



International Mineralogical Association

www.ima-mineralogy.org

MESSAGE FROM THE IMA PRESIDENT

I would like to express our sincere greetings from the International Mineralogical Association (IMA) and introduce our new leadership with Eiji Ohtani (Tohoku University, Japan) as President (FIG. 1), Nancy Ross (Virginia Tech, USA) who was elected at the EMC 2024 in Dublin as 1st Vice President, Xiancai Lu (Nanjing University, China) as 2nd Vice President, and Hans-Peter Schertl (Ruhr-University, Bochum,

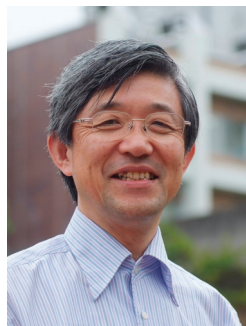


FIGURE 1 Eiji Ohtani (President of IMA)

Germany) as Past President. We would like to continue our work with you and colleagues from your societies to promote the mineralogical sciences worldwide. Since face-to-face meetings have been resumed after COVID-19, we look forward to renewing our cooperation and communication with you.

The members of the new IMA council are listed in TABLE 1. In addition to Nancy Ross, several new Council members were elected by voting at the IMA business meeting held during EMC 2024. Encarnación Ruiz Agudo (Spain) and Vincent van Hinsberg (Canada) were elected to a 4-year term as Councilors. Hiroaki Ohfuji (Japan), who was a previous Councilor, was elected as the new Secretary.

Travis Olds (USA) and Ross Angel (Italy) were approved for another 4 years as Treasurer and Councilor, respectively. The new Council board shows regional and gender diversity, which is essential to promote the current and future mineralogical sciences. I also appreciate Catherine McCammon, Anfuai Lu, and Sylvie Demouchy who completed their IMA service.

IMA was very active at EMC Dublin, as session conveners, participants, and as organizer of various Council and Business meetings. I deeply appreciate the work of the host organizer of the meeting, the Mineralogical Society of the UK and Ireland, and especially, Prof. Kevin Murphy and the members of the local organizing committee, and Prof. David Chew and Dr. Emma Tomlinson at Trinity College, Dublin.



FIGURE 2 The IMA medal was presented to Patricia Dove from Hans-Peter Schertl.

At the closing ceremony of the EMC 2024 meeting, the “Steering Wheel of Presidency” of the IMA leadership was passed from Hans-Peter Schertl to Eiji Ohtani (FIGS. 3 and 4).

The year 2026 will be very important for us because the 24th IMA General Meeting will be held in Nanjing, China. We would be very happy if you and your society members could participate in this important meeting for our community, and refresh our cooperation. Please consider submitting session proposals to make the IMA 2026 General

TABLE 1 LIST OF MEMBERS OF THE NEW IMA COUNCIL

Position	Name (Country), End of Term
PRESIDENT	Eiji Ohtani (Japan), 2026
PAST PRESIDENT	Hans-Peter Schertl (Germany), 2026
1 ST VICE PRESIDENT	Nancy Ross (USA), 2026
2 ND VICE PRESIDENT	Xiancai Lu (China), 2026
SECRETARY	Hiroaki Ohfuji (Japan), 2028
TREASURER	Travis Olds (USA), 2028
COMMUNICATION OFFICER	Michele Zema (Italy), 2026
COUNCILORS	- Ross Angel (Italy), 2028 - Vincent van Hinsberg (Canada), 2028 - Encarnación Ruiz Agudo (Spain), 2028 - Deshentree Chetty (South Africa), 2026 - Shaunna Morrison (USA), 2026



FIGURE 3 Handover of the Steering Wheel of IMA Presidency from Hans-Peter Schertl (Past President) to Eiji Ohtani (President).



FIGURE 4 Closing ceremony of the EMC 2024 meeting.

Assembly in Nanjing exciting and rewarding for all who attend. The 2nd Vice President Xiancai Lu recently introduced important deadlines for the session proposals and abstract submission:

- Session proposal deadline: August 31, 2025 (open from April 1 to August 31, 2025);
- Abstract submission deadline: March 1, 2026 (the submission window should open on October 15, 2025)

Opening of the IMA General Assembly will be August 20, 2026. Further details are given on the website of IMA 2026 General Assembly in Nanjing (<http://ima2026.nju.edu.cn>). The IMA initiated a PhD Student Award program a few years ago for supporting 3–5 students to attend this meeting. Please share this opportunity within your local community. We are looking forward to meeting you in Nanjing in August 2026.

Eiji Ohtani, President of IMA



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2024 MEDAL OF EXCELLENCE IN MINERALOGICAL SCIENCES TO PROFESSOR HAILIANG DONG

The IMA is honored to present its 2024 Medal of Excellence in Mineralogical Sciences to Prof. Hailiang Dong of China University of Geosciences, Beijing, China. Professor Dong has made groundbreaking and transformative contributions at the intersection of mineralogy and microbiology, particularly in the study of microbe–mineral interactions. His pioneering research has revolutionized the field of geomicrobiology through the use of rigorous experimental and analytical methods. His original discoveries include the role of microbial iron redox reactions in the formation of biogenic minerals, as well as the measurement of the deepest known microbial communities on Earth through a dedicated deep drilling program. Prof. Dong has an exemplary and sustained record of contributions to academic societies, funding agencies, and research networks, including mentoring many cohorts of young scientists.



Prof. Dong completed his BSc and MSc studies at China University of Geosciences, Wuhan (1988) and China University of Geosciences, Beijing, China (1991), respectively, and earned his PhD from the University of Michigan, USA (1997). After a postdoctoral research fellowship at Princeton University, USA (1997–2000), he joined the Department of Geology of Miami University, USA, where he started his professional career as an assistant professor, and then as associate professor and professor. He was subsequently appointed as a professor of China University of Geoscience, Beijing to establish a new laboratory to further develop his research.

In his early career, Prof. Dong studied ^{40}Ar – ^{39}Ar dating techniques for clay minerals, which elucidated the mechanism of argon retention in clay minerals, demonstrating the dating technique in determining the diagenetic age of sedimentary rocks. In the 2000s, he shifted his focus to the interaction between microbes and minerals, discovering the important role of microbes in the transformation of smectite to illite—previously thought to have occurred entirely through abiotic processes. His study demonstrated that, by reducing structural Fe(III) in smectite, Fe(III)-reducing microbes catalyzed the transformation of smectite to illite within 2 weeks at room temperature and pressure. Without bacteria, this reaction typically requires much higher temperature and pressure, making it a classic example of a microbially catalyzed mineral reaction. This groundbreaking finding also opened new avenues for studying the roles of microbes in the precipitation and transformation of various minerals, including dolomite, Fe-oxides, and clay minerals. Between the 2000s and 2010s, Prof. Dong played a key role in the Chinese Continental Scientific Deep Drilling Project, applying his geomicrobiological expertise to the study of the deep biosphere. More recently, he has focused on the physics and chemistry of microbe–mineral interactions, particularly extracellular electron transfer between microbes and minerals.

Prof. Dong has published 355 peer-reviewed research papers in prestigious international journals, including *Science*, *Nature Communications*, *Nature Reviews Microbiology*, *Nature Reviews Earth and Environment*, and *Nature Geoscience*. Notably, his publications are cited more than 2,000 times each year, with a total citation count exceeding 22,600 and an outstanding H-index of 80, reflecting the tremendous influence of his work in the mineralogical community.

Prof. Dong is currently the President of the Geomicrobiology Society of China. In 2014–2016, he held important positions in the United States National Science Foundation (NSF), including Program Director and Acting Section Head of Division of Earth Science. He has also been actively involved in editing many international journals, serving as co-editor-in-chief of *Chemical Geology* and *Geo-Bio Interfaces*, and as an Associate Editor for many journals including *Geochimica et Cosmochimica Acta* (GCA), *mLife*, *Geomicrobiology Journal*, and *Clays & Clay Minerals*. Starting this year, he is serving as Executive Editor of GCA, a major post with strong responsibility and time dedication.

Prof. Dong's high international reputation has been recognized through many prestigious honors and awards, including the Marion L. and Chrystie M. Jackson Mid-Career Clay Scientist Award of the Clay Minerals Society (CMS) (2008); the Marilyn and Sturges W. Bailey Award, the highest honor given by the CMS (2025); SERDP Project of the Year Award (2013); Fellow of Geological Society of America (2018); Follows of Durham University - Institute of Advanced Study (2019); and Geochemistry Fellow of the Geochemical Society (GS) and the European Association of Geochemistry (EAG) (2023).

We extend our heartfelt congratulations to Prof. Dong on this prestigious award, which is a testament to exceptional representation of contemporary international mineralogy, both as an outstanding scientist and as a dedicated member of the community. He remains an active and innovative scientist, and we eagerly anticipate his future discoveries and achievements.

Please note that Prof. Dong will deliver his medalist talk at the 24th General Meeting of the IMA in Nanjing, 2026, where Prof. Irifune (Japan), the 2023 awardee will also present his medalist talk.

24th GENERAL MEETING OF THE INTERNATIONAL MINERALOGICAL ASSOCIATION

August 20–24, 2026, Nanjing, China

IMPORTANT DATES:

- Session proposal deadline:
August 31, 2025 (open from April 1 to August 31, 2025)
- Abstract submission deadline:
March 1, 2026 (the submission window should open on October 15, 2025)
- Opening of the IMA General Assembly:
August 20, 2026

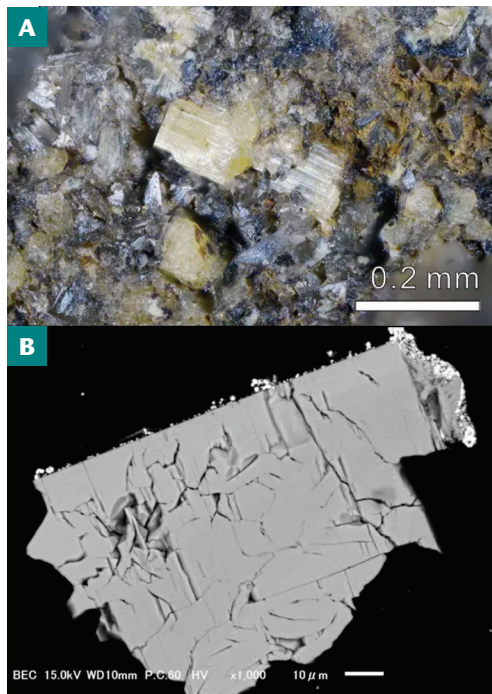
Further details can be found at <http://ima2026.nju.edu.cn>.





MIYAWAKIITE-(Y): MINERAL OF THE YEAR 2024

The 2024 “Mineral of the Year” award has been assigned to miyawakiite-(Y). The mineral was discovered in an abandoned pegmatite mine located at Suishoyama, Iizaka village, Kawamata, Date District, Fukushima Prefecture, Japan, and was fully characterized by a Japanese research team led by Daisuke Nishio-Hamane (Institute for Solid State Physics, University of Tokyo, Japan).



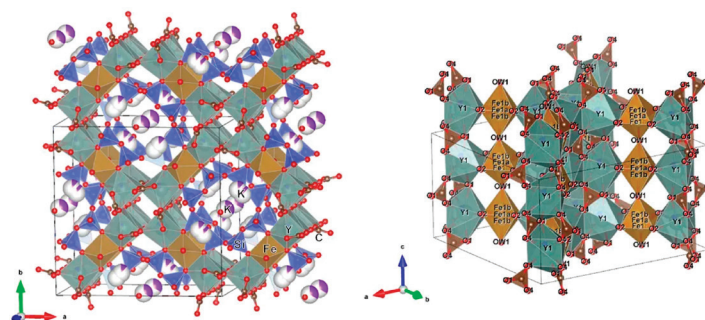
Microscopic photo (A) and back-scattered electron image (B) of miyawakiite-(Y). REPRINTED FROM A PUBLICATION OF THE JAPANESE ASSOCIATION OF MINERALOGICAL SCIENCES.

The pegmatite of the Suishoyama mine is rich in REE-bearing minerals, such as allanite-(Y) and britholite-(Y), plus carbonates such as caysichite-(Y) and tenerite-(Y). Miyawakiite-(Y) and the other carbonates occur as secondary minerals formed by supergene alteration of allanite-(Y) and britholite-(Y). Miyawakiite-(Y) is the third mineral having the Suishoyama pegmatite as the type locality, besides britholite-(Y) (1938) and iwashiroite-(Y) (2003). The approximate GPS coordinates are 37°40' N, 140°37' E.

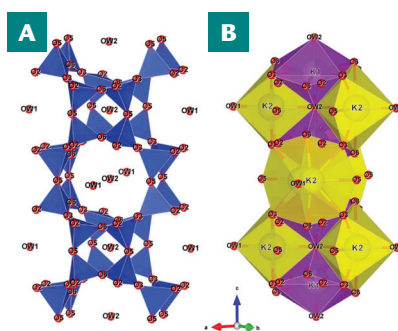
At the type locality, miyawakiite-(Y) occurs as thin plates or columnar crystals with a pale-yellow colour, transparent with a vitreous lustre, and dimensions typically ranging from 0.2 to 0.5 mm.

The ideal chemical formula of miyawakiite-(Y) is $\square Y_4Fe_2(Si_8O_{20})(CO_3)_4(H_2O)_3$. In the empirical formula, K partially substitutes for vacancy, other REEs and Ca partially substitute for Y, and Mg and Mn^{2+} partially substitute for Fe^{2+} . Miyawakiite-(Y) is chemically related to caysichite-(Y), both being silicate minerals including REEs and carbonate groups. However, the two minerals have different crystal structures.

The unprecedented crystal structure of miyawakiite-(Y) has been solved and refined up to $R = 3.86\%$ in the tetragonal space group $I4/mcm$. Its unit cell parameters are $a = 17.53637(9)$ Å, $c = 9.55702(8)$ Å, $V = 2939.02(4)$ Å³, $Z = 4$. The structure is quite unique: a Y- and Fe-centred polyhedral arrangement with CO_3 triangles forms a prismatic framework, with channels developing along the c axis. A SiO_4 tetrahedral network occurs in this channel, forming a zeolite-like framework with larger sites inside, mostly vacant and only partially occupied by K.



Crystal structure of miyawakiite-(Y). REPRINTED FROM A PUBLICATION OF THE JAPANESE ASSOCIATION OF MINERALOGICAL SCIENCES.



Zeolite-like channels of tetrahedra (A) and guest sites (B) in miyawakiite-(Y). REPRINTED FROM A PUBLICATION OF THE JAPANESE ASSOCIATION OF MINERALOGICAL SCIENCES.

The mineral took its name after Ritsuro Miyawaki (b. 1959), mineralogist at the National Museum of Nature and Science, Tsukuba, Ibaraki, Japan, for his lifetime contribution to systematic mineralogy, with a special attention to REE-bearing minerals. Ritsuro Miyawaki has described some 30 new mineral species and provided a tremendous service to the mineralogical community, serving as the national representative for Japan within the IMA Commission on

New Minerals, Nomenclature and Classification, and in 2018–2022 as chair of the CNMNC. During his four-year term, he evaluated more than 500 proposals for new minerals.

The full description of the new mineral has been published in the *Journal of Mineralogical and Petrological Sciences* [Nishio-Hamane, D., Momma, K., Shimobayashi, N., Ohnishi, M., Kobayashi, T. (2024): Miyawakiite-(Y), $\square Y_4Fe_2(Si_8O_{20})(CO_3)_4(H_2O)_3$, a new mineral from Suishoyama, Kawamata Town, Fukushima Prefecture, Japan].

Link to the original article: https://www.jstage.jst.go.jp/article/jmps/119/1/119_240722/_pdf-char/en.

ABOUT THE IMA MINERAL OF THE YEAR INITIATIVE

The IMA Mineral of the Year initiative was launched in 2014 and is coordinated by the Commission on New Minerals, Nomenclature and Classification (CNMNC) of the International Mineralogical Association. Each year, the title is awarded to one newly described mineral published within that year.

Selection is based on several key criteria, including:

- **Aesthetic appeal** – well-formed crystals and striking morphology
- **Unprecedented crystal structure** – novel arrangements not seen before
- **Unusual chemistry** – rare or unexpected combinations of chemical elements
- **Scientific relevance** – significance for mineral classification and Earth sciences more broadly

The initiative highlights outstanding new mineral discoveries. On average, more than 100 new mineral descriptions are published each year—105 in 2024 alone—making the selection of the Mineral of the Year especially competitive.



EXPANDING THE VOCABULARY OF MINERALS: HOMOGENEITY, ORIGIN, AND VALIDATION

Minerals constitute the solid part of the Universe. Paraphrasing Anhuai Lu (IMA President, 2020–2022): *if minerals are like words, then learning and applying mineralogical knowledge, particularly through mastering a rich vocabulary of minerals, enables us to write great articles on Earth sciences.* In other words, the more minerals we know, the richer our vocabulary becomes.

According to the definition of Nickel and Grice (1998), a mineral is a homogeneous, solid substance formed through geological processes. Substances of biogenic origin that have not been modified by geological processes are not considered minerals.

A mineral must be homogeneous over a measurable minimum volume to allow reliable identification and characterization. While homogeneity on the scale of millions of unit cells generally ensures that the material is large enough to yield statistically meaningful data, even minor compositional variations at smaller scales can significantly affect its overall properties. Consequently, the smaller the sample, the greater the effort required by the researcher to verify its homogeneity. This leads to an important question: what is the minimum size required for a substance to be classified as a mineral species?

This represents one of several challenges facing the Commission on New Minerals and Mineral Names (CNMNC), alongside the ongoing issue of defining the natural (geological) origin of minerals. Encouraging progress has been made on this front, as evidenced by a recently published guidance paper (Bosi et al. 2025) addressing minerals of uncertain origin. Drawing on the 2024 report of the IMA Mediation Committee, this paper provides key recommendations for submitting mineral proposals to the CNMNC, with the aim of minimizing issues related to contamination, anthropogenic influence, or fraudulent synthesis. In addition, the CNMNC has recently adopted a 75% positive vote threshold for the approval of new mineral species, nomenclature changes, and the establishment of new mineral groups or supergroups. The Chair (or designated officer) also retains the authority to suspend the voting process if serious concerns are raised by Commission members.

The number of known mineral species has increased over time due to the natural evolution of the Earth–Universe system. This number continues to grow year by year, driven by ongoing advances in scientific and analytical techniques that enable the characterization of increasingly smaller volumes of solid matter (Fig. 1).

Over the past two centuries, the discovery of minerals has grown exponentially. In 70 AD, Pliny the Elder listed approximately 30 minerals in his *Naturalis Historia*. By the early 1800s, the number of known mineral species had increased to around 200 (Ford 1918). In 1837, Dana's seminal book *A System of Mineralogy* documented about 350 scientifically described minerals. By 1912, just before the widespread use of X-ray diffraction (XRD), this number had

nearly tripled to approximately 900 (Dana, 1892–1915), driven by advances in chemical analysis and the introduction of the polarizing microscope. Between 1920 and 1959, nearly 600 more minerals were described (Mandarino 1977), aided by XRD and wet chemistry.

A turning point came with the founding of the IMA in 1958, which introduced standardized rules for defining and validating new minerals. At the same time, the introduction of the electron microprobe enabled chemical analyses at the micron scale, further accelerating discoveries. As a result, the number of recognized mineral species rose to ~2,370 by 1980, ~3,650 by 2000, ~5,660 by 2020, and stands at roughly 6,200 today. This remarkable growth reflects both natural processes and the ever-expanding capabilities of modern analytical science.

Note to Journal Editors

In accordance with the *Advice to Editors* by Nickel and Grice (1998), journal editors play a crucial role in supporting the Earth science community by ensuring strict adherence to IMA–CNMNC procedures. Manuscripts involving new minerals, nomenclature questions, or any changes to existing mineral species must be carefully evaluated in agreement with CNMNC guidelines. Authors are required to confirm that all relevant proposals have been submitted to and approved by the Commission. Such manuscripts must be accompanied by a formal *Approval Notification Letter* issued by the CNMNC. This letter serves as official certification of the approval of new minerals, nomenclature revisions, or the establishment of mineral groups and supergroups. It also provides editors and reviewers with access to essential comments from the Commission, facilitating a thorough and informed peer-review process.

Failure to adhere to established procedures can lead to significant confusion, as illustrated by a recent pair of publications by Cabri and McDonald (2025a, 2025b). In addition to several basic errors concerning nomenclature rules, the authors questioned the validity of IMA–CNMNC-approved species (ezochiite and shiranuiite) and re-evaluated the nomenclature of mertieite without submitting the required formal proposals for consideration and approval.

Although scientific debate is encouraged, revisions to the official nomenclature must follow established protocols to ensure transparency, evidence-based assessment, and international consensus. This is the role of the CNMNC, which, through the work of 34 internationally renowned mineralogists and crystallographers, reviews all proposals on a monthly basis to ensure their scientific validity. Publishing articles that contradict CNMNC decisions—without clarification that the expressed views are personal—risks undermining decades of work toward a coherent, authoritative nomenclature system. Editors are therefore strongly urged to clearly distinguish in their journals between unofficial interpretations and the official positions of the IMA–CNMNC.

It is instructive to conclude this note with the words of Williams et al. (2014): “The key point we want to stress, besides this specific case, is that the IMA guidelines should be followed at all levels – by authors, by referees, and **also** by editors of scientific journals. These guidelines can be found in: Nickel & Grice (1998), Burke (2008), Hatert & Burke (2008), Mills et al. (2009), Mills (2010), and Hatert et al. (2013). All those involved in scientific research in mineralogy should speak a common language, and the IMA –CNMNC does represent the locus where these issues are discussed and put in the form of general guidelines.”

Ferdinando Bosi, Frédéric Hatert, Stuart J. Mills, and Marco Pasero

References on page 441

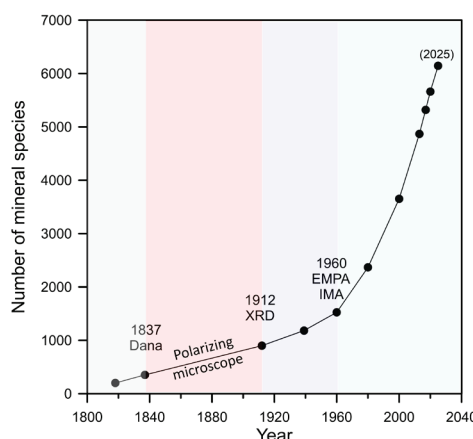
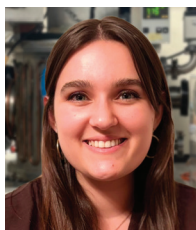


FIGURE 1 Historical increase in the number of officially recognized mineral species.



The GORDON MCKAY AWARD is given each year to the student who gives the best oral presentation at the annual meeting of the Society. The award honors the memory of Gordon A. McKay and is supported by the McKay Fund, which was established in 2008 as a part of the Meteoritical Society's endowment. The McKay Award for the 87th Annual Meeting of the Meteoritical Society in Perth goes to **Linda R. Losurdo** (The University of Sydney, Australia) for the talk

entitled "Plasma-Synthesised Organic Networks as Laboratory Analogues of IOM in Carbonaceous Chondrites: Distinguishing Ion Bombardment from Temperature Effects." The award comes with a prize of US \$1,000 and a certificate.

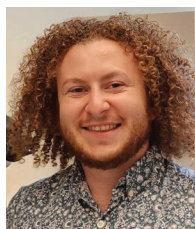
The WILEY-BLACKWELL AWARD is presented for outstanding presentations by students at the annual meeting of the Society. Wiley-Blackwell are the publishers of *Meteoritics and Planetary Science* and, for the 87th meeting in Perth, they sponsored five awards of US\$500 each. The 2025 Wiley Award winners are **Daniel L. Burgin** (Curtin University, Australia) for the presentation "Non-metallic Core Formation in Highly Oxidised Asteroids," **Connor Antonio Diaz** (University of Colorado Boulder, USA) for the presentation "Heterogeneous Ejection Temperatures Recorded in a "Low-Shock" Martian Meteorite by (U/Th)/He Thermochronology and a High-Pressure Polymorph," **Alexander M. Kling** (Purdue University, USA) for the presentation "Unraveling the Complex Relationship Between Progressive Space Weathering and the Cycling of Solar Wind Volatiles on the Moon," **Yamazaki Sojiro** (University of Tokyo, Japan) for the presentation "On the Relationship Between Geochemical Classification and Redox State of Poikilitic Shergottites: Further Evidence for Heterogeneous Martian Mantle," and **Zheng Yuke** (Field Museum & University of Chicago, USA) for the presentation "Volume Measurement of Small Particles using SEM Photogrammetry and 3-D Reconstruction."



Daniel Burgin



Connor Antonio Diaz



Alexander King



Yamazaki Sojiro



Zheng Yuke

CALL FOR AWARD NOMINATIONS

Please consider nominating a colleague for one of the Society's awards. Nominations should be sent to the Society secretary at (metsec@gmail.com) by January 15 (January 31 for the Pellas-Ryder Award and the Service Award). For more information and details on how to submit a nomination for any of these awards, please see the latest Newsletter on the Society website or email the secretary.

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IMA Cont'd from page 443

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