

# 2021 SOUTHEAST REGIONAL SCIENCE & ENGINEERING FAIR

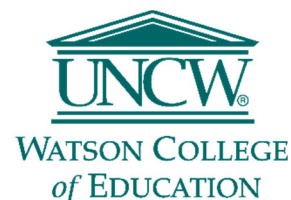
HOSTED BY CESTEM  
Watson College of Education  
University of North Carolina Wilmington

FEBRUARY 22-26, 2021  
\*Virtual Edition\* – Held via Zoom

NORTH  
CAROLINA

SCIENCE AND  
ENGINEERING FAIR

PRESENTED BY THE BIOGEN FOUNDATION



# Staff, Coordinators, and Volunteers

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## CESTEM Staff

INTERIM CESTEM DIRECTOR & REGION 2 SCIENCE & ENGINEERING FAIR DIRECTOR

Heddy Clark

ADMINISTRATIVE ASSOCIATE

Gianna Geiss

PROGRAM ASSOCIATE

Michelle Hafey

## LEA Fair Coordinators

Apollos Classical Academy, Heather Higerd  
New Hanover County, David Glenn  
Pender County, Mary Strong

St. Mark Catholic School, Mary Zeigler  
Willow Creek Academy, Apryle Negron

## Category Judges

Walter Andrews  
Kristin Bennett  
Kevin Burnett  
Xuemei Chen  
Joseph Covi  
Thomas Dinkins

Ashli Gibson  
Kendra Harrison  
Russell Herman  
Pepper Hill  
Edwin Hoefer  
John LaSala

Chelsea Lloyd  
Kristina Mazzarone  
Heather McWhorter  
Jim Mulligan  
Kimberly Oakley  
Angie Reid-Griffin

Jean-Luc Scemama  
Mary Strong  
Olivia Tucker  
Jitka Virag  
Yishi Wang

## Special Award Judges

STEP INTO STEM AWARD FOR  
FEMALE EXCELLENCE IN STEM

Uma Volety

NORTH CAROLINA AMERICAN WATER  
WORKS ASSOCIATION/  
WATER ENVIRONMENT ASSOCIATION

Malcolm Barnard  
Richard Mullins  
Diana Rashash

WAYNE HANSON AWARD FOR  
EXCELLENCE IN SCIENCE OR  
ENGINEERING

Russ Herman

## Award Ceremony Guest Speakers

Chris Ashwell  
Van Dempsey  
Zane Dash  
Sara Gibson  
Uma Volety

Chair, NC Science Fair Foundation  
Dean, Watson College of Education, University of North Carolina Wilmington  
Founder and President, STEM Academy of North Carolina  
Science Fair Chair, Public Education Committee, NC American Water Works Assoc.  
Step into STEM Award Sponsor

## Fair Volunteers

Racheal Gliniak  
Nicole Shumway  
Bill Sterrett

# Awards

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**Award Ceremony:** Click [here](#) to view on YouTube.

## Elementary

### *Honorable Mention*

- Ruth Adams & Callie Tarrant, Porters Neck Elementary School (Earth and Environmental Science)

### *Exemplary*

- Nathaniel Craven, Edwin Anderson Elementary School (Physics and Mathematics)\*
- Grayson Dickey & Mackenna Dickey, North Topsail Elementary School (Biological Sciences)\*
- Gunner Horne, Topsail Elementary School (Chemistry)\*
- Evangeline Negron, Willow Creek Academy (Earth and Environmental Science)\*
- Airlie Taylor, College Park Elementary School (Chemistry)\*

## Junior – Biological Sciences A

- Honorable Mention: Taylor Blackwell & Declan Chepelsky, St. Mark Catholic School
- Second Place: Kaylie Clark & Lila Corliss, St. Mark Catholic School\*
- First Place: Addie Sterner, St. Mark Catholic School\*

## Junior – Biological Sciences B

- Honorable Mention: Ledger Frelke & Pennington Frelke, St. Mark Catholic School
- Second Place: Natalya Mewborn, St. Mark Catholic School\*
- First Place: Savannah Hermann, St. Mark Catholic School\*

## Junior – Chemistry

- Honorable Mention: Ella Renton, St. Mark Catholic School
- First Place: Maeve Heaney, St. Mark Catholic School\*

## Junior – Earth and Environmental Science

- Second Place: Lake Slacum, St. Mark Catholic School\*
- First Place: Amulya (Mia) Volety, Roland Grise Middle School\*

## Junior – Engineering

- Third Place: Madeline Sawyer, St. Mark Catholic School\*
- Second Place: Casey Lee, St. Mark Catholic School\*
- First Place: Khloe Le, St. Mark Catholic School\*

## Junior – Physics and Mathematics

- Honorable Mention: Taylor Floyd, St. Mark Catholic School
- Second Place: Maya Roseboro, Charles Murray Middle School\*
- First Place: Lucy Walsh, St. Mark Catholic School\*

## Junior – Technology

- Honorable Mention: Ryan Burton, St. Mark Catholic School

*\*Projects promoted to the state North Carolina Science and Engineering Fair*

# Awards Cont.

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## Senior – Exemplary

- Krisalyn Higerd, Apollos Classical Academy (Chemistry)\*
- Elizabeth Rose & Jacob Rose, Ashley High School/NC School of Science & Math (Engineering)\*
- Uma Volety, NC School of Science & Math (Earth and Environmental Science)\*
- Regan Williams, John T Hoggard High School (Biological Sciences A)\*

## North Carolina American Water Works Association/Water Environmental Association

### Junior Division

- Second Place: Amulya (Mia) Volety, Roland Grise Middle School (Earth & Environmental Science)
- First Place: Scott McFarland, Myrtle Grove Middle School (Earth & Environmental Science)\*

### Senior Division

- Second Place: Regan Williams, John T Hoggard High School (Biological Sciences A)
- First Place: Uma Volety, NC School of Science & Math (Earth & Environmental Science)

## Step into STEM Award for Female Excellence in STEM

### Elementary Division

- Evangeline Negron, Willow Creek Academy (Earth & Environmental Science)
- Gracie Willis, Porters Neck Elementary School (Earth & Environmental Science)

### Junior Division

- Lucy Walsh, St. Mark Catholic School (Physics & Mathematics)

## Wayne Hanson Award for Excellence in Science or Engineering

Regan Williams, Biological Sciences A, John T. Hoggard High School

*“Tropicalization of temperate ecosystems: how climate change can influence coastal health and resilience.”*

*\*Projects promoted to the state North Carolina Science and Engineering Fair*

# North Carolina State Fair

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For a student to advance to the North Carolina State Science & Engineering Fair, they must have participated in a regional science fair and been invited by the Regional Director to advance to the state Science & Engineering Fair. More information can be found [here](#).

2021 NORTH CAROLINA SCIENCE AND ENGINEERING FAIR DATES (HELD VIRTUALLY ON ZOOM):

Division	Competition	Award Ceremony
Senior	March 27	March 28
Junior	April 17	April 18
Elementary	April 24	April 24

# Student Projects

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## Elementary Division

Adams, Ruth & Tarrant, Callie. Are microplastics in rain water? (Earth/Environmental Sciences). Porters Neck Elementary School - Wilmington, New Hanover County

Bailey, Charlotte. Need For Speed. (Physics and Math). Alderman Elementary School - Wilmington, New Hanover County

Craven, Nathaniel. Ride The Wave. (Physics and Math). Edwin Anderson Elementary School - Wilmington, New Hanover County

Dickey, Grayson and Mackenna. Why Do We Get Dizzy? (Biological Sciences). North Topsail Elementary School - Hampstead, Pender County

Frith, Grant. Solving the Mystery of Solvents. (Chemistry). Porters Neck Elementary School - Wilmington, New Hanover County

Horne, Gunner. Going, Going, Gone! (Chemistry). Topsail Elementary School - Hampstead, Pender County

Krantz, Holden. Standing On Eggs. (Earth/Environmental Sciences). South Topsail Elementary School - Hampstead, Pender County

Lambert, Max. Watts Up With My Electric Bill. (Physics and Math). North Topsail Elementary School - Hampstead, Pender County

Lewis, Sophia. What can clean a penny the best? (Chemistry). Edwin Anderson Elementary School - Wilmington, New Hanover County

Negrón, Evangeline. Dirty Business: A Study of How Compost Affects Plant Growth. (Earth/Environmental Sciences). Willow Creek Academy - Sneads Ferry, Onslow County

Robinson, Chase. Sun's Out, Buns Out! (Engineering/Technology). North Topsail Elementary School - Hampstead, Pender County

Taylor, Airlie. Rockets Rock. (Chemistry). College Park Elementary School - Wilmington, New Hanover County

Willis, Gracie. Testing Tides. (Earth/Environmental Sciences). Porters Neck Elementary School - Wilmington, New Hanover County

Wishon, Walter. The Static Force. (Earth/Environmental Sciences). Bradley Creek Elementary School - Wilmington, New Hanover County

## Junior Division

### Biological Sciences A

Blackwell, Taylor & Chepelsky, Declan. How Fresh is your Egg? St. Mark Catholic School - Wilmington, New Hanover County

Clark, Kaylie & Corliss, Lila. Alien Lights. St. Mark Catholic School - Wilmington, New Hanover County

Sterner, Addie. Hydroponic versus Soil Grown Romaine. St. Mark Catholic School - Wilmington, New Hanover County

### Biological Sciences B

Blair, Bryan. Effect of Masks on Oxygen Saturation. Gregory International Middle School - Wilmington, New Hanover County

Braune, Stevie. How safe are you? Cape Fear Middle School - Leland, Pender County

Buffa, Gracen. Hair Dye with Temperature. St. Mark Catholic School - Wilmington, New Hanover County

Frelke, Ledger and Pennington. Best Natural Sleep Remedies. St. Mark Catholic School - Wilmington, New Hanover County

Herrmann, Savannah. Do Dogs Have a Preference in Color. St. Mark Catholic School - Wilmington, New Hanover County

Johnson, Sam. Dog Communication Button. St. Mark Catholic School - Wilmington, New Hanover County

Mewborn, Natalya. Testing Pavlov's Theory with Bettas. St. Mark Catholic School - Wilmington, New Hanover County

Nauert, Hanna. Hair Dye with Temperature. St. Mark Catholic School - Wilmington, New Hanover County

### Chemistry

Heaney, Maeve. The "Egg" cellent Toothpaste Experiment. St. Mark Catholic School - Wilmington, New Hanover County

Johnston, Elliott. Distilling Water. St. Mark Catholic School - Wilmington, New Hanover County

Renton, Ella. The Science of Ice cream Salt. St. Mark Catholic School - Wilmington, New Hanover County

Theobald, Peyton. To Make Chlorine by Electrolysis of Sodium Chloride. St. Mark Catholic School - Wilmington, New Hanover County

## Earth and Environmental Science

McFarland, Scott. The Influence of Affluence on Effluents: Wealth and Watersheds Quality in New Hanover County. Myrtle Grove Middle School - Wilmington, New Hanover County

Negrón, Emma. The Losing Side of Silver: A Bioassay on the Effects of Nanosilver on the Aquatic Organism Daphnia Magna. Willow Creek Academy - Sneads Ferry, Onslow County

Negrón IV, Felix. An Electrifying Idea. Willow Creek Academy - Sneads Ferry, Onslow County

Slacum, Lake. Stirling Engine Fuel Test. St. Mark Catholic School - Wilmington, New Hanover County

Volety, Amulya. Effects of crude oil and dispersant on the mortality and filtration of juvenile oysters. Roland Grise Middle School - Wilmington, New Hanover County

## Engineering

Holleman, Henry & Hudson, Charlie. Catapult Crazy. St. Mark Catholic School - Wilmington, New Hanover County

Le, Khloe. Save Me At Sea. St. Mark Catholic School - Wilmington, New Hanover County

Le, Lydia. Alert! Stay Six Feet Apart! St. Mark Catholic School - Wilmington, New Hanover County

Lee, Casey. The Ear Saver. St. Mark Catholic School - Wilmington, New Hanover County

Lewis, Elsie. Brain Breaks. St. Mark Catholic School - Wilmington, New Hanover County

Sawyer, Madeline. What is the Best Angle to Launch a Volleyball From to Replicate a Serve or Hit? St. Mark Catholic School - Wilmington, New Hanover County

Slacum, Payne & Smith, Kenneth. DIY portable air conditioner. St. Mark Catholic School - Wilmington, New Hanover County

Sweeney, Briana. Handy Hovercrafts. St. Mark Catholic School - Wilmington, New Hanover County

## Physics and Mathematics

Floyd, Taylor. Block the Bug. St. Mark Catholic School - Wilmington, New Hanover County

Roseboro, Maya. Questioning the Queue. Charles Murray Middle School - Wilmington, New Hanover County

Walsh, Lucy. Bubble, Bubble, No More Trouble. St. Mark Catholic School - Wilmington, New Hanover County

## Technology

Brubaker, Cain & Christenson, Jack. Does Refresh Rate Matter? St. Mark Catholic School - Wilmington, New Hanover County

Burton, Ryan. App Building: The Virtual Age. St. Mark Catholic School - Wilmington, New Hanover County

## Senior Division

Higerd, Krisalyn. An Illuminating Investigation: Testing the Level of Chemiluminescence in Synthetic Blood with Sprayed with a Luminol Solution of Different Oxidizers. (Chemistry). Apollos Classical Academy - Camp Lejeune, Onslow County

Rose, Elizabeth and Jacob. Finding the Flow Rate through an Organic Oil Filter for Optimizing Runoff Filtration: Providing Data for the Implementation of Sustainable Drainpipe Filters in Civil Engineering. (Engineering). Ashley High School/NC School of Science & Math - Wilmington, New Hanover County

Volety, Uma. Cytotoxic responses to the perfluorinated xenobiotic, GenX of ATP-binding cassette protein and cellular activities in Crassostrea virginica hemocytes: Implications for global climate change. (Earth and Environmental Science). NC School of Science & Math - Wilmington, New Hanover County

Williams, Regan. Tropicalization of temperate ecosystems: how climate change can influence coastal health and resilience. (Biological Science A). John T Hoggard High School - Wilmington, New Hanover County