



Republic of the Philippines  
**Department of Education**  
 NATIONAL CAPITAL REGION

**REGIONAL MEMORANDUM**

**ORD-2024-** 484

**TO :** SCHOOLS DIVISION SUPERINTENDENTS

**FROM :** **JOCELYN DR ANDAYA**  
 Director IV *Joy*

**SUBJECT :** WINNERS IN THE 2024 NATIONAL SCIENCE AND TECHNOLOGY FAIR

**DATE :** APRIL 23, 2024

1. This is in reference to the attached Memorandum dated April 16, 2024, from Alma Ruby C. Torio, Assistant Secretary, Officer-in-Charge, Office of the Undersecretary for Curriculum and Teaching, relative to the conduct of the above captioned subject for information and appropriate action.

2. Immediate dissemination of this memorandum is desired.

CLMD/mgp



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Republic of the Philippines

## Department of Education

OFFICE OF THE UNDERSECRETARY FOR CURRICULUM AND TEACHING

### MEMORANDUM

DM-CT-2024-102

TO : **MINISTER, MBHTE-BARMM  
REGIONAL DIRECTORS**

FROM : **ALMA RUBY C. TORIO**  
Assistant Secretary  
Officer-in-Charge  
Office of the Undersecretary for Curriculum and Teaching

SUBJECT : **WINNERS IN THE 2024 NATIONAL SCIENCE AND  
TECHNOLOGY FAIR**

DATE : April 16, 2024

This Office announces the winners of the various competitions of the 2024 National Science and Technology Fair (NSTF) held last April 1-5, 2024 at Sequioa Hotel-Manila Bay, Parañaque City. Appreciation is likewise accorded to all the other entries and their research adviser-coaches. Their active participation and support contributed to the successful holding of this activity.

**Best Regional SHOUTOUT: Region XII**

**Best POSTER: Cordillera Administrative Region (CAR)**

#### Life Science- Individual

Title of Research Project	Proponent	School	Region	Coach
<b>Three Best Projects</b>				
Treatment Ratios of <i>Beauveria bassiana</i> Fungus Against Coconut Leaf Beetle ( <i>Brontispa longissimi</i> ): In-Vitro Evaluation of Mycosis for Biocontrol	Shea-J Gomez	F. Mandaue City Science High School	VII	Erlinda A.Parba
Alpha-Amylase Inhibitory Activity of <i>Singkamas</i> ( <i>Pachyrhizus erosus</i> ) Against Diabetes: In Vitro and In Silico Docking Analyses	Ellen Mae Bayalas	Davao City National High School	XI	Dr. Sherwin S. Fortugaliza



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Anticancer Potential of Molave ( <i>Vitex parviflora</i> Juss.) Crude Leaf Ethanolic Extract Against Lung Cancer Cells (A549 and GL01)	Josiah Christopher Q. Cruz	Quezon City Science High School	NCR	Earl Francis C. Merilles
<b>Best Presenter</b>				
Treatment Ratios of <i>Beauveria bassiana</i> Fungus Against Coconut Leaf Beetle ( <i>Brontispa longissima</i> ): In-Vitro Evaluation of Mycosis for Biocontrol	Shea-J F. Gomez	Mandaue City Science High School	VII	Erlinda A. Parba
<b>Best Poster Display</b>				
Anticancer Potential of Molave ( <i>Vitex parviflora</i> Juss.) Crude Leaf Ethanolic Extract Against Lung Cancer Cells (A549 and GL01)	Josiah Christopher Q. Cruz	Quezon City Science High School	NCR	Earl Francis C. Merilles

### Life Science- Team

Title of Research Project	Proponents	School	Region	Coach
<b>Three Best Projects</b>				
In silico and in vitro Evaluation of Embryogenesis Inhibition Activity of Ethanolic Extracts of Chico ( <i>Manilkara zapota</i> ) Bark Against Gastrointestinal Strongyle Eggs	Michaela Ria C. Rentuza Mikaella Rose Emereene D. Macabata Wesly N. Secuya	Cebu City National Science High School	VII	Reuth Thessalonica C. De La Victoria
Herbicidal Effects of Rice Straw Extract ( <i>Oryza sativa</i> L.) on the Seedling Viability of Itchgrass ( <i>Rottboellia cochinchinensis</i> )	Alyanna Marie S. Iliw-Iliw Lucia Faye T. Tagupa Mark Jared V. Teng	Quezon City Science High School	NCR	Earl Francis C. Merilles
Cytotoxic Activity of Heat-Mediated Green-Synthesized Silver Nanoparticles from Cacao	James Micheaus A. Cabrera	Davao City National High School	XI	Dr. Sherwin S. Fortugaliza

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(Theobroma cacao L.) Pod Husks Ethanol Extract Against A549 Human Lung Adenocarcinoma	Alfonso Cassiel S. Casia  John Venice Rodmoore D. Javier			
<b>Best Presenter</b>				
In silico and in vitro Evaluation of Embryogenesis Inhibition Activity of Ethanolic Extracts of Chico (Manilkara zapota) Bark Against Gastrointestinal Strongyle Eggs	Michaela Ria C. Rentuza  Mikaella Rose Emercene D. Macabata  Wesly N. Secuya	Cebu City National Science High School	VII	Reuth Thessalonica C. De La Victoria
<b>Best Poster Display</b>				
Herbicidal Effects of Rice Straw Extract (Oryza sativa L.) on the Seedling Viability of Itchgrass (Rottboellia cochinchinensis)	Alyanna Marie S. Iliw-Iliw  Lucia Faye T. Tagupa  Mark Jared V. Teng	Quezon City Science High School	NCR	Earl Francis C. Merilles

### Mathematics and Computational Science - Individual

Title of Research Project	Proponent	School	Region	Coach
<b>Three Best Projects</b>				
Mathematical Model of Rice Production in the Province of Nueva Vizcaya	John Lester Collado Laureta	Murong National High School	II	Dr. Deo Pasion Urbano
Flood Mitigation of Tarlac City through 3D Simulation of Groundwater Discharge to Flood Inundation using Rainfall Prediction and Integration of Spatio-Temporal GIS in Hydrodynamic Models	Arnon Yzabel G. Guinto	Tarlac National High School	III	Nica Joyce P. Aquino
Geometry of Taxicab Parabolas Identifying the Relationship between the Latus Rectum-Focal	Leandro S. Asunan	Valenzuela City School of Mathematics and Science	NCR	Dioscorro G. Lumogdang III

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Distance Ratio and Directrix in Non-slant Parabolas				
<b>Best Presenter</b>				
Flood Mitigation of Tarlac City through 3D Simulation of Groundwater Discharge to Flood Inundation using Rainfall Prediction and Integration of Spatio-Temporal GIS in Hydrodynamic Models	Arnon Yzabel G. Guinto	Tarlac National High School	III	Nica Joyce P. Aquino
<b>Best Poster Display</b>				
Development of Machine Learning Predicting Model on Physico-Chemical Environmental Preferences of Breeding Mosquitoes	Maria Isabelle A. Ubas	Daniel R. Aguinaldo National High School	XI	Paulo D. Prudente

**Mathematics and Computational Science - Team**

Title of Research Project	Proponents	School	Region	Coach
<b>Three Best Projects</b>				
Crystallographic Patterns & Where to Find Them: Demathifying the Isometries of Hooked Skein Loops	Vern Einjhel Faith Alovera  Katrina D. Garcia  Juan Miguelito S. Mallari	Maliwalo National High School	III	Khimberly T. Del Mar
Spatial Modelling on Suitable Areas for Shallow Tube Well (STW) in the Province of Dinagat Islands: A GIS Approach	Kurt Lawrence B. Cuaton  Ehdraembraht H. Castro  Kriscel Mael J. Rollo	Don Ruben E. Ecleo Sr. Memorial National High School	CARAGA	Engr. Doreina L. Lawangon
LUMOS: Lighting Using Mathematical Optimization System in Non-Reflective Cuboid	Kyle Christian M. Cloma  Matthew Allan S. Fernandez	City of Mandaluyong Science High School	NCR	Mr. John Francis S. Cultura



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Rooms with Upright Objects	Wyndle Wyne R. Calansingin			
<b>Best Presenter</b>				
Crystallographic Patterns & Where to Find Them: Demathifying the Isometries of Hooked Skein Loops	Vern Einjhel Faith Alovera  Katrina D. Garcia  Juan Miguelito S. Mallari	Maliwalo National High School	III	Khimberly T. Del Mar
<b>Best Poster Display</b>				
Spatial Modelling on Suitable Areas for Shallow Tube Well (STW) in the Province of Dinagat Islands: A GIS Approach	Kurt Lawrence B. Cuaton  Ehdraembraht H. Castro  Kriscel Mael J. Rollo	Don Ruben E. Ecleo Sr. Memorial NHS	CARAGA	Engr. Doreina L. Lawangon

### Physical Science-Individual

Title of Research Project	Proponent	School	Region	Coach
<b>Three Best Projects</b>				
Optimizing the Catalyst Type, Catalyst Concentration, and Methanol-To-Oil Ratio in Darak (Rice Bran) Oil Extracts Transesterification for Maximum Biodiesel Yield	Christian Paul B. Palacio	Mandaue City Science High School	VII	Noelyn Marie P. Navarro
Development and Characterization of Reinforced Composite Assembly of Cathode and Anode Materials Derived from Musa textilis (Abaca) Fibers and Carbonized Perna viridis (Green Mussel) Shells for Optimizing Energy Electrode Performance	Fritzter Villas Tamayo	Bansud National High School – Regional Science High School for MIMAROPA	IV-B MIMAROPA	Lorie E. Malaluan
DrainTrash: Wastewater Treatment Through Waste Separator and Water Filtration	Kent Sandy A. Daniel	Gusa Regional Science High School	X	Engr. Shoji-an D. Daradal



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Prototype for Water Conservation in Drainage System				
<b>Best Presenter</b>				
Optimizing the Catalyst Type, Catalyst Concentration, and Methanol-To-Oil Ratio in Darak (Rice Bran) Oil Extracts Transesterification for Maximum Biodiesel Yield	Christian Paul B. Palacio	Mandaue City Science High School	VII	Noelyn Marie P. Navarro
<b>Best Poster Display</b>				
DrainTrash: Wastewater Treatment Through Waste Separator and Water Filtration Prototype for Water Conservation in Drainage System	Kent Sandy A. Daniel	Gusa Regional Science High School	X	Engr. Shoji-an D. Daradal

**Physical Science-Team**

Title of Research Project	Proponents	School	Region	Coach
<b>Three Best Projects</b>				
TubIGen: Eco-Friendly Self-Propelled Water Irrigation Pump Generator	Sharon Joy C. Bañares Marc Andre Nicolas M. Callueng Christian Mike A. Yu	Tuguegarao City National High School	II	Juvis Gem A. Dela Cruz Maria Loresa J. Tumanguil
In Vitro Study of Bioceramics from Bamboo (Bambusa blumeana) Leaves and Green Mussel (Perma viridis) Shells with Silver (Ag) Coating and 3D Printing Applications for Bone Regeneration	Frances Gabrielle Stapp Bingcang Hart Gabrielle Tumali Ong Jessica Loreen Lee Yabut	Angeles City Science High School	III	Lolita G. Bautista
Novel Microplastic Sequestration from Calajunan Creek, Iloilo, Philippines Utilizing	Ces Akira P. Labordo Mikhaela Sophia B. Harder	Iloilo National High School	VI	Gemma Jotea



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Sago-Derived Absorbent Matrixes	Geney Therese Lynn C. Condino			
<b>Best Presenter</b>				
In Vitro Study of Bioceramics from Bamboo ( <i>Bambusa blumeana</i> ) Leaves and Green Mussel ( <i>Perma viridis</i> ) Shells with Silver (Ag) Coating and 3D Printing Applications for Bone Regeneration	Frances Gabrielle Stapp Bingcang  Hart Gabrielle Tumali Ong  Jessica Loreen Lee Yabut	Angeles City Science High School	III	Lolita G. Bautista
<b>Best Poster Display</b>				
In Vitro Study of Bioceramics from Bamboo ( <i>Bambusa blumeana</i> ) Leaves and Green Mussel ( <i>Perma viridis</i> ) Shells with Silver (Ag) Coating and 3D Printing Applications for Bone Regeneration	Frances Gabrielle Stapp Bingcang  Hart Gabrielle Tumali Ong  Jessica Loreen Lee Yabut	Angeles City Science High School	III	Lolita G. Bautista

**Robotics and Intelligent Machines-Individual**

Title of Research Project	Proponent	School	Region	Coach
<b>Three Best Projects</b>				
Mark-It: An IoT-Based Agricultural Monitoring and Inventory Management System for Clustered Small-Scale Farms	Aleen Leigh Doromal Pe	Palawan National School	IV- B MIMAROPA	John Lemuel J. Noche
Enhanced Crop Disease Symptom Detection in Corn ( <i>Zea mays</i> ) Using Drone Aerial Imagery and AI for Symptom Mapping	Karl Gian Salvame Abellana	Mandaue City Science High School	VII	Pamela S. Perez
Arduino-Based Autonomous Navigation to Detect Solid Metals for Ground Contamination Recovery (ANDAR)	Angelica A. Prellegera	Quezon City Science High School	NCR	Earl Francis Merilles
<b>Best Presenter</b>				
Arduino-Based Autonomous Navigation to Detect Solid Metals for Ground Contamination Recovery (ANDAR)	Angelica A. Prellegera	Quezon City Science High School	NCR	Earl Francis Merilles

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<b>Best Poster Display</b>				
Arduino-Based Autonomous Navigation to Detect Solid Metals for Ground Contamination Recovery (ANDAR)	Angelica A. Prellegera	Quezon City Science High School	NCR	Earl Francis Merilles

**Robotics and Intelligent Machines-Team**

Title of Research Project	Proponents	School	Region	Coach
<b>Three Best Projects</b>				
LI-DET: Life Under Rubble Detector With IoT Capabilities	Thyronjay Palazo Hugh Spence Sas Ram Allen Ranches	Alaminos City National High School	I	Kris Cristopher C. Dela Cruz
AGRIGENT: Enhancing Greenhouse Agriculture with IoT (Internet of Things)-Enabled Automated Irrigation and Rainwater Harvesting System for Improved Crop Growth and Water Efficiency	Analie Ruiz Pedrano Rose Feth Fernan Catadman Andrei Miguel Flores Reformina	City of Bogo Senior High School	VII	Kent Jasper C. Ytang
ISDORAGE: Smart Storage Technology to Prevent Post-Harvest Fish Spoilage	Mier Athena N. Tequin Elvie May P. Mara Christian Wyne D. Nacua	Daniel R. Aguinaldo National High School	XI	Julius V. Robles
<b>Best Presenter</b>				
TINGKEP (Terrain-specific Integrated Nursery for Germination and Kinetic Environment Preservation): A Seed Germination Chamber	Libby Jaime Bartolo Lustan	Palawan National School	IV-B MIMAROPA	John Lemuel J. Noche Josefhierre C. Palay



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for Underutilized Indigenous Fruits of Palawan	Aldie Josh Heaver Tadeos Palma  Zsharif Corro Ropeta			
<b>Best Poster Display</b>				
SPARBAPSS: Solar-Powered Arduino-Based Autonomous Precision Seeding System for Zea mays (Corn)	Rajin Fritz F. Arma  Andre Paul C. Labasbas  Adrian A. Masamoc	Calbayog City National High School	VIII	Robert Anthony F. Ygrubay

### Science Innovation Expo-Individual

Title of Research Project	Proponent	School	Region	Coach
<b>Three Best Projects</b>				
Mango ( <i>Mangifera indica</i> ) Peels, Corn ( <i>Zea mays</i> ) Husk, and Peanut ( <i>Arachis hypogaea</i> ) Shells as Torrefied Lignocellulosic Biomass for Solid Combustible Charcoals	Rafael Lorenzo L. Ortiz	Calamba City Science Integrated School	IV- A CALABARZON	Rowena L. Acosta
STARBRITE: Human Hair as Thermal Insulator	Cassandra Bagolor	Davao City National High School	XI	Joshua Ymmanuelle C. Getigan
DASCA: Enabling Connection-A Specialized Augmentative Alternative Communication (AAC) Application for Breaking Language and Speech Communication Barriers among Filipino Citizens	Kylie Q. Cruz	Navotas National Science High School	NCR	Karl Erniell D. Arambulo
<b>Best Presenters</b>				
Mango ( <i>Mangifera indica</i> ) Peels, Corn ( <i>Zea mays</i> ) Husk, and	Rafael Lorenzo L. Ortiz	Calamba City Science	IV- A CALABARZON	Rowena L. Acosta

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Peanut (Arachis hypogaea) Shells as Torrefied Lignocellulosic Biomass for Solid Combustible Charcoals		Integrated School		
Project C.A.R. (Centralized/Cloud-based App Reserved) Parking System using IoT	Jalen Mhir Tibayan Inciong	Oriental Mindoro National High School	IV- B MIMAROPA	Aldrin F. Ramilo Arlan E. Bolasco
<b>Best Poster Display</b>				
DASCA: Enabling Connection-A Specialized Augmentative Alternative Communication (AAC) Application for Breaking Language and Speech Communication Barriers among Filipino Citizens	Kylie Q. Cruz	Navotas National Science High School	NCR	Karl Erniell D. Arambulo

**Science Innovation Expo-Team**

Title of Research Project	Proponents	School	Region	Coach
<b>Three Best Projects</b>				
A.S.L.G. (Assistive Sign Language Gloves): An Innovative Hand Movement Transcriber Integrated with Mobile App for Verbal Communication and Language Translation	Yashryll Hauleen R. Cetro Princess Mae F. Catibayan Ma. Sophia T. Hernandez	Cavite Science Integrated School	IV-A CALABARZON	Elain E. Malones
LAMIX: Solar-Powered Automated Winemaking System for Local Nipa ( <i>Nypa fruticans</i> ) Wine Makers	James Gabriel A. Regondola Frances Therese N. Rito Jomar E. Abante	Vinzons Pilot High School	V	Jason N. Barg Engr. Lorenzo Q. Fuentes
H.A.N.G.I.N.: Hybrid Air Notification Gradient through IoT-based Network	Jm R. Carpio	Acelo Badelles Sr. Memorial High School	X	Josevi D. Macas



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	Christian Jonaby A. Maglangit			
	Angel Rose P. Nala			
<b>Best Presenter</b>				
A.S.L.G. (Assistive Sign Language Gloves): An Innovative Hand Movement Transcriber Integrated with Mobile App for Verbal Communication and Language Translation	Yashryll Haulen R. Cetro  Princess Mae F. Catibayan  Ma. Sophia T. Hernandez	Cavite Science Integrated School	IV-A CALABARZON	Elain E. Malones
<b>Best Poster Display</b>				
Pendulum Switch Earthquake Alarm System (PSEAS)	Nicole B. Birj  Georgina Pearl S. Caw-it  Sandro F. Davila	Dolores National High School	VIII	Shaira T. Linalcoso

### Eight (8) Best Projects

Title of Research Project	Proponent/s	School	Region	Coach
Anticancer Potential of Molave ( <i>Vitex parviflora</i> Juss.) Crude Leaf Ethanolic Extract Against Lung Cancer Cells (A549 and GL01)	Josiah Christopher Q. Cruz	Quezon City Science High School	NCR	Earl Francis C. Merilles
In silico and in vitro Evaluation of Embryogenesis Inhibition Activity of Ethanolic Extracts of Chico ( <i>Manilkara zapota</i> ) Bark Against Gastrointestinal Strongyle Eggs	Michaela Ria C. Rentuza  Mikaella Rose Emereene D. Macabata  Wesly N. Secuya	Cebu City National Science High School	VII	Reuth Thessalonica C. De La Victoria
Optimizing the Catalyst Type, Catalyst Concentration, and Methanol-To-Oil Ratio	Christian Paul B. Palacio	Mandaue City Science	VII	Noelyn Marie P. Navarro



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in Darak (Rice Bran) Oil Extracts Transesterification for Maximum Biodiesel Yield		High School		
In Vitro Study of Bioceramics from Bamboo ( <i>Bambusa blumeana</i> ) Leaves and Green Mussel ( <i>Perma viridis</i> ) Shells with Silver (Ag) Coating and 3D Printing Applications for Bone Regeneration	Frances Gabrielle Stapp Bingcang  Hart Gabrielle Tumali Ong  Jessica Loreen Lee Yabut	Angeles City Science High School	III	Lolita G. Bautista
Enhanced Crop Disease Symptom Detection in Corn ( <i>Zea mays</i> ) Using Drone Aerial Imagery and AI for Symptom Mapping	Karl Gian Salvame Abellana	Mandaue City Science High School	VII	Pamela S. Perez
AGRIGENT: Enhancing Greenhouse Agriculture with IoT (Internet of Things)-Enabled Automated Irrigation and Rainwater Harvesting System for Improved Crop Growth and Water Efficiency	Analie Ruiz Pedrano  Rose Feth Fernan Catadman  Andrei Miguel Flores Reformina	City of Bogo Senior High School	VII	Kent Jasper C. Ytang
Flood Mitigation of Tarlac City through 3D Simulation of Groundwater Discharge to Flood Inundation using Rainfall Prediction and Integration of Spatio-Temporal GIS in Hydrodynamic Models	Arnon Yzabel G. Guinto	Tarlac National High School	III	Nica Joyce P. Aquino
Spatial Modelling on Suitable Areas for Shallow Tube Well (STW) in the Province of Dinagat Islands: A GIS Approach	Kurt Lawrence B. Cuaton  Ehdraembraht H. Castro  Kriscel Mael J. Rollo	Don Ruben E. Ecleo Sr. Memorial National High School	CARAGA	Engr. Doreina L. Lawangon

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The Department congratulates the national winners and acknowledges the full support of all the participating regions, schools division offices, and schools, as well as the cooperation of school heads, supervisors, and regional directors for the successful conduct of the competition.

Immediate dissemination of this memorandum is directed.



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