



Republic of the Philippines  
**Department of Education**  
 REGION I  
 SCHOOLS DIVISION OF VIGAN CITY

**Office of the Schools Division Superintendent**

**DIVISION MEMORANDUM**

No. 146 s. 2025

**TEACHER-OBSERVERS FOR THE 2025 REGIONAL SCIENCE  
 AND TECHNOLOGY FAIR (RSTF)**

To: Assistant Schools Division Superintendent  
 Chief Education Supervisors (CID & SGOD)  
 Public Secondary School Heads  
 All Others Concerned

1. In reference to Regional Memorandum No. 1649, s. 2025, regarding the conduct of the 2025 Regional Science and Technology Fair (RSTF) on December 5-6, 2025 at the National Educators Academy of the Philippines – Region I (NEAP-R1), San Vicente, City of San Fernando, La Union, this Office advises the identified teacher-observers to attend the said activity

2. The following teachers have been identified and designated as observers:

Name	Position	School
1. Jefferson R. Gannaban	Master Teacher I	ISNHS
2. Regina A. Llagas	Master Teacher I	ISNHS
3. Kniethel R. Rabara	Special Science Teacher I	ISNHS
4. Monette A. Refuerzo	Master Teacher II	VNHSW
5. Jefferson R. Borillo	Teacher II	VNHSE

3. The participants are expected to be at the venue on December 6, 2025 to observe the project display posters as well as the oral defenses in order to gather insights, best practices, and relevant information that may guide them in future research engagements in their classes.

4. Corresponding service credits shall be granted to the teacher-observers in accordance with the provisions of DepEd Order No. 53, s. 2003.

5. The meals, travel and incidental expenses of the teacher-observers shall be charged against local funds and other sources subject to the usual accounting and auditing procedures.



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6. This memorandum shall serve as Authority to Travel of the participants.
7. Attached is Regional Memorandum No. 1649, s. 2025 for you reference.
8. For information and dissemination.

*Vilma D. Eda*  
**VILMA D. EDA, CESO V** *12. 2. 25*  
Schools Division Superintendent

Encls: As stated

References:

RM 1174, s. 2025

DM 666, s. 2025

To be indicated in the Perpetual Index  
Under the following subjects:

CONTESTS  
SCIENCE

INNOVATION  
RESEARCH

MATHEMATICS  
ROBOTICS



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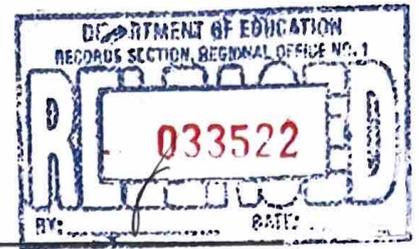
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Republic of the Philippines  
**Department of Education**  
REGION I



**REGIONAL MEMORANDUM**

No. 649 s. 2025

DEC 01 2025

**QUALIFIED INVESTIGATORY PROJECTS FOR THE 2025 REGIONAL SCIENCE AND TECHNOLOGY FAIR (RSTF)**

To: Schools Division Superintendents  
All Others Concerned

1. The Department of Education Regional Office 1 (DepEd RO1) through the Curriculum and Learning Management Division (CLMD) announces the following list of qualified Investigatory Projects with their Project-Titles, Researchers, Advisers, Schools and Schools Division Offices (SDOs) for the 2025 Regional Science and Technology Fair (RSTF) to be held on December 5-6, 2025 at the National Educators Academy of the Philippines-Region 1 (NEAP-R1), San Vicente, City of San Fernando, La Union:

**Life Science (Individual)**

Code Number	Title	Researcher/Adviser	School/SDO
LS-I-01	Development Evaluation of a Banana Stalk-Based Fertilizer in Comparison to Commercialized Naphthalene Acetic Acid on Adventitious Root Formation and Physiological Responses in Grafted Rambutan	Leobert Aaron J. Miranda Mr. Jayson D. Adena	San Nicolas National High School, Ilocos Norte
LS-I-02	Magneto-Microgravity Seed Priming Techniques via Static Magnetic Fields and 2D Cunorotation for Enhanced Rice Yield	Adrian Azada Rowel Lucina	Regional Science High School for Region I, La Union
LS-I-03	Algascales: Nanowhisker Chitin Bioplastic From Milkfish Scales (Chanos chanos) and Silk (Sperogyra) Reinforced with Retropaded Rice Waste Starch	Gwyneth Wyonna Lledo Sheryle V. Hilario	Solsona National High School, Ilocos Norte
LS-I-04	Behavioral Pharmacology and Toxicological Evaluation of Makahiya (Mimosa pudica) Leaves Extract for Sedative Hypnotic Activity	Wayne Xyluv U. Mina Sarah Joy Manuel	Lasip National High School, Pangasinan I

**Life Science (Team)**

Code Number	Title	Researchers/Adviser	School/SDO
LS-T-01	URI-FIER: Sampa-sampalukan (Phyllanthus niruri Linn) Leaves and Orange (Citrus x sinensis) Peels as Urinary pH Modulating Agents for Calcium Oxalate Prevention	Trixie Mariz S. Aquino Edinburgh A. Tipay Jr. Stephanie B. Corpuz  Michelle Navarro	Alaminos City National High School, Alaminos City
LS-T-02	SMART WRAP: Assessing and Developing Spoilage Detector Food Wrap From Carissa Caranda Fruit Extract for Alternative and Sustainable Food Packaging	Hillary Gale Antimano, Therese Edrielle Garcia, Selina Isabelle Chua  Melanie Chua	Cipriano P. Primicias National High School, Pangasinan II
LS-T-03	Potential of Bungang Tsina (Adonidia Merrillii) Seed Powdered Extract in Treating Hyperuricemia or High Uric Acid Level in Blood	Jeline O. Aquino Daphne Lian B. Esquillo  Emmanuel A. Verzosa	Sual National High School, Pangasinan I
LS-T-04	VITA: Vital Intersynergy of Turmeric ( <i>Curcuma longa</i> ) Rhizome and Pineapple ( <i>Ananas comosus</i> ) Rind-Anticoagulant Potential and Arterial Thrombosis Modulation for Stroke Prevention	Sofia Elliesse T. Palisoc Alima Chanery P. Romero Lhiza N. Balubar  Rosita P. Romero	Alaminos City National High School, Alaminos City
LS-T-05	Physicomechanical Properties of Paper Bags Developed from Rice Straw ( <i>Oryza Sativa</i> ) Banana ( <i>Musa species</i> ) Pseudostem and Recycled Paper Fiber	Shiela Aleli Gabriel Reyman T. Raymundo  Sheryle V. Hilario	Solsona National High School, Ilocos Norte
LS-T-06	Physico-chemical Microbiological and Organoleptic Analyses of Fermented Karonda (Karissa Carandas) Using Different Starters	Ryaj De Guzman Gereana Bautista  Alfonzo Mahinay	Bautista National High School, Pangasinan II

**Physical Science (Individual)**

Code Number	Title	Researchers/Adviser	School/SDO
PS-I-01	Transesterification of Triglyceride-Rich Milkfish ( <i>Chanos chanos</i> ) and Pig ( <i>Sus scrofa domesticus</i> ) Processing Residues into Fatty Acid Methyl Esters (FAMES) for Biodiesel Production	Dianna Krizza A. Castro  Sarah Joy Manuel Rico Cruz	Lasip National High School, Pangasinan I

PS-I-02	HydroLets: Development of Peanut Shells ( <i>Arachis hypogaea testa</i> ) and Coconut Husks ( <i>Cocos nucifera</i> ) as Neutralizer for Lead-Contaminated Water	Alexander C. Ho Charisse Orjalo	Alaminos City National High School, Alaminos City
PS-I-03	Synthesis of Carbon Quantum Dots (CQD) Derived from Rice Husks ( <i>Oryza sativa</i> L) Extract Encapsulated in Polyvinyl Alcohol (PVA) for White Light Production	Margaret Tishe I. Deato Darwin Benitez	Bayambang National High School, Pangasinan I
PS-I-04	WATTS UP: A Rain-powered Piezoelectric Energy Harvesting System with Real-time IoT Tracking	Joshua Alexis Baraoidan Maria Theresa Mylene Matias Sheryl Hilario	Solsona National High School, Ilocos Norte

#### Physical Science (Team)

Code Number	Title	Researchers/Adviser	School/SDO
PS-T-01	Development of a pH-Based Chlorimetric Detection of E. Coli Using Butterfly Pea Flower Extract	Fhlory Michelle Roque, Ken Ross Acosta, Pamela Marie Agngarayngay Brent Jetro Eder	Ilocos Norte National High School, Laoag City
PS-I-02	Synthesis of Nitrogen-doped Carbon Quantum Dots (N-CQDs) Derived from Jackfruit ( <i>Artocapus hetrophyllis</i> ) leaves and Urea (Carbamide) for Flourescence Sensing App in the Detection of Polymer Microplastics	Kiara Eulaine Herrera, Precious Blessy Banay, Helson Solis Darwin Benitez	Bayambang National High School, Pangasinan I
PS-T-03	BIOCAPS-VFO Enzymatic Biodegradation of High-Density Polyethylene Using Enzyme-Rich Black Soldier Fly ( <i>Hermetia illucens</i> ) Frass and Oyster ( <i>Magallana bilineata</i> ) Powdered Shell as Biocatalyst Encapsulant	Carl Humphrey T. Parocha, Dyanne C. Ranches, Sofia Arianne D. Raguin Michelle Navarro	Alaminos City NHS, Alaminos City

#### Robotics and Intelligent Machines (Individual)

Code Number	Title	Researchers/Adviser	School/SDO
RIM-I-01	Serial Crystallography-Optimized Sample Preparation with MYELIn: Novel Homogeneous Protein Microcrystal Yield Density	Charly David T. Manuel Kris Cristopher Dela Cruz	Alaminos City National High School, Alaminos City

	Control via Sequential Pulsed Electric Fields and Ultrasonic Irradiation		
RIM-I-02	Development of an ESP32-Based Text-to-Speech Reader to Assist Individuals of Dyslexia	Reindel Robiñol Edward Henry M. Caolie	Ilocos Sur NHS, Vigan City
RIM-I-03	C-DEP: Arduino-Based Intelligent Machine for Artificial Coral Substrate Deployment, Tracking, and Mapping for Coral Reef Restoration	Charles Jaylord S. Almonte Kris Cristopher Dela Cruz	Alaminos City National High School, Alaminos City
RIM-I-04	MIND-NET: MRI-based Intelligent Neural Detection Network for Brain Tumor Classification Using CNN DenseNet169, DenseNet201 and SEResNet50	Juross Prado Sarah Joy Manuel Rico Cruz	Lasip National High School, Pangasinan I
RIM-I-05	EARTHSCAN: Handheld Soil Health Instant Analyzer for Precision Agriculture	Zedric Amiel Obaldo Leonard Levi Suguitan	Regional Science High School for Region I, La Union

#### **Robotics and Intelligent Machine (Team)**

Code Number	Title	Researchers/Adviser	School/SDO
RIM-T-01	Agrimyonova: A Solar Powered automated System for Mushroom Farming	Peter Saimon Laguna, Athan Paul Balino, Leizel Gantala Vishia Gantala	Sarrat National High School, Ilocos Norte
RIM-T-02	AQUASAFE: Sola-powered Multi Parameter Alert Sensor Via SMS for Aquaculture Optimization	Alfred Christian Aquino, Timothy Floren Er Dueñas Ronnie Absalon Jr.	Pangasinan National High School, Pangasinan I
RIM-T-03	ChitoDispenser: A Portable Microplastics Monitoring System and Chitosan Dispenser for Bangus (Chanos chanos) Fish Ponds	Precious Acela Rosal, Aljon Mercado, Iannah Jie Ragutana Ashley Ferrer	Dagupan City National High School, Dagupan City
RIM-T-04	Alertovision: Smart AI System for Real Time Detection of Driver Drowsiness	Ian Jabez Marquez, Rosbel Moel Arenzana, Erika Fontawa Rowel Lucina	Regional Science High School for Region I, La Union

RIM-T-05	TRACE: Tracking Abnormal Lymphoid and Myeloid Cells for Pre-Diagnosis of Leukemia Using AI-Enhanced Analysis of Blood Smear, Microscopic Imaging, Classification of Abnormal Hematopoietic Precursors, and Data Output	Maebelle A. Mansilungan, Mary Ann B. De Francia, Zhyrynn Harp R. Mendez  Kris Cristhopher Dela Cruz	Alaminos City National High School, Alaminos City
RIM-T-06	OFFLAINE: Decentralized Local Artificial Intelligence System Unit for Remote and Low Infrastructure Communities	John Dave Revin Cortes et.al.  Noli Esmeña	Tayug National High School, Pangasinan II

#### Mathematics and Computational Sciences (Individual)

Code Number	Title	Researchers/Adviser	School/SDO
MCS-I-01	Geometric Threshold Criteria for Shallow Cumulus Initiation: A Statistical Discrimination Analysis of Filamentary, Planarity, and Aspect Ratio in Sub-cloud Coherent Structures	Rey Alfred S. Quiam  Lordiane Camba	Alaminos City National High School, Alaminos City
MCS-I-02	MVL Formula: Shortcut for the Elimination Method in Solving Systems of Polynomial Equations	Matt Vincent Llamas  Janice Viernes	Benigno V. Aldana NHS, Pangasinan II
MCS-I-03	Algebraic Modeling of Dengue Fever Spread: Analyzing Factors Affecting Outbreak	Lizette Diaz  Fe Anne The De Guzman	Bautista National High School, Pangasinan II
MCS-I-04	Computational Modeling of Optimal Seating and Crowd Management in Ferdinand E. Marcos Memorial Stadium	Claire Magdalene De Leon  Sheryl Hilario, Sharmaine Diego, Florie Joy Ramones	Solsona National High School, Ilocos Norte
MCS-I-05	The Dividibility of the Sum and Squares of N Consecutive Odd Integers with Constant Addition	Gabriel Auric Miguel  Imelda Canumay	Regional Science High School for Region I, La Union
MCS-I-06	A Modular Approach: Explicit Formulas Proving that Erdos-Straus Conjecture for 5/6 of Odd Integers	Ramel Tungpalan  Maria Veronica Cruz	Pangasinan National High School, Pangasinan I

**Mathematics and Computational Sciences (Team)**

Code Number	Title	Researchers/Adviser	School/SDO
MCS-T-01	Prime Pattern Generator (PPG): A Mathematical Investigation of Pattern Formation Under Modular Arithmetic and Cartesian Coordinate System	Jiro Arden Barcellano, Venzel Radwin Robosa  Jamella Anne Perez	Dagupan City National High School, Dagupan City
MCS-T-02	Consecutive Amazing Square-Full Numbers (CASN)	Byenz Hanerie Jimenez, Charles Ianne Cabiladas  Minervina Jimenez	Candon National High School, Candon City
MCS-T-03	Palindromic Pattern: Formed by the Quotient by the Sum of Distinct Permutations of Four to Six Non-Negative Integers with N Number of Digits and the Sum of These Integers	Dhenizze Sofia Moster, Stephanie Semillano  Imelda Canumay	Regional Science High School for Region I, La Union
MCS-T-04	Modeling the Infiltration Capacity Curve of a Selected Flood-prone Area in Laoag City Using Horton's Equation	Mar Jancsi Joaquim Coloma, Kristof Arkyn Santos, Zach Exequiel Castro  Engr. Jake Casey Sugui	Rodolfo CG Fariñas National Science High School, Laoag City

**Science Innovation Expo (Individual)**

Code Number	Title	Researchers/Adviser	School/SDO
SIE-I-01	BioBloom: Production of Biodegradable Nursery Pots Using Eggshells and Coconut Fibers and Beeswax-Cassava Starch Binder	Khiel Stefan Talavera  Mark Engelbert Dulay	Tayug National High School, Pangasinan II
SIE-I-02	REEFSTORE: Image Detection of Coral Diseases and Water Quality Monitoring with GPS-Enabled Mapping for Coral Reef Restoration Using a Tethered Remotely Operated System	Sophia Faith P. Brences  Rosemarie Reyes	Alaminos City National High School, Alaminos City
SIE-I-03	A Wearable Thermoelectric Hybrid Shoulder-worn Vest For Energy Harvesting with Dual Temperature Sensor	Consnathalie Tidoy  Sheryl Hilario	Solsona National High School, Ilocos Norte
SIE-I-04	Miniature Solar Powered Nannochloropsis Liquid-Tree Bioreactors Using Alternative CO2 Diffuser in Upcycled	Kelvin Gala  Mark Angelbert Dulay	Tayug National High School, Pangasinan II

	Galloon Bottle for O2 Generation		
SIE-I-05	BARO: Bio-Automated Respiration Optimizer Robot for Urban Air and Oxygen Renewal	Nolyn Angel Singson Shiela Mae Saguid	Ilocos Norte National High School, Laoag City

### Science Innovation Expo (Team)

Code Number	Title	Researchers/Adviser	School/SDO
SIE-T-01	Solar Driven Desalination Augmented with Reverse Osmosis and Ultraviolet Technology for Sustainable Clean Water Innovation	Asher Clyde Maala, Jerome Sacopaso  Rowel Lucina	Regional Science High School for Region I, La Union
SIE-T-02	PURE-WaSS: Smart System for Treating Wastewater Through Electrocoagulation and Processing Sludge Utilizing Thermal Drying Enhancement with IoT (Internet of Things) Capabilities	Ferdinand N. Natividad Jr., Maycelpia DG. Bautista, Stacey Anne A. Armstrong  Kris Cristopher Dela Cruz	Alaminos City National High School, Alaminos City
SIE-T-03	Solar-powered Arduino-Integrated Electrocoagulation Reactor (SPAIER) for Treating Livestock Wastewater	Ianna Lei Pagud, Johanna Beatriz Locquiao, Lyandrei Cariaga  Jerry Carreon	Ilocos Norte National High School, Laoag City

2. The participants to the said activity are the Research advisers/Coaches and Student-Researchers with qualified investigatory projects, Division Science and Mathematics Supervisors, judges, observers (maximum of five observers per SDO), and the Regional Technical Working Group (RTWG).

3. Registration and the setting-up of exhibit (Project Display Poster) will commence from 8:00 AM to 2:00 PM on **December 5, 2025**. The opening Program shall start at 3:00 PM on the same day.

4. Corresponding service credits shall be granted to the Research Advisers/Coaches in accordance with DepEd Order No. 53, s. 2003 and Compensatory Time-Off (CTO) shall be given to the supervisors/non-teaching personnel as stated in CSC and DBM Joint Circular No. 2, s. 2004.

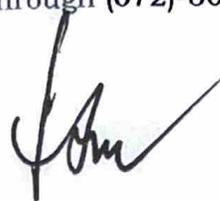
5. The meals, accommodation, travel and incidental expenses of the participants shall be charged against local funds and other sources subject to the usual accounting and auditing procedures.

6. Meals for the judges and facilitators (Science and Math Supervisors), as well as the Regional Technical Working Group (RTWG), on December 5, 2025 shall include afternoon snacks and dinner. On December 6, 2025, the meals to be provided will consist of morning snacks, lunch, and afternoon snacks and dinner

which shall be charged against OSEC-1-23-5570. Meanwhile, the accommodation expenses of the Division Science and Math Supervisors shall be charged against local funds and other available sources, subject to the usual accounting and auditing rules and regulations.

7. Reservation of accommodation at NEAP R1, San Vicente, City of San Fernando, shall be on first-come-first served basis. For reservation at NEAP R1, contact Ms. Marivic Rioveros, in-charge of accommodation through (072)-6075813.

8. For information and dissemination.



**TOLENTINO G. AQUINO**  
Director IV *N*

CLMD/jce/rap/rstf2025\_qualifiers  
December 1, 2025

