

PHILIPPINE-AMERICAN ACADEMY OF SCIENCE AND ENGINEERING

PAASE Monthly Newsletter

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Charting the Future: Key Insights from the Pagtanaw 2050 Foresight Review

Experts Call for Systemic Change, Accountability, and People-Centered Strategies in the STI Agenda

The **Pagtanaw 2050 Fireside Chat Series**, a collaborative initiative between the Philippine-American Academy of Science and Engineering (**PAASE**) and the National Academy of Science and Technology (**NAST**) Philippines, continues to serve as a vital national forum. The series aims to rigorously critique and refine the country's long-term Science, Technology, and Innovation (**STI**) agenda, ensuring the ambitious foresight document is both future-oriented and grounded in present-day realities.

Legs Two, Three, and Four of the series recently concluded, delivering particularly rich and focused discussions on systemic challenges spanning **governance, health, education, energy, water, space, and STI impact measurement**. The collective insights underscored a critical consensus: achieving the 2050 vision requires moving beyond technological optimism to address deep-seated, systemic issues.

The Sustainability Challenge in Health and Education

Discussions on the social sectors focused heavily on accountability and long-term investment:

- While praising the achievement of Universal Health Care (**UHC**), **Dr. Leah Tolosa-Croucher** questioned its long-term sustainability. She pinpointed poverty as the fundamental driver of health inequities and stressed the critical need for clear, measurable metrics to track UHC progress by 2050. Supporting this view, **Dr. Felicitas Lacbawan** emphasized that a comprehensive roadmap is necessary one that skillfully balances immediate, quick wins with sustained, long-term investments in diagnostics, therapeutics, and essential healthcare workforce development.
- In education, **Dr. Mariano Sto. Domingo** highlighted the importance of mentoring and data-driven tracking as keys to significantly boosting PhD completion rates. He also noted crucial blind spots in the foresight document, including the absence of strategies for mental health support and a defined language policy within STEM education.

Critical Infrastructure: Energy, Water, and Space

Legs Three and Four placed a sharp focus on the interconnectedness of vital national systems:

- Reviewing the energy chapter, **Dr. Joey Ocon** described it as comprehensive but noted the lack of a systems vision. He urged greater attention to waste management, justice in energy access, and ensuring policy coherence across different sectors. Crucially, he emphasized the importance of building robust local capacity to reduce dependence on imports.
- **Dr. Diana Aga** raised a strong alarm, noting that only 27 percent of Philippine water bodies are potable. She cited the challenges of outdated standards, weak sewage treatment, and underdeveloped rainwater harvesting. Deepening this critique, **Dr. Francis de los Reyes** stressed that water solutions must begin at the source, with stronger attention to

wastewater management and sound engineering practice to prevent inefficiencies and ghost projects.

- **Dr. Josefino Comiso** underscored the relevance of space exploration, particularly solar studies, to enhancing national resilience. He specifically identified the strategic development of rocket systems as an area where the Philippines could focus its investment.

Governance, Equity, and the Need for Institutionalization

Experts agreed that effective governance requires collaboration, a shift in metrics, and the institutional commitment to sustain foresight beyond political cycles:

- **Dr. Romel Gomez** sounded a serious warning about the disruptive potential of AI, calling for the establishment of national oversight mechanisms and trusted repositories of AI tools. Dr. Benito de los Reyes urged caution against the uncritical adoption of new technologies in academic settings.
- **Dr. Edna Co** and **Dr. Gonzalo Serafica** called for strengthening collaborative socio-technological ecosystems that connect government, industry, entrepreneurs, and academia.
- **Dr. Rosalie Arcala Hall** argued for the creation of a dedicated STI Foresight Institute. Such a body would be essential to integrate foresight into governance, sustain stakeholder engagement, and ensure the *Pagtanaw 2050* vision survives beyond changes in political administration. She also noted that critical national issues like demography, population density, and maritime territorial security need more explicit attention.
- **Dr. Romulo de Castro** added that the document must learn deeply from the pandemic and climate crises. He called for a stronger focus on poverty, Indigenous perspectives, health equity, and a holistic approach that values local expertise while balancing economic development with environmental stewardship.

The discussions across the four legs of the Fireside Chat Series highlight both the ambition and the substantial unfinished work embedded within *Pagtanaw 2050*. The foresight document is undeniably a valuable starting point, but its ultimate strength lies in its openness to critique and refinement.

The clear consensus across themes from governance and health to energy and equity is this: Science, Technology, and Innovation must not only drive national economic growth but must also be deliberately designed to directly and tangibly improve the lives of all Filipinos, especially the most vulnerable. By demanding accountability, holistic solutions, and institutional continuity, these reactors are helping ensure that the national STI agenda truly delivers on its promise for the Philippines in 2050.



Seeding Resilience: The 1001 Rice Genome Program Convenes Global Scientific Advisory Team

Philippine Initiative to Secure Food Future Taps International Experts for High-Yield, Climate-Resilient Rice

On September 22, 2025, the **1001 Rice Genome Program (1001 RGP)** took a leap forward by establishing its distinguished **Scientific Advisory Board (SAB)**. This development signals a major commitment to tackling one of the Philippines'

most critical challenges: securing stable food production amid the triple threat of climate change, population growth, and rising nutritional demands.

Formally titled the *Philippine Rice Genomics and Bioinformatics for High-Yielding, Nutritious, and Climate-Resilient Rice*, the 1001 RGP is a national endeavor leveraging advanced genomics and bioinformatics. The formation of the SAB ensures the program's trajectory will be guided by the highest standards of scientific rigor and cross-disciplinary expertise.

A Multidisciplinary Mandate

The SAB members, collectively representing decades of groundbreaking work across continents and disciplines, embody the diversity and depth required to address a challenge as complex as modern rice improvement. They span genomics, agriculture, marine science, and advanced materials:

- **Dr. William G. Padolina** - Former DOST Secretary | Former IRRI DDGP | Former PhilRice BOT Member | PAASE Vanguard Member
- **Dr. Gisela P. Concepcion** - Professor Emeritus, The Marine Science Institute, University of the Philippines Diliman | Academician, Philippine National Academy of Science and Technology (NAST) | Fellow, The World Academy of Sciences (TWAS) | Co-Editor, SciEnggJ
- **Dr. Michael Purugganan** - Interim Dean, Faculty of Arts and Sciences, New York University
- **Dr. Rod A. Wing** - Bud Antle Endowed Chair Professor, University of Arizona
- **Dr. Rigoberto C. Advincula** - UT-ORNL Governor's Chair of Advanced and Nanostructured Materials, University of Tennessee - Knoxville
- **Dr. Gladys Cherisse J. Completo** - President, Philippine-American Academy of Science and Engineering (PAASE) | Director, Institute of Chemistry, University of the Philippines Los Baños

Together, these advisors will play a crucial role in ensuring the program's scientific rigor, fostering essential international and local collaboration, and maximizing the real-world impact of the research outputs.

The 1001 RGP isn't just a collection of research projects; it's a collaborative vision rooted in Filipino ingenuity, bolstered by global expertise, and aimed squarely at long-term sustainability.

The program's journey toward creating rice varieties that are higher-yielding, more nutritious, and resilient to climate stressors will be formalized at the **First Annual Program Meeting in February 2026 at the University of the Philippines Los Baños**. This meeting will not only showcase the initial progress of the 1001 RGP's projects but, critically, will set the precise scientific and strategic directions for future research. In doing so, the 1001 RGP ensures that rice remains not just the nation's staple food, but a secure and sustainable lifeline for generations to come.

Congratulations to Dr. Josefino Comiso, 2025 AGU Union Fellow!

The Philippine-American Academy of Science & Engineering (PAASE) extends its warmest congratulations to Dr. Josefino Comiso on his recognition as a **2025 Union Fellow of the American Geophysical Union (AGU)**. The AGU is the world's largest Earth and space science association, bringing together more than half a million researchers, policymakers, educators, and advocates who work to advance scientific knowledge and its applications to society.

Being named a Union Fellow is one of the highest honors given by the AGU. It recognizes individuals who have made exceptional contributions to Earth and space sciences through research, innovation, leadership, and service to the scientific community. This distinction reflects not only the depth of Dr. Comiso's expertise but also the influence of his work in shaping the direction of global science.

Dr. Comiso's contributions have advanced knowledge, inspired collaboration across disciplines, and supported the growth of future generations of scientists. This recognition highlights the important role he plays in addressing scientific challenges that affect communities around the world.

PAASE is proud to join in celebrating this milestone. We commend Dr. Comiso's dedication and commitment to the advancement of science and look forward to seeing how his work continues to make an impact.

Source:



Congratulations to PAASE Members in the 2025 World's Top 2% Scientists Rankings!

The Philippine-American Academy of Science & Engineering (PAASE) proudly congratulates our distinguished members who have been recognized in the **2025 World's Top 2% Scientists Rankings by Elsevier and Stanford University**.

This prestigious list identifies scientists worldwide whose research output, citations, and influence place them among the top 2% of all researchers across disciplines. It is a recognition not only of productivity but also of sustained scholarly excellence, impact, and leadership in the global scientific community.

For 2025, our members have been honored under two categories:

Career-Long Impact – recognizing researchers whose lifetime body of work continues to influence their fields globally.

Single Recent Year Impact – recognizing researchers with significant scientific contributions and impact in the most recent year.

This recognition is a proof to their global impact, excellence, and leadership in advancing science, engineering, and innovation across disciplines.

We are deeply proud of your contributions and commitment to making Philippine and Filipino science and engineering shine globally.

Note: If there are other PAASE members included in the Elsevier–Stanford 2025 list who are not yet featured here, please let us know so we can update our records and celebrate them as well.

Source:

<https://top2percentscientists.com/>

Congratulations!!!

2025 List of the World's Top 2% Researchers Across All Disciplines

WORLD'S TOP 2% RESEARCHERS

(Career-Long)



Raymond Tan, PhD
De La Salle University



Carmencita Padilla, PhD
University of the Philippines
College of Medicine



Jurgene Primavera, PhD
Southeast Asian Fisheries
Development Center
Philippines



Eduardo Padlan, PhD
National Institute of Diabetes &
Digestive & Kidney Diseases, NIH



Kathleen Aviso, PhD
De La Salle University



Enrique Ostrea, PhD
Wayne State University



Glenn Gregorio, PhD
University of the Philippines
Los Banos



Allan Bernardo, PhD
De La Salle University



Anthony S. Chiu, PhD
De La Salle University



Maria Carmela Lapitan, PhD
University of the Philippines
Marina



Michelle Regalado, PhD
University of the Philippines
Diliman



Corlito Lebrilla, PhD
University of California, Davis



Michael Paraggonen, PhD
New York University



Rigoberto Advincula, PhD
University of Tennessee Knoxville



Josefine Cassese, PhD
Godard Space Flight Center - NASA



Jose Cruz Jr., PhD
Ohio State University



Baldomero Olivera, PhD
University of Utah



Greg Foliente, PhD
University of Melbourne



Joost Santos, PhD
The George Washington University

Congratulations!!!

2025 List of the World's Top 2% Researchers Across All Disciplines

WORLD'S TOP 2% RESEARCHERS

Single Recent Year



Kathleen Aviso, PhD
De La Salle University



Allan Bernardo, PhD
De La Salle University



Aristotile Ubando, PhD
De La Salle University



Carmencita Padilla, PhD
University of the Philippines
College of Medicine



Jurgene Primavera, PhD
Southeast Asian Fisheries
Development Center
Philippines



Alvin Colaba, PhD
De La Salle University



Glenn Gregorio, PhD
University of the Philippines
Los Banos



Raymond Tan, PhD
De La Salle University



Michelle Regalado, PhD
University of the Philippines
Diliman



Michael Rolado, PhD
University of the Philippines
Diliman



Ouriel Tantengco, MD, PhD
University of the Philippines
College of Medicine



John Ryan Diton, PhD
Bataan Peninsula
State University



Maria Carmela Lapitan, PhD
University of the Philippines
Marina



Menandro Acda, PhD
University of the Philippines
Los Banos



Josefine Cassese, PhD
Godard Space Flight Center - NASA



Wendell Rivera, PhD
University of the Philippines
Diliman



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New York University



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University of California, Davis



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University of Melbourne



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University of Utah



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Rigoberto Advincula, PhD
University of Tennessee Knoxville

SciEnggJ Featured Article: Characterizing Song Dynasty ceramics using molecular biology fluorescence technology

Characterizing Song Dynasty ceramics using molecular biology fluorescence technology

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Abstract:

We have used a new technology, fluorescent imaging, to examine Song Dynasty ceramics, renowned for their exquisite craftsmanship

and unique crackle patterns. By capturing high-resolution images of microstructural features and crackle networks that are illuminated by specific wavelengths of light, we have been able to discern differences that seem to distinguish between products of the Northern and Southern Song dynasty periods; these can be further divided by the patterns into five major types of Ge-like ware. Fluorescence technology thus offers a relatively simple, inexpensive and non-invasive method for the characterization and study of ancient ceramic vessels. In addition, analysis of the emitted fluorescence provides insights into the composition and distribution of glaze materials that are not revealed by other methods, deepening our understanding of historical craftsmanship and technological innovation.

KEYWORDS:

Chinese ceramics, fluorescent imaging, archaeological technology, Ge ware, crackled glaze, Song dynasty, Philippine prehistory, Kalaga Putuan Crescent

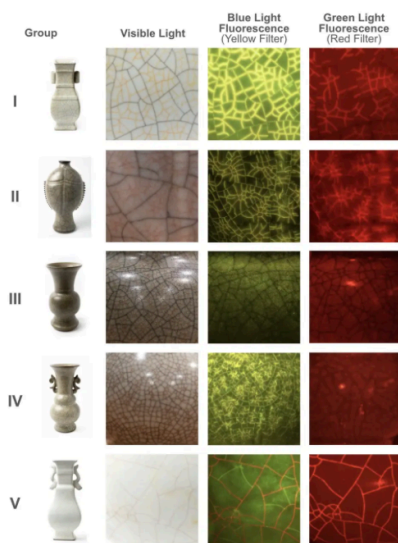
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ARTICLE

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We have used a new technology, fluorescent imaging, to examine Song Dynasty ceramics, renowned for their exquisite craftsmanship and unique crackle patterns. By capturing high-resolution images of microstructural features and crackle networks that are illuminated by specific wavelengths of light, we have been able to discern differences that seem to distinguish between products of the Northern and Southern Song dynasty periods; these can be further divided by the patterns into five major types of Ge-like ware. Fluorescence technology thus offers a relatively simple, inexpensive and non-invasive method for the characterization and study of ancient ceramic vessels. In addition, analysis of the emitted fluorescence provides insights into the composition and distribution of glaze materials that are not revealed by other methods, deepening our understanding of historical craftsmanship and technological innovation.

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We appreciate your dedication and commitment to our organization.

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