEASE AND CONSENT AGREEMENT**  
**("Release")**

I hereby grant to the Ecotek Lab Program ("Ecotek") the irrevocable right and permission, in respect to the footage and/or photographs that it has taken or has had taken of my child in which I may be included with others, to copyright the same, in its own name, to use, re-use, publish, and re-publish, and otherwise reproduce, modify and display the same, in whole or part, individually or in conjunction with other photographs, and in conjunction with any other copyrighted matter, in any and all media now or hereafter known, for illustration, promotion, art, advertising and trade, or any other purpose whatsoever. I hereby release and discharge the ECOTEK and its related companies, subsidiaries, divisions, affiliates, officers, directors, employees, agents, and representatives (each jointly and severally considered one of the Released Parties), from any and all claims and demands arising out of or in connection with the use of the photographs, including without limitation, any and all claims for libel and/or invasion of privacy.

This Agreement shall be governed by the laws of the United States and the State of Michigan. Courts located in the State of Michigan shall have exclusive jurisdiction over any matters related to this Release. If for any reason a court of competent jurisdiction finds any provision, or portion thereof, to be unenforceable, the remainder of this Agreement shall continue in full force and effect.

ECOTEK may transfer all rights granted to it hereunder. This authorization and release shall also inure to the benefit of the legal representatives, licensees, and assigns of ECOTEK. I have read the foregoing and fully understand the contents of this Release. This Release shall be binding upon me and my heirs, legal representatives and assigns.

Student Name \_\_\_\_\_ Age \_\_\_\_\_

Parent Name (print) \_\_\_\_\_

Parent Signature \_\_\_\_\_

**Ecotek Lab Project Details for 2016-17 School Year**

<b>Project Type</b>	<b>Project Description</b>
Zoology	Student scientists will conduct research to better understand the habitat, behavior, life cycle and communication methods of dolphins, alligators, white rhinos and bats
Material Science	Student scientists will conduct research to better understand how to make, test and recycle bio-based polymers and oil eating microbes
Material Science	Student scientists will conduct research to better understand the chemistry and applications of nanomaterials- biosensors and flash memory
Agricultural/ Food Science	Student scientists will conduct research to develop a working solution to address citrus greening disease
Mechanical Engineering	Student scientists will design and construct a working prototype car that runs off of battery technology.
Mechanical Engineering	Student scientist will design, program and test a wide range of robots that can be used in a variety theaters (i.e. UUAV, ROV, Drones, Land Rover, Humanoids, Robotic Prosthetic)
Alternative Energy	Student scientists will conduct research to better understand the best practices regarding the manufacturing, testing and use of biofuel-soy, ethanol
Alternative Energy	Student scientists will conduct research to better understand the best practices for the design and testing of solid hydrogen fuel cells
Alternative Energy	Student scientists will conduct research to better understand how organic matter from trees and plants can be used as a form of bioenergy
Biotechnology	Student scientists will conduct research to better understand the neuro-circuitry in insects
Biotechnology	Student scientists will conduct research to better understand methods for detecting breast cancer using 2D nano-biosensors
Rapid Prototyping	Student scientists will conduct research to develop the skills to build prototype models of a variety of products using 3-D printing technology
Digital Media	Student scientists will conduct research to develop the skills to edit and publish digital media
Earth Science*	Student scientists will conduct research to better understand pollution management and conservation of barrier island ecosystems within the Great Lakes
Earth Science*	Student scientists will conduct research to better understand the biochemical, foodweb and geophysical landscape of wetlands



<b>Project Type</b>	<b>Project Description</b>
Earth Science*	Student scientists will conduct research to better understand the biochemical, foodweb and geophysical landscape of desert and cave ecosystems
Earth Science*	Student scientists will conduct research to better understand the geophysical and biochemical footprint of volcanos
Archaeology-Human History*	Student scientists will conduct research to understand the history, culture and social impact of the Gullah People on the Georgia Atlantic Coast –YoungXplorers Program

\*Requires an field expedition with YoungXplorers program

List the five projects that you would like to participate in during the 2015-16 school year.		
Project #	Project Description	Approved/Declined
1		
2		
3		
4		
5		

Note. Project assignments will be made by Executive Advisor of Ecotek Lab based on student interests, past performance and available research positions. A minimum of four projects will be awarded to each student scientist