

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



The Actuarial Foundation of Canada Award

Junior

Sponsor: The Actuarial Foundation of Canada
\$500 cash and certificate

Matthew Kabin – Frontenac, Lennox & Addington – ON
Fractal Encryption: Securing anything with Sierpiński triangles

The Actuarial Foundation of Canada Award

Intermediate

Sponsor: The Actuarial Foundation of Canada
\$750 cash and certificate

Artash Nath – Toronto – ON
The Silence of Canadian Cities: Seismic Impact of COVID-19 Lockdowns

The Actuarial Foundation of Canada Award

Senior

Sponsor: The Actuarial Foundation of Canada
\$1,000 cash and certificate

Michael Xu – Calgary Youth – AB
Multi-Agent AI System for Emergency Vehicle Preemption

The Beaty Centre for Species Discovery Award

Senior

Sponsor: Canadian Museum of Nature
\$1,000 cash, certificate and one-year Canadian Museum of Nature family membership

Margaret Krawciw – Vancouver Island – BC
Meddling Microplastics : A Study of the Interactions of Microalgae and Microplastics

Canadian Acoustical Association Award

Senior

Sponsor: Canadian Acoustical Association
\$1,000 cash and certificate plus subscription to the Canadian Acoustical Association's quarterly journal

Rohan Mehta – Simcoe County – ON
UAV Natural Disaster Detection and Human Search - Eagle i

Canadian Society for Clinical Chemists Award

Senior

Sponsor: Canadian Society for Clinical Chemists
\$1,000 cash and certificate

Ethan Chan – Greater Vancouver – BC
Spinal Solution: Developing an electronic device to detect cerebrospinal fluid in the emergency room

Canadian Stockholm Junior Water Prize

Senior

Sponsor: Canadian WEF Member Associations, the Canadian Water and Wastewater Association, and Jacobs
Stockholm Junior Water Prize Competition Online Event, August 2-24, 2021, for up to two student(s) of the winning project to represent Canada at the International Stockholm Junior Water Prize Competition. The two runner-up projects will each receive a \$300 cash prize.

Margaret Krawciw – Vancouver Island – BC
Meddling Microplastics : A Study of the Interactions of Microalgae and Microplastics

Taya Lee – Vancouver Island – BC
Recycling Oil From Contaminated Water Using Azolla filiculoides to Create a Biodiesel Blend

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Canadian Young Researcher Award

Senior

Sponsor: Canadian Science Publishing and STEM Fellowship
\$1,000 cash and certificate and peer review and guidance from the STEM Fellowship editorial board leading to open access publication of the project in the STEM Fellowship Journal by Canadian Science Publishing, Canada's largest scientific publisher.

Christoff Lee – Calgary Youth – AB

Apoptosis: a link between atrazine and decline in Daphnia magna reproduction

CAP Physics Prize

Junior

Sponsor: Canadian Association of Physicists
\$500 cash and certificate

Téo L'Italien – Districts francophones du Nouveau-Brunswick – NB

Le réjuvenateur de marqueurs

CAP Physics Prize

Intermediate

Sponsor: Canadian Association of Physicists
\$750 cash and certificate

Mitchell Clapperton – Bay Area – ON

The Creation & Optimization of a Wake Mitigation Device Using Computational Fluid Dynamics

CAP Physics Prize

Senior

Sponsor: Canadian Association of Physicists
\$1,000 cash and certificate

Adam Patton – Cariboo Mainline – BC

The Shapes of the Future - Increasing Electrode Efficiency in Electrolysis for Hydrogen Production

Carlson Wagonlit Award

Junior

Sponsor: Carlson Wagonlit Travel
\$500 cash and certificate

Elise Munro – Strait – NS

Running on Air

Centre for Canadian Nuclear Sustainability Award

Intermediate

Sponsor: Centre for Canadian Nuclear Sustainability
\$750 cash and certificate

Hardit Singh – Waterloo-Wellington – ON

Specular: A Comprehensive Teleophthalmology Platform for People Centered Eyecare

deutraMed Chemistry and Innovation Award

Junior

Sponsor: deutraMed Inc.
\$500 cash and certificate

Tyson Neufeld – Northern British Columbia – BC

Microbial Fuel Cells for Improved Contaminated Soil Clean UP and Bio-Electricity Generation

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Engineering Innovation Award

Senior

Sponsor: The Engineering Institute of Canada
\$1,000 cash and certificate

Sarvnaz Ale Mohammad, Jin Schofield – York – ON

ConchShell: A Wearable ASL Translator Leveraging Novel Machine Learning and Computer Vision

Excellence in Astronomy Award

Junior

Sponsor: Royal Astronomical Society of Canada
Telescope and certificate plus a one year membership to RASC

Aiyaan Faisal – Manitoba Schools Science Symposium – MB

Mea Satelles

Excellence in Astronomy Award

Intermediate

Sponsor: Royal Astronomical Society of Canada
Telescope and certificate plus a one year membership to RASC

Silas Eastwood – Halifax – NS

Revolution Evolution: The Design Evolution of a Space Qualified Reaction Wheel

First Nations University of Canada Award

Junior

Sponsor: First Nations University of Canada
\$500 cash and certificate

Eboni Samaha – Cariboo Mainline – BC

Medicinal Benefits of Aboriginal Plants

Future Motion Creativity in Engineering Award

Intermediate

Sponsor: Future Motion, Inc.
\$750 cash and certificate and a Onewheel + XR

Luca Menard – Frontenac, Lennox & Addington – ON

An investigation into the potential of airfoils in producing extra propulsion for bicycles

Future Motion Creativity in Engineering Award

Senior

Sponsor: Future Motion, Inc.
\$1,000 cash and certificate and a Onewheel + XR

Zachary Ireland – Manitoba Schools Science Symposium – MB

Theoretical Solutions to the Dangers of Nuclear Power

Intact Climate Change Resilience Award

Junior

Sponsor: Intact Financial Corporation
\$500 cash and certificate

Veronica Guo – Greater Vancouver – BC

A Novel Approach to Decomposing Polystyrene

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Intact Climate Change Resilience Award

Intermediate

Sponsor: Intact Financial Corporation
\$750 cash and certificate

Emma Palmer – Simcoe County – ON

Silicate Solutions: Testing the Effects of Mineral Silicate Paint as an Insulation

Intact Climate Change Resilience Award

Senior

Sponsor: Intact Financial Corporation
\$1,000 cash and certificate and a virtual tour of the University of Waterloo and the Intact Centre on Climate Adaptation, Canada's leading research centre on climate change resilience, in Waterloo, Ontario.

Cynthia Cui – North-West New Brunswick – NB

Flood Resilience Lab

International Summer School for Young Physicists Award

Senior

Sponsor: Perimeter Institute for Theoretical Physics
Certificate and a full scholarship to participate in the International Summer School for Young Physicists 2021 (ISSYP 2021) from July 19-30.

Zachary Ireland – Manitoba Schools Science Symposium – MB

Theoretical Solutions to the Dangers of Nuclear Power

Nutrients for Life Foundation Award

Intermediate

Sponsor: Nutrients for Life Foundation Canada
\$750 cash and certificate

Alex Lea – Central Interior British Columbia – BC

Soil Remineralization - Increasing Nutrient Levels and Bio-Mass in Pasture Grasses

Renewable Energy Award

Junior

Sponsor: Ontario Power Generation
\$500 cash and certificate

Ethan Chase – Greater Vancouver – BC

Wave Energy

Renewable Energy Award

Intermediate

Sponsor: Ontario Power Generation
\$750 cash and certificate

Calvin Karthik – Peterborough – ON

A Mighty Mushroom and the Power of Poop : Testing Biogas Production using Spent Mushroom Substrate Phase 2

Renewable Energy Award

Senior

Sponsor: Ontario Power Generation
\$1,000 cash and certificate

Taya Lee – Vancouver Island – BC

Recycling Oil From Contaminated Water Using Azolla filiculoides to Create a Biodiesel Blend

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



S.M. Blair Family Foundation Award

Junior

Sponsor: S.M. Blair Family Foundation
\$500 cash and certificate

Cindy Cheng – Waterloo-Wellington – ON
A Modular Multi-Functional Wound Dressing

S.M. Blair Family Foundation Award

Intermediate

Sponsor: S.M. Blair Family Foundation
\$750 cash and certificate

Mitchell Clapperton – Bay Area – ON
The Creation & Optimization of a Wake Mitigation Device Using Computational Fluid Dynamics

S.M. Blair Family Foundation Award

Senior

Sponsor: S.M. Blair Family Foundation
\$1,000 cash and certificate

Ethan Chan – Greater Vancouver – BC
Spinal Solution: Developing an electronic device to detect cerebrospinal fluid in the emergency room

Shad Canada Scholarship Award

Intermediate

Sponsor: Shad Canada
Certificate and \$1,000 scholarship towards the program fee to attend Shad in July 2022

Islay Graham – Bluewater – ON
DL-T Sandwich (EX-25): A Prototype to Eat Waste Heat

Ishan Leung – South Fraser – BC
Stuck In The Middle With You: A Project on Crossing The Midline

Bruce Porter – Yukon Stikine – YT
Microplastic in Lake Fishes of Southern Yukon and Northern Stikine: A Baseline

Statistical Society of Canada Award

Intermediate

Sponsor: Statistical Society of Canada
\$750 cash and certificate

Aarushi Bhargava – Calgary Youth – AB
The Effect of Weather on Solar Electricity Generation

Statistical Society of Canada Award

Senior

Sponsor: Statistical Society of Canada
\$1,000 cash and certificate

Allison Engo – Réseau Technoscience – QC
Saved on the Fly

Sustainable Agriculture Award

Junior

Sponsor: 4-H Canada
\$500 cash and certificate

Sophie Filion, Chloe Filion – Niagara – ON
The Automated Chicken Coop

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Ted Rogers Innovation Award

Intermediate

Sponsor: Rogers Communications Inc.

Certificate and full scholarship to participate in the Youth Science Canada/York University STEM Entrepreneur Virtual Bootcamp in August 2021

Abel Diress, Adam Mulugeta – Ottawa – ON

Developing a Non-Invasive Inexpensive Biosensor to Predict Heart Disease

Mac Dykeman – 4-H Canada – 4H

An Innovative Approach to Reducing Biosecurity in Hatching

Paul Lee – Bay Area – ON

Development of a 3D Cursor for Robotic Arm Programming Optimization

Shayan Mahmood – Thames Valley – ON

Predicting Blood Glucose Levels in Diabetic Patients using Neural Networks

Shaun Plassery – Peterborough – ON

Phytoremediation of Crude Oil: Effect of Rhizobium and Kelp on Soybean & Wheat under Oil Stress (v2)

Patricia Rea – York – ON

BioGrade Yeast: Protecting Martian Biofactories with a Novel cfAFP-501-CcMreB Polymer

Henry Zhao – Greater Vancouver – BC

Quadruped Robot with Rough Terrain Traversal

Ted Rogers Innovation Award

Senior

Sponsor: Rogers Communications Inc.

Certificate and full scholarship to participate in the Youth Science Canada/York University STEM Entrepreneur Virtual Bootcamp in August 2021

Daniel Kornylo – Northern Vancouver Island – BC

EnviroHerp - Challenging Traditional Vivariums

Sabrina Mogus – Bay Area – ON

ViQ: A Wearable Sonic Vibrotactile Stimulation and Cueing Device for Individuals with Parkinson's

Michaela Stillwell, Antonia Tannert – Central Interior British Columbia – BC

Straws: Impact and Solution

University of Ottawa Undergraduate Research Scholarship Award

Senior

Sponsor: University of Ottawa, Faculty of Science

\$11,500 research scholarship and certificate

Vansh Sethi – Ottawa – ON

A Novel Method to Predict TCR Constructs for Specific Disease Biomarkers using Deep Learning

University of Toronto Engineering Award

Intermediate

Sponsor: University of Toronto, Faculty of Applied Science & Engineering

Certificate and full scholarship in Global Engineering Challenge one-week virtual program in summer 2021

Mac Dykeman – 4-H Canada – 4H

An Innovative Approach to Reducing Biosecurity in Hatching

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



University of Toronto Engineering Award

Senior

Sponsor: University of Toronto, Faculty of Applied Science & Engineering

Certificate and full scholarship in Global Engineering Challenge one-week virtual program in summer 2021

Sarvnaz Ale Mohammad, Jin Schofield – York – ON

ConchShell: A Wearable ASL Translator Leveraging Novel Machine Learning and Computer Vision

York University STEM Entrepreneur Bootcamp Scholarship Award

Intermediate

Sponsor: York University, Lassonde School of Engineering

Certificate and full scholarship to participate in the Youth Science Canada/York University STEM Entrepreneur Virtual Bootcamp in August 2021

Hardit Singh – Waterloo-Wellington – ON

Speculor: A Comprehensive Teleophthalmology Platform for People Centered Eyecare

York University STEM Entrepreneur Bootcamp Scholarship Award

Senior

Sponsor: York University, Lassonde School of Engineering

Certificate and full scholarship to participate in the Youth Science Canada/York University STEM Entrepreneur Virtual Bootcamp in August 2021

Braxton Chan – East Kootenay – BC

Long-term results of a Novel surgical procedure for Osteochondral Defects

Andrew Mao – Toronto – ON

Rapid Detection of Concussions

Excellence Award - Bronze

Junior

Sponsor: Youth Science Canada

Medal and certificate

Peter Alexis, Adrian Mak – Toronto – ON

Cracking the Radiation Code

Thomas Andersen – Central Okanagan – BC

Testing Sugar Levels in Popular Beverages

Carissa Belhomme, Darcie Fortier – Peace Country – AB

Sense Assumption

Noah Bryan – York – ON

Hand Washing Always Wins, But Why at the Cost of Dry Damaged Skin?

Rory Cohen – Simcoe County – ON

Digital Sensors In VR

Kevin Cornell – South-East New Brunswick – NB

The Better SCUBA Tank

Raipartap Curry – Fraser Valley – BC

Smart Parking

Carson Dalpke – Greater Vancouver – BC

Passive solar heating - Ancient civilizations used it, we can do it too!

Caleb Dawson – Bluewater – ON

Slow and Steady - Capillary Action

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Anabella Ferrari, Emma Sun – Halifax – NS

Distraction Reaction: The Truth Behind Multitasking

Sacha Fleury-Allen, Lucia Gastiazoro – Pacific Northwest – BC

The Spread of the Invasive Yellow Floating Heart: The root of the problem

Swas Ghosh – Northern British Columbia – BC

What pretty garments can be seen the best by dangerous drivers

Analiese Hall, Andrew Muratov – Toronto – ON

Wor-Ease Away: Reassuring Parents by Aiding in the Identification of Childhood Viral Rashes

Orpa Hawlader – Eastern Newfoundland – NL

Surface Tension on Floating Objects and Cheerios Effect

Dianna Hu – Vancouver Island – BC

Self-watering Plant Pot

Aylan Kachebi – Réseau Technoscience – QC

Les secrets de l'univers

Jonathan Leung – Greater Vancouver – BC

A Comparison of 2 Health Assessment Methods for Prunus cerasifera 'Atropurpurea'

Trissy Liu – Thames Valley – ON

The Kind Words Project

Diederik Luyt – Thames Valley – ON

Nano But Mighty: A Study of Lipid Nanoparticle Size and Function

Davin MacAskill – South-East New Brunswick – NB

Les oiseaux et la météo

Nathaniel Martin – Manitoba Schools Science Symposium – MB

Can Manitoban Crops Feed the World After Global Warming Changes Our Soil?

Abhinav Menon – Saskatoon – SK

Search for the Suitable Sodium-Ion Battery (2020)

Advai Nair – Northern British Columbia – BC

Fluoride: Good Or Bad?

Eva Salomons – Thames Valley – ON

Heating Things Up

Eboni Samaha – Cariboo Mainline – BC

Medicinal Benefits of Aboriginal Plants

Anniya Saran – Edmonton – AB

Envirodemic

Viduni Siriwardana – Greater Vancouver – BC

Energy Synthesis from Recycled Aluminum Beverage Containers

Kay Spencer – Lethbridge – AB

Pennies From Heaven

Cassidy Vieira – Winnipeg Schools – MB

My Hands are Clean. True or False?

Tara Zhan – Greater Vancouver – BC

MotionDx: Creating an Effective and Affordable Smart Pill Bottle

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Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Excellence Award - Bronze

Intermediate

Sponsor: Youth Science Canada

Medal and certificate

Affaan Abid – Saskatoon – SK

Application of Spectral Analysis: A Novel Approach for Detecting Gastrointestinal Bleeding

Maya Achuthan – Edmonton – AB

A Novel Approach to CFTR Gene-Editing Through CRISPR-Cas9 Technology in Cystic Fibrosis

Oliver Baker – Annapolis Valley – NS

*Blue Mussels (*Mytilus edulis*) as Bioindicators of Plastic Contamination*

Aarushi Bhargava – Calgary Youth – AB

The Effect of Weather on Solar Electricity Generation

Antoine Blais – Réseau Technoscience – QC

Protéine Prometteuse

Pauline Botros – York – ON

A Novel Approach Towards Constructing Bioplastic Out of Natural Waste

Vera Chen – North-West New Brunswick – NB

A Novel Way to Measure Blood Electrolytes and Metabolites

Abel Diress, Adam Mulugeta – Ottawa – ON

Developing a Non-Invasive Inexpensive Biosensor to Predict Heart Disease

Justin Du – Greater Vancouver – BC

Characteristics Generation of Canadian PV Arrays by Machine Learning

Samantha Glenday – Frontier Schools – MB

Is Bio-plastic Our Future?

Islay Graham – Bluewater – ON

DL-T Sandwich (EX-25): A Prototype to Eat Waste Heat

Paola Fernanda Guzmán Pérez, Valeria Johana Vera Aviles – Mexico

DPS (Drug Protection Substance)

David Harris – Northwestern Ontario – ON

The Effects of the Cost of a Golf Ball on the Coefficient of Drag

Connor Jantzi – Waterloo-Wellington – ON

Detecting Disaster - Preventing Devastation

Debasri Jena – Southeast Alberta – AB

Dehydration Sensor

Angad Khattra – Toronto – ON

Emotion detection completed by Artificial Intelligence

Samuel Kostousov – Calgary Youth – AB

Braille E-Reader - A Proof of Concept

Alexis Kuo – Vancouver Island – BC

Exploring an Affordable and Sustainable Approach to Enhance the Effectiveness of Non-medical Masks

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Alex Lea – Central Interior British Columbia – BC
Soil Remineralization - Increasing Nutrient Levels and Bio-Mass in Pasture Grasses

Mehar Mago – Northwestern Ontario – ON
Status of Mental Health of Thunder Bay Residents During COVID-19

Marissa Magsino – Manitoba Schools Science Symposium – MB
*Optimal environmental conditions maximizing the biodegradation of polystyrene using *Tenebrio molitor**

Annika Matusch – Sudbury – ON
Cleaning up the Great Pacific Garbage Patch: Designing a Sustainable System Using Pyrolysis

Tri Nguyen – Central Alberta Rotary – AB
Automation in action - Establishing autonomous vehicle networking systems

Mark Norregaard – 4-H Canada – 4H
A Corrosion Comparison of Agricultural Disinfectants on Metals

Ria Patel – Ottawa – ON
The Final Countdown: how much longer until quantum computers become the next cybersecurity threat

Bruce Porter – Yukon Stikine – YT
Microplastic in Lake Fishes of Southern Yukon and Northern Stikine: A Baseline

Charlotte Quin – Vancouver Island – BC
Growth and Feed Consumption of Chicks supplemented by Commercial Feed and Sunflower Sprouts

Kevin Shao – Thames Valley – ON
A Novel Three-Dimensional Choreography of the Three-Body Problem Based on the Periodic Figure Eight

Ken Shibata – Toronto – ON
The Properties of Face Masks

Aarushi Vasal – Wood Buffalo – AB
Yeast In Bioremediation

Edward Xiong – Sudbury – ON
Autonomous Prevention of Bus Overcrowding and Mask Detection

Excellence Award - Bronze

Senior

Sponsor: Youth Science Canada

Medal and certificate

Aunum Abid – Saskatoon – SK
Downstream Targets of the p63 Gene and Their Roles in Oral Squamous Cell Carcinomas

Mazin Al-Ani, Adam Taback – Toronto – ON
Ocean Acidification and Buffers: A Homemade Solution

Livi Allen – Eastern Newfoundland – NL
Effect of Light Color on the Rate of Photosynthesis

Ronan Blattner – Central Interior British Columbia – BC
*Behavioural Changes and Communication in *formica fusca* colonies*

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Braxton Chan – East Kootenay – BC

Long-term results of a Novel surgical procedure for Osteochondral Defects

Cynthia Cui – North-West New Brunswick – NB

Flood Resilience Lab

Sebastian Gallegos, María Talamantes Cruz – Mexico

Phytochemical evaluation of different extracts of Bougainvillea spectabilis

Rakshit Galwa – North-West New Brunswick – NB

Impacts of Climate Change-Induced Seawater Inundation on an Agriculturally Important Soil Bacterium

Jakub Gierus – Calgary Youth – AB

Artificially Intelligent Agents for Bargaining with Private Information

Marcus Grillo – Northwestern Ontario – ON

Biofuel: A Greenhouse Gas Reducer

Amy Harrison – Bay Area – ON

The Future of Xenotransplantation

Owen Hildebrand – Niagara – ON

Investigating the Prominence of Lake Ontario Polymer Pollution via Macroplastic Recovery

Nancy Hu – Calgary Youth – AB

Development of a Software-based Method to Predict the Binding Strength of Covid-19 Mutations

Daniel Kornlyo – Northern Vancouver Island – BC

EnviroHerp - Challenging Traditional Vivariums

Arnav Kumar – Calgary Youth – AB

Prognosing Idiopathic Pulmonary Fibrosis with Machine Learning

Christoff Lee – Calgary Youth – AB

Apoptosis: a link between atrazine and decline in Daphnia magna reproduction

Jessica Livingstone – Peterborough – ON

A Mountain of Technofossils: Is This the Hill We Want to Die On?

Andrew Mao – Toronto – ON

Rapid Detection of Concussions

Maricin Marsolais Hernandez – Thames Valley – ON

The Effect of Insulin Lispro & Sucrose on Soybean Plant Resistance to Chilling Temperatures

Éliane Masson – Réseau Technoscience – QC

La santé pour 2,8 millions

Ariane Morency – Réseau Technoscience – QC

À votre sangté!

Reza Mozaffaripour – Thames Valley – ON

Automatic Estimation of Diagnostic Biomarkers for Myocardial Infarction of Left Ventricular Tissue

Jodh Singh Nahal – Cariboo Mainline – BC

Complete Remission of Chronic Diseases & Improvement in Risk Factors: 1-Year Experimental Case Study

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Greatman Okonkwo – Niagara – ON

VICS (Visual Impairment Companion System)

Hayden Persad – West Kootenay & Boundary – BC

Development of a Pathogen Barrier Device For Use in Hands-Only CPR

Kiran Prasad – Lambton County – ON

A Study on Anxiety, Depression and Technology Use of Older Adults during the COVID-19 Pandemic

Andrew Pun – Toronto – ON

A Hands-Free Neural Network Telesurgery Robot Controlled By Active Sensor-Fusion of Video & EMG Data

Nick Qiu – Eastern Newfoundland – NL

Computational Determination of the Common Vibrational Modes Responsible for Sweetness in 14 Differen

Michaela Stillwell, Antonia Tannert – Central Interior British Columbia – BC

Straws: Impact and Solution

Graydon Strachan – Winnipeg Schools – MB

Machine Learning Based Weather Cell Temperature Prediction

Robin Yadav – South Fraser – BC

Wildfire Drone Automation Using Deep Learning

Excellence Award - Silver

Junior

Sponsor: Youth Science Canada

Medal and certificate

Amina Arif – Saskatoon – SK

Genetically Redesigned Tree Structures

Ethan Chase – Greater Vancouver – BC

Wave Energy

Nicholas Cheng, Daniel Guan – Toronto – ON

Drink Healthy with Less Bacteria

Aiyaan Faisal – Manitoba Schools Science Symposium – MB

Mea Satelles

Madeleine Galuga – Ottawa – ON

Découvertes dynamiques

Joti Gokaraju – Saskatoon – SK

Designing A New Flexible Electronic Substrate

Emily Jing – York – ON

Cover Me Treasure From Porch Pirates Arr!

Matthew Kabin – Frontenac, Lennox & Addington – ON

Fractal Encryption: Securing anything with Sierpiński triangles

Maryam Khanum – Northern British Columbia – BC

Enzyme Catalyzed Reactions

Téo L'Italien – Districts francophones du Nouveau-Brunswick – NB

Le réjuvenateur de marqueurs

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Louis Low – Bay Area – ON

Does Annoying Repetitive Sound Have an Influence on Training Effectiveness?

Krisana MacLeod – South-East New Brunswick – NB

Burning Iron - A Substitute for Carbon Based Fuels

Morgan McCourt – Bay Area – ON

Maskeria: Determining Wearing Time & Bacterial Contamination of Masks with & without Toothbrushing

Matthew Moi – Greater Vancouver – BC

Do Compostable Bags Live Up To Their Name

Tyson Neufeld – Northern British Columbia – BC

Microbial Fuel Cells for Improved Contaminated Soil Clean UP and Bio-Electricity Generation

Rowan Sutcliffe Dummitt – Peterborough – ON

Impact of Covid-19 Public Health Messaging Techniques on Adolescents

Keira Van Vliet – Calgary Youth – AB

Bioremediation of Controlled Oil Spill with Microbes

Vihaan Vashishtha – Bay Area – ON

Can We Grow Plants on Mars?

Logan Vickerson – Calgary Youth – AB

Out of the Landfill and Into the Dishwasher

Nathan Yeung – South Fraser – BC

Hyperfocus: A New Kind of Timer

Excellence Award - Silver

Intermediate

Sponsor: Youth Science Canada

Medal and certificate

Celina Casiano, Nathaniel Casiano – Manitoba Schools Science Symposium – MB

Clean Water for All: A Sustainable and Affordable Solution

Keanu Chan – East Kootenay – BC

Novel universal Design Internal Spine Concept (NuDISC)

Mitchell Clapperton – Bay Area – ON

The Creation & Optimization of a Wake Mitigation Device Using Computational Fluid Dynamics

Krish Desai – Peel – ON

Convolutional Neural Network Ophthalmoscope for Retinal Disease Detection

Ava Fischer – Simcoe County – ON

Bee Posi: Developing an app-based solution to counteract negative screen habits

Maya Honda-Granirer – Greater Vancouver – BC

Coagulation of Polyethylene Terephthalate (PET) Microplastics: Which Coagulant Works Best?

Sannjay Karthikeyan – Toronto – ON

Real-time Conversion of Sign Language to Speech using AI and Deep Learning

Ahsen Khan – Toronto – ON

Machine Learning Mars Rover

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Canada-Wide Science Fair 2021

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Jeffrey Klinck – Bay Area – ON

A Novel Innovation to Aid People with Deafness via Haptic Feedback Relative to Surroundings

Koral Kulacoglu, Ian Patrick Tan – York – ON

Cancer Detection with Optimized Neural Networks

Gabriel Lee – Greater Vancouver – BC

Tree Volt

Shayan Mahmood – Thames Valley – ON

Predicting Blood Glucose Levels in Diabetic Patients using Neural Networks

Luca Menard – Frontenac, Lennox & Addington – ON

An investigation into the potential of airfoils in producing extra propulsion for bicycles

Krish Modi – Lambton County – ON

A Novel Point Of Care Prothrombin Time Test Device

Emma Palmer – Simcoe County – ON

Silicate Solutions: Testing the Effects of Mineral Silicate Paint as an Insulation

Shaun Plassery – Peterborough – ON

Phytoremediation of Crude Oil: Effect of Rhizobium and Kelp on Soybean & Wheat under Oil Stress (v2)

Annabelle Rayson – Lambton County – ON

Munching Madness: An Innovative Analysis of Zooplankton Biomanipulation for Algae Bloom Prevention

Jasmine Schneider – Waterloo-Wellington – ON

A Protist Against Fertilizer Runoff

Augustin Tremblay – Réseau Technoscience – QC

Le facteur H en musicothérapie

Ariel White – Simcoe County – ON

Post Wildfire Forest Reboot Kit

Excellence Award - Silver

Senior

Sponsor: Youth Science Canada

Medal and certificate

Sarvnaz Ale Mohammad, Jin Schofield – York – ON

ConchShell: A Wearable ASL Translator Leveraging Novel Machine Learning and Computer Vision

Echo Chen, Harini Karthik – Bay Area – ON

Aerodynamic Performance and Structural Engineering of Helicopter Seeds for Wind Turbines (HeliSpin)

Wendy Fang – Greater Vancouver – BC

PollenGPS III: A Novel Airborne Pollen Monitoring System

Emily Goodson – Simcoe County – ON

A Novel Approach to 'Green' Energy: The Investigation of DC Voltage in Tomato Plants

Zachary Ireland – Manitoba Schools Science Symposium – MB

Theoretical Solutions to the Dangers of Nuclear Power

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Margaret Krawciw – Vancouver Island – BC

Meddling Microplastics : A Study of the Interactions of Microalgae and Microplastics

Rohan Mehta – Simcoe County – ON

UAV Natural Disaster Detection and Human Search - Eagle i

Sabrina Mogus – Bay Area – ON

ViQ: A Wearable Sonic Vibrotactile Stimulation and Cueing Device for Individuals with Parkinson's

Ali Najjar-Khatirkolaei – Réseau Technoscience – QC

Les profondeurs de l'Univers

Olivia O'Driscoll – Frontenac, Lennox & Addington – ON

A Novel Skill Assessment Method for Central Venous Catheterization

Adam Patton – Cariboo Mainline – BC

The Shapes of the Future - Increasing Electrode Efficiency in Electrolysis for Hydrogen Production

Emily Robb – Western Manitoba – MB

Grow Big or Grow Home: A Two-Year Study on Economical & Sustainable Hydroponic Yield Facilitation

Vansh Sethi – Ottawa – ON

A Novel Method to Predict TCR Constructs for Specific Disease Biomarkers using Deep Learning

Sai Shankar – Wood Buffalo – AB

Alert! – A Photosensitive Epilepsy Caution System

Julie Sieg – Toronto – ON

The relationship between sea surface temperature and phytoplankton abundance

Efe Tascioglu – Toronto – ON

Text To Braille

Alka Devi Ukrani – Waterloo-Wellington – ON

Prevention of Agrobacterium Tumor Invasion in Plants and VIR Gene Expression - Mathematical Models

Catalina van der Raadt – Calgary Youth – AB

The Effects of EGFR Mutations in Tumours on the Outcome of an Abscopal Effect

Michael Xu – Calgary Youth – AB

Multi-Agent AI System for Emergency Vehicle Preemption

Kerry Yang – Sudbury – ON

Reversal of Bacteria-driven Colon Cancer Cell Growth by Dandelion Root Extracts

Excellence Award - Gold

Junior

Sponsor: Youth Science Canada

Medal and certificate

Néomi Babineau – Districts francophones du Nouveau-Brunswick – NB

Seuil et tolérance de douleur, Gars v. Filles

Cindy Cheng – Waterloo-Wellington – ON

A Modular Multi-Functional Wound Dressing

Lauren Dorricott – Bay Area – ON

Reading Retention: Screen vs Paper

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Sophie Filion, Chloe Filion – Niagara – ON
The Automated Chicken Coop

Veronica Guo – Greater Vancouver – BC
A Novel Approach to Decomposing Polystyrene

Julian Hall – Waterloo-Wellington – ON
Meow!! Analysis of the Benefits of the Feline Laser Toy

Cooper LeSavage – Bluewater – ON
A Helping Hand

Nolan McKay – Calgary Youth – AB
Programming to Engage - The Creation Process of Making an Educational Video Game

Justin Peng – Greater Vancouver – BC
CoroShield: A Physical Distancing Evaluator for the Visually Impaired

Shreya Plassery – Peterborough – ON
Unlocking the Legacy: Can Mycorrhizae and Spent Mushroom Substrate activate Legacy Phosphorus?

Excellence Award - Gold

Intermediate

Sponsor: Youth Science Canada
Medal and certificate

Hassan Ahmad – South Fraser – BC
Smart Sight ... A Vision of Hope

Mac Dykeman – 4-H Canada – 4H
An Innovative Approach to Reducing Biosecurity in Hatching

Silas Eastwood – Halifax – NS
Revolution Evolution: The Design Evolution of a Space Qualified Reaction Wheel

Calvin Karthik – Peterborough – ON
A Mighty Mushroom and the Power of Poop : Testing Biogas Production using Spent Mushroom Substrate Phase 2

Paul Lee – Bay Area – ON
Development of a 3D Cursor for Robotic Arm Programming Optimization

Ishan Leung – South Fraser – BC
Stuck In The Middle With You: A Project on Crossing The Midline

Artash Nath – Toronto – ON
The Silence of Canadian Cities: Seismic Impact of COVID-19 Lockdowns

Patricia Rea – York – ON
BioGrade Yeast: Protecting Martian Biofactories with a Novel cfAFP-501-CcMreB Polymer

Hardit Singh – Waterloo-Wellington – ON
Specular: A Comprehensive Teleophthalmology Platform for People Centered Eyecare

Henry Zhao – Greater Vancouver – BC
Quadruped Robot with Rough Terrain Traversal

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Excellence Award - Gold

Senior

Sponsor: Youth Science Canada

Medal and certificate

Timothy Cai – South Fraser – BC

An Investigation into Active Control for Accessible Orbital Flight

Ethan Chan – Greater Vancouver – BC

Spinal Solution: Developing an electronic device to detect cerebrospinal fluid in the emergency room

Carlynn Davidson – Winnipeg Schools – MB

Examining the Correlation Between Extracellular Vesicles and Aging

Catherine Diyakonov – Greater Vancouver – BC

Battling Oxidative Stress: The Effects of Nano-Antioxidants on Oxidizing Agent Exposure

Allison Engo – Réseau Technoscience – QC

Saved on the Fly

Gavin Howells – Yukon Stikine – YT

A Novel Evaluation of the Mutagenicity of E-cigarette Liquid and Vapour on Yeast Cells

Raphael Kelly – Edmonton – AB

A Vector-Field Based Tool for Avian Mobility in Patchy Mechanistic Models of Early Pathogenic Spread

Taya Lee – Vancouver Island – BC

Recycling Oil From Contaminated Water Using Azolla filiculoides to Create a Biodiesel Blend

Neil Mitra – Waterloo-Wellington – ON

A Graphene Oxide Paper Microfluidic Device for Heart Attacks

Avery Parkinson – Ottawa – ON

Lab to Table: A differential gene expression analysis of RNA-sequenced bovine stem cells & myocytes

Challenge Award - Agriculture, Fisheries and Food

Junior

Sponsor: Youth Science Canada

Certificate

Sophie Filion, Chloe Filion – Niagara – ON

The Automated Chicken Coop

Challenge Award - Agriculture, Fisheries and Food

Intermediate

Sponsor: Youth Science Canada

Certificate

Mac Dykeman – 4-H Canada – 4H

An Innovative Approach to Reducing Biosecurity in Hatching

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Challenge Award - Agriculture, Fisheries and Food

Senior

Sponsor: Youth Science Canada

Certificate

Avery Parkinson – Ottawa – ON

Lab to Table: A differential gene expression analysis of RNA-sequenced bovine stem cells & myocytes

Challenge Award - Curiosity and Ingenuity

Junior

Sponsor: Youth Science Canada

Certificate

Julian Hall – Waterloo-Wellington – ON

Meow!! Analysis of the Benefits of the Feline Laser Toy

Challenge Award - Curiosity and Ingenuity

Intermediate

Sponsor: Youth Science Canada

Certificate

Patricia Rea – York – ON

BioGrade Yeast: Protecting Martian Biofactories with a Novel cfAFP-501-CcMreB Polymer

Challenge Award - Curiosity and Ingenuity

Senior

Sponsor: Youth Science Canada

Certificate

Timothy Cai – South Fraser – BC

An Investigation into Active Control for Accessible Orbital Flight

Challenge Award - Digital Technology

Junior

Sponsor: Youth Science Canada

Certificate

Justin Peng – Greater Vancouver – BC

CoroShield: A Physical Distancing Evaluator for the Visually Impaired

Challenge Award - Digital Technology

Intermediate

Sponsor: Youth Science Canada

Certificate

Paul Lee – Bay Area – ON

Development of a 3D Cursor for Robotic Arm Programming Optimization

Challenge Award - Digital Technology

Senior

Sponsor: Youth Science Canada

Certificate

Olivia O'Driscoll – Frontenac, Lennox & Addington – ON

A Novel Skill Assessment Method for Central Venous Catheterization

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Challenge Award - Disease and Illness

Junior

Sponsor: Youth Science Canada
Certificate

Cindy Cheng – Waterloo-Wellington – ON
A Modular Multi-Functional Wound Dressing

Challenge Award - Disease and Illness

Intermediate

Sponsor: Youth Science Canada
Certificate

Hardit Singh – Waterloo-Wellington – ON
Speculor: A Comprehensive Teleophthalmology Platform for People Centered Eyecare

Challenge Award - Disease and Illness

Senior

Sponsor: Youth Science Canada
Certificate

Neil Mitra – Waterloo-Wellington – ON
A Graphene Oxide Paper Microfluidic Device for Heart Attacks

Challenge Award - Energy

Junior

Sponsor: Youth Science Canada
Certificate

Tyson Neufeld – Northern British Columbia – BC
Microbial Fuel Cells for Improved Contaminated Soil Clean UP and Bio-Electricity Generation

Challenge Award - Energy

Intermediate

Sponsor: Youth Science Canada
Certificate

Calvin Karthik – Peterborough – ON
A Mighty Mushroom and the Power of Poop : Testing Biogas Production using Spent Mushroom Substrate Phase 2

Challenge Award - Energy

Senior

Sponsor: Youth Science Canada
Certificate

Emily Goodson – Simcoe County – ON
A Novel Approach to 'Green' Energy: The Investigation of DC Voltage in Tomato Plants

Challenge Award - Environment and Climate Change

Junior

Sponsor: Youth Science Canada
Certificate

Veronica Guo – Greater Vancouver – BC
A Novel Approach to Decomposing Polystyrene

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Challenge Award - Environment and Climate Change

Intermediate

Sponsor: Youth Science Canada
Certificate

Emma Palmer – Simcoe County – ON

Silicate Solutions: Testing the Effects of Mineral Silicate Paint as an Insulation

Challenge Award - Environment and Climate Change

Senior

Sponsor: Youth Science Canada
Certificate

Taya Lee – Vancouver Island – BC

Recycling Oil From Contaminated Water Using Azolla filiculoides to Create a Biodiesel Blend

Challenge Award - Health and Wellness

Junior

Sponsor: Youth Science Canada
Certificate

Lauren Dorricott – Bay Area – ON

Reading Retention: Screen vs Paper

Challenge Award - Health and Wellness

Intermediate

Sponsor: Youth Science Canada
Certificate

Keanu Chan – East Kootenay – BC

Novel universal Design Internal Spine Concept (NuDISC)

Challenge Award - Health and Wellness

Senior

Sponsor: Youth Science Canada
Certificate

Allison Engo – Réseau Technoscience – QC

Saved on the Fly

Challenge Award - Natural Resources

Junior

Sponsor: Youth Science Canada
Certificate

Logan Vickerson – Calgary Youth – AB

Out of the Landfill and Into the Dishwasher

Challenge Award - Natural Resources

Intermediate

Sponsor: Youth Science Canada
Certificate

Shaun Plassery – Peterborough – ON

Phytoremediation of Crude Oil: Effect of Rhizobium and Kelp on Soybean & Wheat under Oil Stress (v2)

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Challenge Award - Natural Resources

Senior

Sponsor: Youth Science Canada
Certificate

Jessica Livingstone – Peterborough – ON
A Mountain of Technofossils: Is This the Hill We Want to Die On?

Youth Can Innovate Award

Junior

Sponsor: The Gwyn Morgan and Patricia Trottier Foundation
\$500 cash, presentation award and certificate

Sophie Filion, Chloe Filion – Niagara – ON
The Automated Chicken Coop

Madeleine Galuga – Ottawa – ON
Découvertes dynamiques

Cooper LeSauvage – Bluewater – ON
A Helping Hand

Shreya Plassery – Peterborough – ON
Unlocking the Legacy: Can Mycorrhizae and Spent Mushroom Substrate activate Legacy Phosphorus?

Youth Can Innovate Award

Intermediate

Sponsor: The Gwyn Morgan and Patricia Trottier Foundation
\$750 cash, presentation award and a certificate

Mac Dykeman – 4-H Canada – 4H
An Innovative Approach to Reducing Biosecurity in Hatching

Paul Lee – Bay Area – ON
Development of a 3D Cursor for Robotic Arm Programming Optimization

Hardit Singh – Waterloo-Wellington – ON
Specular: A Comprehensive Teleophthalmology Platform for People Centered Eyecare

Henry Zhao – Greater Vancouver – BC
Quadruped Robot with Rough Terrain Traversal

Youth Can Innovate Award

Senior

Sponsor: The Gwyn Morgan and Patricia Trottier Foundation
\$1,000 cash, presentation award and a certificate

Timothy Cai – South Fraser – BC
An Investigation into Active Control for Accessible Orbital Flight

Ethan Chan – Greater Vancouver – BC
Spinal Solution: Developing an electronic device to detect cerebrospinal fluid in the emergency room

Rohan Mehta – Simcoe County – ON
UAV Natural Disaster Detection and Human Search - Eagle i

Neil Mitra – Waterloo-Wellington – ON
A Graphene Oxide Paper Microfluidic Device for Heart Attacks

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Sabrina Mogus – Bay Area – ON

ViQ: A Wearable Sonic Vibrotactile Stimulation and Cueing Device for Individuals with Parkinson's

Olivia O'Driscoll – Frontenac, Lennox & Addington – ON

A Novel Skill Assessment Method for Central Venous Catheterization

Vansh Sethi – Ottawa – ON

A Novel Method to Predict TCR Constructs for Specific Disease Biomarkers using Deep Learning

Sai Shankar – Wood Buffalo – AB

Alert! – A Photosensitive Epilepsy Caution System

Youth Can Innovate Award

Senior

Sponsor: The Gwyn Morgan and Patricia Trottier Foundation

An additional \$7,000 cash award and certificate

Timothy Cai – South Fraser – BC

An Investigation into Active Control for Accessible Orbital Flight

Ethan Chan – Greater Vancouver – BC

Spinal Solution: Developing an electronic device to detect cerebrospinal fluid in the emergency room

Neil Mitra – Waterloo-Wellington – ON

A Graphene Oxide Paper Microfluidic Device for Heart Attacks

Sabrina Mogus – Bay Area – ON

ViQ: A Wearable Sonic Vibrotactile Stimulation and Cueing Device for Individuals with Parkinson's

Platinum Award - Discovery

Junior

Sponsor: Youth Science Canada

Crystal award

Shreya Plassery – Peterborough – ON

Unlocking the Legacy: Can Mycorrhizae and Spent Mushroom Substrate activate Legacy Phosphorus?

Platinum Award - Discovery

Senior

Sponsor: Youth Science Canada

Crystal award

Allison Engo – Réseau Technoscience – QC

Saved on the Fly

Platinum Award - Innovation

Junior

Sponsor: Youth Science Canada

Crystal award

Sophie Filion, Chloe Filion – Niagara – ON

The Automated Chicken Coop

Award Recipients

Canada-Wide Science Fair 2021

Virtual – Ottawa, Ontario



Platinum Award - Innovation

Senior

Sponsor: Youth Science Canada
Crystal award

Timothy Cai – South Fraser – BC

An Investigation into Active Control for Accessible Orbital Flight

Best Project Award - Discovery

Intermediate

Sponsor: Youth Science Canada
Crystal award

Calvin Karthik – Peterborough – ON

A Mighty Mushroom and the Power of Poop : Testing Biogas Production using Spent Mushroom Substrate Phase 2

Best Project Award - Innovation

Intermediate

Sponsor: Youth Science Canada
Crystal award

Hardit Singh – Waterloo-Wellington – ON

Specular: A Comprehensive Teleophthalmology Platform for People Centered Eyecare