30th Annual Blue Ridge Highlands Regional Science Fair  
March 13, 2021 – Radford University

VIRGINIA STATE AND ENGINEERING FAIR DELEGATES

105    Diego Elias  
**Analysis of Unnecessary Spending in Flexible Spending Accounts**  
Blacksburg High School  
Sponsor: Katharine Davis

110    Madison Lilly  
**Influence of Virginia State Sentencing Guidelines on Jury Recommended Maximum Sentences**  
Southwest Virginia Governor's School  
Sponsor: Sherry Pugh

201    Katerina Leedy  
**Differential Expression of Genes Associated with Innate Immune Cell Function in Individuals with and without Alpha-gal Syndrome**  
Blacksburg High School  
Sponsor: Katharine Davis

301    Brock Duma  
**Whitewater Helmet STAR: Evaluating the Biomechanical Performance and Risk of Head Injury for Whitewater Helmets**  
Blacksburg High School  
Sponsor: Katharine Davis

402    Killian Woods  
**The Difference of the Chemical Composition of Peppermint Essential Oils Between Different Market Brands**  
Southwest Virginia Governor's School  
Sponsor: Jared Brown

502    Michael Wojdak  
**Mutation Parameters in Neuroevolution**  
Southwest Virginia Governor's School  
Sponsor: Heather Lowe

601    Shoshana Elgart  
**Modelling COVID-19: Simulating the Effects of Waning Immunity Using a New Multi-Compartment Epidemiological Model**  
Blacksburg High School  
Sponsor: Lauren Childs
702  Josh Tomiak
*Modeling the Effect of Environment on Collision Detection Runtime*
Southwest Virginia Governor's School
Sponsor: Sherry Pugh

802  Katelyn Collett
*Diversity of Arctic Ice Bacteria in Relation to Position and Distance From the Shore*
Southwest Virginia Governor's School
Sponsor: Rebecca Phillips

901  Megan Layne
*The Effects of Arm Rotational Velocity and Arm Length on Ball Speed of a Windmill Softball Pitch*
Southwest Virginia Governor's School
Sponsor: Matthew Frazier