

# 3-5th Grade Certificate Master List

## Science

### *James Tour Problem Solving Award*

James Tour is an American chemist that works with developing new molecular nano electronics. He is well known for his invention of the nanocar which is an “automobile” that is around 20,000 times thinner than a human hair. Nanocars are built to be able to transport things. Eventually, James hopes they can help build advanced electronics.

### *Tiera Guinn Innovation Award*

Tiera Guinn is a rocket scientist that helped design the Space Launch System that is set to take humans to Mars. While many scientists work their entire careers hoping to get a chance to work for NASA, Tiera was able to start designing the SLS while she was still in college!

### *Mario José Molina-Pasquel Henríquez Environmentalist Award*

Mario Henriquez is a Mexican chemist that is best known for his work related to the discovery of the Antarctic ozone hole. He went on to help educate the public about the danger of chlorofluorocarbon gases (or CFC’s), which he showed to be contributors to the ozone hole. He received the Nobel Prize in Chemistry in 1995 for his work.

### *Kathrin Barboza Marquez Field Study Award*

Kathrin Barboza Marquez is a Bolivian biologist who is an expert in bat research. In 2006, she and her partner discovered a species of bats that was thought to be extinct. She then went on to complete some of the most comprehensive field studies on bats ever done and has helped create a better understanding of bats in general.

### *Charles H Turner Animal Research Award*

Charles Turner was a behavioral scientist that was a pioneer in the field of insect intelligence and behavior. He was the first to discover that insects can hear. He also ran a series of famous experiments to prove that insects can learn patterns and adjust their behavior to fit the patterns.

### *James Chan Innovation Award*

James Chan was the first person to power an automobile motor with an ac (electric) current. His work served as the starting point used to develop many electric cars we are familiar with today. He has written over 400 technical papers on electric cars and holds 10 patents.

### *Rosalind Franklin Perseverance Award*

Rosalind Franklin was a chemist best known for her x-ray crystallography photography. She spent most of her career as one of the only women in her field, causing her to face regular sexism. Rosalind famously took a photograph of a DNA molecule that allowed the double helix structure of DNA to be discovered. Rosalind was not initially recognized for her contributions, due to her gender, but was eventually given credit for her discovery.

### *Jane Goodall Animal Advocate Award*

Jane Goodall has spent decades of her life studying and advocating for chimpanzees. She is well known for her tactics of studying chimps by climbing into trees with them, mimicking their behavior, and gaining their trust. Her research has revolutionized our understanding of chimpanzee behavior.

### *Jack Horner Paleontology Award*

Jack Horner is well known for finding a piece of a T-Rex with soft tissue still intact. This led to the hypothesis that dinosaurs are more closely related to birds than to lizards. He was also the inspiration for the main character in the original Jurassic Park Series.

### *Xue Shifeng Scientific Inquiry Award*

Xue Shifeng is working to discover more about how genetics control organism development. For example, she recently conducted a research project to determine how a human fetus develops a nose. By understanding how humans develop, she is hoping to better understand how development goes wrong for humans that have rare genetic diseases. She hopes to be able to create better protocols for diagnosing and treating rare genetic diseases.

### *Sanghamitra Bandyopadhyay Critical Thinking Award*

Sanghamitra Bandyopadhyay has conducted award winning research in algorithmic optimization. She has been able to apply algorithms to the field of biology and has used them to study the human body. This has led to the discovery of a genetic marker for breast cancer and the role of white blood cells in Alzheimer's disease.

### *Idelisa Bonnelly de Calventi Passion Award*

Idelisa Bonnelly de Calventi was born and raised in the Dominican Republic. She pursued an education in marine biology in New York. After learning and working in the field of marine biology in the United States, she brought what she learned home to the Dominican Republic. Idelisa founded the Marine Research center in the Dominican Republic and helped create the first legally protected area for humpback whales. She has been nicknamed the "Mother of Marine Biology in the Caribbean" because of her passion and determination.

### *Sabrina Gonzalez Pasterski Scientific Analysis Award*

Sabrina Gonzalez Pasterski has been nicknamed "The Next Einstein." She discovered the spin memory effect in 2014, which may be used to detect or verify the net effects of gravitational waves. She continues to make new contributions in the field of physics. One of her papers was even quoted by Stephan Hawking.

### *Charles Kao Innovation Award*

Charles Kao is a Chinese electrical engineer and physicist. He is well known for his research on transmitting laser light through glass fibers. His work led the way for fiber optics to be used in communication. He is often known as the "godfather of broadband" because his work paved the way for the development of high speed internet.

*David Baltimore Research Award*

David Baltimore has made several contributions to the understanding of how and why people get sick. His research has greatly contributed to our understanding of diseases such as cancer, HIV, and a variety of retroviruses.