

Report on the 6th Japanese-American–German
Frontiers of Science (JAGFOS) Symposium

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Introduction

Some people may have heard of the Frontiers of Science (FoS) Symposium but still wonder what exactly is enjoyable or rewarding about participating, which may cause them to hesitate before applying. Others may already have been selected and want to know what kind of program awaits them. Still others—returning for a second time and now joining the planning and organizing side—may be unsure how to conduct themselves in this new role.

This report serves both as an implementation report on the Japanese–American–German Frontiers of Science Symposium (hereafter referred to as JAGFOS) and as a personal account of my experience participating in it. Through this report, I hope to encourage more researchers to aspire to participate in a FoS symposium and to help future participants make their experience even more fulfilling. I also hope that this report will reach young researchers who are not yet aware of the FoS symposium and convey the appeal of this remarkable international exchange initiative, organized by the Japan Society for the Promotion of Science (JSPS) in collaboration with overseas research institutions.

About JAGFOS

The FoS (Frontiers of Science) Symposium is a residential symposium in which outstanding early-career researchers from Japan and abroad engage in interdisciplinary discussions on cutting-edge science, with the aim of fostering new research frontiers and cultivating the next generation of scientific leaders. On the Japanese side, the program is administered by the Japan Society for the Promotion of Science (JSPS) and is implemented in various formats in collaboration with overseas partner institutions (for details, see the JSPS website: <https://www.jspa.go.jp/english/e-fos/index.html>)

Participants come from a wide range of fields—from the earth sciences to the social sciences—and are exposed to cutting-edge topics far beyond their usual areas of expertise, engaging in relaxed, curiosity-driven discussions. In this respect, the FoS symposium differs greatly from the conferences researchers typically attend. Conventional conferences are venues for deepening specialization, competing over new discoveries, and at times engaging in vigorous debate. In contrast, the FoS symposium aims to foster an understanding of the diverse scientific cultures that exist across disciplines. While conferences often serve as opportunities to explore potential collaborations, the FoS symposium does not necessarily seek immediate or tangible outcomes. This is one of the key reasons why FoS participants are able to enjoy the experience in a more informal and open-minded manner.

During a conversation with a member of the FoS Symposium Advisory Board, I was told that the program should be regarded as a “long-term investment in science.” The researchers selected from each country—chosen for their potential to demonstrate leadership—are expected to become future leaders in academia. When they eventually find themselves in positions where they must take a broad view across disciplines and help shape the direction of science, the experience gained here will undoubtedly prove valuable. Sharing meals and living together during the symposium also creates bonds that allow participants to reconnect effortlessly when they meet again later in their careers. The symposium is a place where such lasting relationships are formed.

My Past Participation in JAGFOS and My Roles

I am a researcher specializing in cellular signal transduction within the field of pharmaceutical sciences, and within JAGFOS I am affiliated with the biology (life sciences) session. However, biology is an extremely broad discipline, and across the three JAGFOS meetings I have attended, the session topics have differed considerably from my own area of expertise.

In the latter two of my three participations, I served as a Planning Group Member (PGM), adopting a responsibility for tasks ranging from deciding on the biology session topics to selecting potential speakers and introducing the session themes to participants. Taking a broad, cross-disciplinary perspective to understand how biology—often a field that begins with the discovery of phenomena—differs from other disciplines, and communicating the appeal of biological research, proved to be an invaluable learning experience.

I have been fortunate to participate in JAGFOS three times so far. Under the rules of the FoS program, participants are expected to take on a different role each time they join (general participant, speaker, PGM, or PGM Co-chair; see the JSPS guidelines for details: <https://www.jsps.go.jp/english/e-fos/index.html>). My first participation (2023, Dresden, Germany) was as a general participant (and next-term PGM); my second (2024, Kyoto, Japan) was as a PGM (and next-term PGM Co-chair); and my third (2025, Irvine, USA) was as the PGM Co-chair.

My first participation was filled with new experiences, and I remember feeling overwhelmed by the atmosphere of JAGFOS—the entire event seemed to pass in an instant. The impression left by Teppei Yasunari, who served as the PGM Co-chair at the time, was particularly striking. He opened the symposium with stories about powerlifting training and skillfully guided the sessions with exceptional communication skills. To be honest, I felt somewhat intimidated, wondering whether such a high level of communication ability was necessary to fully enjoy the FoS symposium. (I also encourage readers to consult Yasunari’s report, which conveys his deep passion for JAGFOS:

https://www.jsps.go.jp/file/storage/j-fos/j-fos_jag/jishi_04/2_JAGFOS2023_PGMco-chair_report_en.pdf)

At the JAGFOS held in Germany, I felt a strong sense of being “away from home,” and I was overwhelmed by an atmosphere in which participants spoke up without hesitation. Even so, I vividly remember staying at the hotel bar after dinner each night, drinking and discussing topics such as social fragmentation and religion with participants from the social sciences. I came to realize that true exchange begins in the informal gatherings that follow the official sessions.

That year's biology session focused on animal linguistics, and the presentations on vocal communication in birds, whales, and naked mole-rats were so remarkable that they continued to be discussed for years afterward. The experience proved extremely valuable when proposing and discussing future session topics.

By my second JAGFOS, I already had a sense of how the event worked, and the fact that it was held in Japan gave it a familiar, "home-ground" feeling. Knowing where the enjoyable aspects lay, I was able to participate with much greater ease. A major reason for this calmness was the remarkable steadiness of Taiji Suzuki, who served as the PGM Co-chair. His humor—especially the karate anecdotes that energized the room—was impressive.

(I also encourage you to read Suzuki's insightful report:

https://www.jsps.go.jp/file/storage/e-fos_jag_2024/report_en.pdf)

During this second participation, I served as a PGM. Much of a PGM's work occurs before the symposium itself. One key responsibility is guiding speakers from each country to ensure their presentations align with the aims of the FoS symposium. Since many speakers are first-time FoS participants, it is essential to help them understand that the style of presentation expected here differs from that of a typical academic conference. Limiting the use of specific data and having three speakers relate their talks to one another is far more challenging than delivering a specialized conference presentation.

That year's biology session focused on the origins of life on Earth. The introductory speaker, Kosuke Fujishima, demonstrated exceptional communication skills and expertly brought the session together. Since the symposium was held in Japan, we were also able to share our spirit of hospitality. A group of Japanese participants took colleagues from the U.S. and Germany into the bustling streets of Kyoto, where we deepened our connections over drinks—an experience that remains a fond and vivid memory.

Preparatory Meeting

Before the main JAGFOS event, all participants from Japan gather at the JSPS headquarters in Tokyo for a full-day training session, known as the Preparatory Meeting.

The purpose of this meeting is to equip participants with the background knowledge needed for the main JAGFOS event and to foster discussion and interaction on site. Talks from unfamiliar fields can be difficult to follow—even when delivered in Japanese—because of technical terminology and assumed prior knowledge. Simply understanding what is being asked and what makes the topic interesting can be a challenge. During the preparatory meeting, the PGM of each session and the Japanese speakers explain both the background of the session topic and the content of the overseas speakers' presentations in Japanese. This preliminary understanding makes it much easier to appreciate the appeal of the topics and to grasp the key points of discussion during the main symposium.

It is also highly meaningful for Japanese participants to become acquainted with one another in advance. During the main JAGFOS event, interactions naturally focus on exchanges with participants from overseas. In that context, the reassurance of already knowing some fellow Japanese participants provides an important boost, making it easier to step forward and engage actively. In this way,

attending—or not attending—the preparatory meeting can significantly influence the quality of one’s experience during the main symposium. For those planning to participate in a future FoS symposium, I strongly recommend prioritizing attendance at the preparatory meeting when arranging your schedule.

The role of the PGM Chair during the preparatory meeting is to provide an overall orientation and to moderate the session. At the end of my orientation, I made one request: that participants address one another with “-san,” preferably using first names, rather than titles such as “Prof.” or “Dr.” This request was intended to encourage young researchers to interact in a more informal and collegial manner.

I also made an additional personal effort. Before the preparatory meeting, I arranged an online meet-and-greet for the Japanese participants in the biology session. It was a casual gathering with brief research introductions and light conversation. I had two goals in mind. First, I wanted participants to feel reassured during the preparatory meeting by already knowing a few familiar faces. Second, because research-related discussions within the same session would largely be covered beforehand, I hoped this would naturally create more opportunities for participants to interact with colleagues from different sessions.

JAGFOS Main Program

Day 1

When JAGFOS is held overseas, the schedule is tightly packed within a limited timeframe. For this year’s meeting in the United States, participants departed Japan on an evening flight and arrived at Los Angeles International Airport late in the morning. From there, they took a chartered bus for about an hour to the hotel in Irvine. The symposium began that same evening with a welcome event, followed by two and a half days during which participants spent more than twelve hours together each day—from breakfast through dinner. On the final day (Day 4), Japanese participants returned home on a late-night flight. In addition to this schedule, next-term PGMs also attend two separate two-hour meetings—one on the arrival day and another on the final day—to determine the session topics for the next JAGFOS. Moving back and forth between the hotel and the symposium venue, we experienced an intense and fulfilling few days.

For this JAGFOS, I arrived in the United States three days before the start of the symposium and arranged a visit to the research community at UC San Diego. San Diego, located near the JAGFOS venue, is a major hub for research in my field, and I hoped to use this trip as an opportunity to expand my academic network. Having experienced in past JAGFOS meetings how overwhelming it can be to absorb new academic information in English all day long, I also used this period to shift my mind into “English mode.” By touring research institutes at UC San Diego and attending seminars, I gradually became accustomed to thinking in English and adjusted to the time difference, ensuring that I was fully prepared for the main symposium.

Before the reception party on the first day, two meetings are scheduled: a two-hour session to determine the topics for the next JAGFOS and a one-hour coordination meeting for the speakers. Since the meeting for the next JAGFOS is attended by the next-term PGMs, I did not participate this time. I would therefore like to reflect on how it proceeded in the previous year. One next-term PGM from each country and each session (18 PGMs in total) participates, and

each session prepares in advance by selecting around three candidate topics to present. On the day of the meeting, each session presents its proposed topics, and through discussions with PGMs from other sessions—evaluating whether the topics align with the aims of the FoS symposium—the final selection is made by vote. During these discussions, proposed topics are sometimes merged into a new, combined theme, or the final selection may shift to ensure balance across all sessions. What is particularly interesting is that the predictions made within each session—rankings based on recent trends in the field—often differ from the results that emerge after the voting. What researchers from other disciplines find intriguing or wish to learn more about does not necessarily align with our own intuitions. Becoming aware of this difference is, in itself, one of the great appeals of the FoS Symposium. In any case, it is important to recognize that the eighteen next-term PGMs devote considerable thought and engage in serious discussion as they select the topics for the next set of sessions.

Subsequently, a coordination meeting among the speakers was held, serving as the final opportunity for adjustments before the main event. As mentioned earlier, presentations that are engaging and provoke active discussion at the FoS symposium differ significantly from those at typical academic conferences. In the biology session this year, we entered the symposium without having completed sufficient prior alignment between the PGMs and the speakers, nor had we provided enough feedback on their presentation decks. During the coordination meeting, Falk-san (Falk Butter) and I, as PGMs, offered candid feedback on the speakers' decks: trimming unnecessary data, streamlining the introduction, clarifying the key message of each presentation, and ensuring that the three speakers' presentations connected with one another. Both the speakers and the PGMs shared the same goal—to convey the appeal of the biology session topic to the entire audience—and everyone approached the discussion with great seriousness. I am truly grateful to the speakers for revising their decks late into the night. Looking around, some session groups appeared fully prepared and spent this time chatting casually, while others, like ours, continued refining their content until the last minute.

Finally, the reception for all participants began—a dinner gathering held in the hotel garden. Edward Patte, Director of the U.S. NAS and Yoshimichi Sato, Advisory Board member of the JSPS spoke about the purpose of the FoS symposium and shared memorable stories. The event officially opened with a toast by Falk-san, the PGM Co-chair from Germany. As an icebreaker, participants rotated among tables based on symbols on their name tags, engaging with different groups each time. This was a new initiative, not seen in the previous two symposiums, and I found it to be an excellent approach; once you have spoken with someone, even briefly, the barrier to further communication becomes much lower.

Meals throughout the symposium, including this evening, were served buffet-style, featuring an impressive array of dishes. Dinner was accompanied by alcoholic beverages each night, and spending time chatting over a glass—often about topics unrelated to science—became an essential part of building connections among participants. On this particular night, many of us lingered until the drink service ended, continuing our conversations. However, the unexpectedly chilly California autumn evening, combined with the fatigue from long-distance travel, eventually brought the gathering to a natural close.

Day2

Starting on the second day, we traveled to the venue where the main JAGFOS events were held. As in previous years, the venue was the Arnold and Mabel Beckman Center of the U.S. National Academy of Sciences (NAS), with participants traveling back and forth from the hotel by bus. The Center is located adjacent to the expansive UC Irvine campus. From the outside, the building appears modest and unassuming; however, this impression changes entirely once you step inside. The hallways are lined with exhibits related to the history of science, lending the space the feel of a small museum. Walking down the opposite corridor, one encounters an impressive auditorium and several conference rooms. Being in such a place—truly a home of science—naturally instilled a sense of focus and solemnity.

After traveling by bus from the hotel, we began the day with breakfast at the NAS venue. From breakfast until dinner, we spent the entire day at the site. In past meetings held in Germany or Japan, the venue and hotel were located in the same building, allowing participants to return to their rooms for a brief rest during breaks. I had been concerned that the separation of the venue and hotel this time might place an additional burden on participants. However, once the program began, I found that the breaks naturally encouraged interaction: people wandered around the venue and the poster displays, striking up conversations as they went. In fact, it seemed to create even more opportunities for interaction among participants. Ultimately, this arrangement may have been the better one.

After breakfast, we moved to the auditorium, where the atmosphere shifted, and it finally felt as though the main JAGFOS program was about to begin. The opening session featured remarks from Tetsuya Mizumoto, Executive Advisor of JSPS and Emily Lines, Program Director Frontiers of Research of the German AvH, followed by a lecture from Susan Wessler, Vice President of the U.S. NAS. Wessler is a world-renowned authority on transposon research in plant genomes. Reflecting on her own research career, she spoke about the development of science through the NAS and her longstanding efforts to promote the advancement of women in science. One particularly memorable moment was her account of how her international collaboration with Professor Yutaka Okumoto of Kyoto University had profoundly influenced her career. Through her personal experiences, she illustrated the importance of academic cooperation between Japan, Germany, and the United States. Her lecture concluded with a humorous note. As a baseball enthusiast, she referenced the rare occasion when Shohei Ohtani and Roki Sasaki both pitched in the same game, remarking that “international collaboration in science, much like baseball, advances through encounters between different cultures and talents.” The audience responded with warm laughter, setting the perfect tone for the opening of the symposium.

The first session focused on Earth sciences, under the theme *Climate Change and its Effects on the Biosphere*. Christian Zeeden (Germany) presented on paleoclimate reconstruction using sediment cores; Atsuko Yamazaki (Nagoya University) discussed the use of coral skeletal isotope analysis to elucidate past oceanic environmental changes; and Daniel Gebregiorgis (United States) spoke about the relationship between climate change and recurrent locust outbreaks in East Africa. During the discussion, one participant posed a thought-provoking question: 'Is climate change truly a "bad thing"? Could it not also lead to the emergence of new species?' The response was insightful: 'On a geological

timescale, climate change is in fact the norm and has driven the evolution of new life. The issue lies in the speed of change and its impact on human society.' This exchange underscored the stark difference between the timescales of Earth's natural processes and those of human civilization.

The second session, titled *Extreme Life in the Ocean*, was the biology session for which Falk-san and I served as PGMs (the U.S. PGM, Niko-san (Nikolaos Papastavrou), was absent). Torben Riehl (Germany) presented on the remarkable diversity of organisms inhabiting the deep-sea floor; Masaru Nobu (JAMSTEC) spoke about Asgard archaea, a group believed to be closely linked to the origin of eukaryotes; and Jeff Bowman (United States) discussed research on extreme environments with an eye toward the search for extraterrestrial life. Learning that deep-sea corals can live for over 4,000 years and withstand pressures of 1,100 atmospheres in the deepest regions left me with a profound sense of the resilience of life. During the discussion, participants agreed that the very concept of 'extreme' depends on the observer's perspective. What we consider an extreme environment is simply everyday life for the organisms that inhabit it. The session also featured lively debate on the origins of life, with multiple hypotheses—such as the hydrothermal vent hypothesis, the extraterrestrial origin hypothesis, and the shallow-sea hypothesis—being discussed.

A poster session was also held on this day, offering a valuable opportunity for participants to present their research. The format began with a one-minute flash talk in the auditorium, followed by a move to the poster hall for more in-depth discussion. The flash talks carried a certain pressure, as exceeding the strict one-minute limit resulted in an immediate cutoff. Sarah-san (Sarah King), the U.S. PGM Co-chair, managed the session with impressive efficiency—striking the perfect balance between maintaining time-keeping tension and ensuring the program ran smoothly. Her skillful facilitation was truly something to aspire to.

The poster session followed the typical free-mingling format commonly used at academic conferences, with presenters divided into odd- and even-numbered groups for the first and second halves. However, the second half coincided with a standing buffet dinner—complete with drinks—which created a more casual atmosphere, shifting the focus from research discussions to informal conversation, especially compared to the first half. Even so, it still proved to be a valuable opportunity to foster deeper interactions among participants.

Visualizing the methods or technical details of research can be challenging, especially when the work lies outside one's own field. However, when it comes to understanding the underlying motivations—what drives the research and the questions the researchers aim to answer—unexpected commonalities often emerge. These shared motivations serve as a valuable entry point for cross-disciplinary dialogue.

In the United States and Germany, it seems that participants are typically selected from research fields closely aligned with that year's session topics. In contrast, the selection criteria in Japan place less emphasis on this alignment. This difference is worth keeping in mind. For participants who are not speakers, the poster session is essentially the only opportunity to showcase their research. I strongly encourage future FoS symposium participants to register for a poster presentation.

Day 3

The day began with a bus ride, followed by breakfast at the venue. By the third day, participants seemed to have settled into the rhythm of the schedule, and conversations at the breakfast tables flowed more naturally.

The third session, held in the field of computational science, was titled *Artificial Scientist* and focused on the automation of scientific research through AI. Given the recent advances in AI that are impacting nearly every discipline, this was one of the most highly anticipated topics among participants. Ryohei Sasano (Nagoya University) introduced Sakana AI's "AI Scientist", a system capable of automating the entire research cycle—from hypothesis generation to experimental design and even manuscript writing—for as little as \$15. Diyi Yang (United States) discussed the so-called "execution gap," explaining that while AI-generated ideas often exceed human ideas in novelty, their performance tends to decline when put into practice. Steffen Eger (Germany) presented technologies for automatically generating figures for scientific papers.

During the Q&A, there was a moment that drew laughter from the audience. In response to the comment, "It's hard to believe you can run an entire experiment for just 15 dollars," the reply came: "Well, we don't yet have drones that can collect blood samples from alligators in a swamp." It was a humorous way of highlighting the boundary between what AI can automate and what still requires human intervention in the field.

The fourth session, in the field of physics, was titled *Flows and Pattern Formations*, focusing on turbulence—a phenomenon that occurs universally across scales, from the inside of a coffee cup to supernova explosions. Motoki Nakata (Komazawa University) opened the session with an engaging introduction, quoting Heraclitus's famous saying, 'Everything flows.' David Vartanyan (United States) presented simulations of supernova explosions, while Claudia Brunner (Germany) explored the relationship between wind turbines and turbulent flow. During the discussion, an intriguing topic emerged: ongoing research comparing the spatial arrangement of fish schools to the optimal placement of wind turbines.

After lunch, the afternoon was dedicated to group work. Participants with related research areas were divided into groups of about ten, with the PGMs serving as moderators to guide deeper discussions on shared topics of interest. In practice, it proved challenging to maintain an interactive conversation while ensuring that everyone had a chance to speak. When the discussion veered too heavily toward technical science, it tended to be dominated by only a few individuals, making balance all the more crucial. One effective technique for keeping the conversation flowing smoothly was to set a specific theme and have each speaker randomly select the next person to speak.

The only off-site event during the JAGFOS program followed soon after: a visit to Laguna Beach, not far from the venue. This beautiful stretch of coastline is home to a charming town, where we explored a local art museum. I was particularly struck by something the guide said: "What you feel when you look at this painting—whatever it may be—is always the correct answer." It was a moment that highlighted a value system unique to the arts, one that contrasts with the scientific world, where we seek objective, mutually verifiable answers.

After the museum visit, we were given some free time. I joined many of the other participants for a walk along the beach, enjoying the sight of the Pacific

waves rolling ashore. Near the shoreline, we discovered tide pools, and each time someone spotted a large sea anemone or a brightly colored fish, the group burst into cheerful excitement. Watching the participants specializing in oceanography turn over rocks in search of sea slugs felt almost like a treasure hunt—a moment that sparked a childlike sense of wonder.

That evening, dinner continued the off-site program with a full-course meal at an Italian restaurant. The avocado dip served as a side dish was exceptional, and once we started scooping it up with tortillas, no one at the table could stop. We even ordered extra portions. By the time the main course arrived, I was already quite full and, regrettably, couldn't finish it.

At my table were researchers whose work centers on field studies, and they had an endless supply of fascinating stories. What surprised me most was hearing from a social scientist who studies hurricane disasters and community resilience. She enters affected communities to assess their needs firsthand. As a trained social worker, she had an exceptional ability to draw information from people—so much so that even those meeting her for the first time naturally opened up and shared their honest thoughts. Watching her in action made me realize what true communication skills look like. As with my previous participation, the conversations I had with social scientists left the strongest impression on me. Their approach to understanding the world—so different from that of the natural sciences—always offers a refreshing and stimulating perspective.

Day 4

At last, the final day arrived. Although two morning buses were available, the number of participants boarding the first one had been steadily decreasing. The intensity of the program over the past several days had clearly taken its toll. I must admit, I too found it increasingly difficult to wake up each morning.

The fifth session, in the field of social sciences, was titled *Shrinking Society and Shrinking City?* Kojiro Sho (University of Tokyo), serving as PGM, discussed the relationship between population decline and the concentration of people in Tokyo. Michael Weinhardt (Germany) presented on creating age-friendly cities, and Takashi Aoki (Osaka University) examined transformations occurring in Japan's suburban residential areas. What left the strongest impression on me was his observation that Japan's demographic shrinkage is not an 'edge-out' contraction but rather a 'thinning' of the entire population. Instead of people disappearing from the urban periphery first, the density decreases evenly across the whole area. This perspective articulated a change in Japanese society that I had only sensed vaguely until now.

The final session, in the field of chemistry, was titled *Flatland: The Materials Science and Chemistry of Two-Dimensional Materials*. Alexandra Velian (United States) spoke about the unique properties of graphene; Eisuke Yamamoto (Nagoya University) presented on the two-dimensionalization of non-layered compounds using a solid surfactant templating method; and Alwin Daus (Germany) discussed device integration and energy challenges. Among the presentations, a video demonstrating how one could "fry an egg on a CPU" drew laughter from the audience while powerfully highlighting the heat-generation issues faced by modern electronics. The use of humor to address such a serious problem left a lasting impression, serving as a model of effective presentation.

During the closing remarks, Sarah-san spoke first, followed by myself, and then Emily Lane (AvH), each delivering a short address. In my remarks, I used a presentation deck to reflect on the word "We," which had appeared more frequently than any other term throughout the four days of presentations. I observed that the scope of "We" varied dramatically across disciplines. In biology and chemistry, "We" typically refers to a single research team; in Earth sciences, it denotes a consortium of multiple teams; in physics, it often encompasses an entire field; and in the social sciences, it can even refer to society as a whole. I concluded with the message: "Through JAGFOS, why don't we try to broaden our sense of who 'We' includes?" In my own field of biology, competition between laboratories is intense, and this environment tends to narrow our perspective. In contrast, Earth scientists and physicists have a deeply rooted culture of sharing instruments and data. Realizing this difference was one of the most valuable takeaways from the symposium.

At long last, some free time arrived on the final day. For the next-term PGMs, however, it was not a moment of rest, as the second part of the PGM meeting was still ahead, but for the other participants, it was a welcome chance to relax.

I took a walk to Balboa Beach, and when I arrived at the peninsula via a small ferry, I was greeted by an expansive shoreline stretching as far as the eye could see. It was just around sunset, and the sky shifted smoothly from orange to deep blue. As I listened to the sound of the waves, I finally felt a true sense of being abroad. Watching the sun sink into the ocean felt like a privilege unique to the West Coast.

My return flight was a red-eye. On the bus to the airport, I happened to sit next to Isogawa (Mariko Isogawa), the next-term PGM Co-chair. Our conversation became one of my fondest memories of the trip. It reminded me of a similar moment in Kyoto, when I spoke with Suzuki, the previous PGM Co-chair, who reassured me despite my doubts about whether I was truly up to the task. Perhaps Isogawa feels the same way I once did, but I have no doubt she'll do wonderfully. She will bring her own strengths and style to the role and create an outstanding JAGFOS.

Responsibilities of the PGM Co-chair

The primary responsibility of the PGM Co-chair is to lead the PGM meeting held one year prior to the symposium. It is during this meeting that the session topics are selected, forming the framework for the discussions that will take place the following year.

I learned an important lesson about how to approach topic selection. When each member presents their own proposal individually, the discussion tends to take on the atmosphere of a competitive vote among proposers. A more constructive and collaborative approach is to present several potential themes as a unified set for the entire session, allowing the team to deepen the discussion together. In the first PGM meeting, Moni (Monica Munoz-Torres) prepared a cohesive slide deck filled with illustrations, giving the proposals a strong sense of unity. The well-organized, visually appealing presentation helped the discussion flow smoothly and greatly supported consensus-building. I hope this experience will be valuable for future PGM.

There was one more thing I made a point of doing: ensuring that all participants felt the PGM Chairs had developed a positive and collegial relationship. To that end, before the symposium officially began, I arranged a small tea gathering with Falk-san from Germany and Sarah-san from the United States. The three of us spent about an hour talking. Falk-san, a seasoned veteran attending JAGFOS for the fourth time, entertained us with stories about the remote area where Germany's national virology institute is located. Sarah-san, meanwhile, had made a strong impression on me during my first-year PGM meeting. I distinctly remember being amazed by how directly and confidently she spoke. Her conviction and willingness to express her views openly felt incredibly refreshing, especially for someone like me, who is more accustomed to reading the room.

There was also a moment during the symposium when Sarah's presence truly stood out. It happened in the very first session. Even once the Q&A began, participants continued texting their questions into the chat on their smartphones, creating an uncomfortable silence in the room. The discussion simply couldn't gain momentum through a screen. At that moment, Sarah leaned over and whispered to me, "Let's switch to oral questions." The two of us walked up to the microphone and began asking questions ourselves. That small action broke the ice—soon, participants began lining up at the microphone one after another, and the Q&A quickly came to life. I can still vividly recall the moment when the atmosphere in the room shifted.

For future participants

At the FoS symposium, participants stay at the same hotel and share meals together, engaging in enthusiastic conversations about the science that excites them. For researchers, this is an experience of unmatched value. At a typical academic conference, you often listen to presentations and think, "Maybe I could collaborate with this person," looking for opportunities for joint research. But the FoS symposium is different. Researchers from a wide range of fields and nationalities come together, and for many, it's a once-in-a-lifetime opportunity. That's precisely what makes it so meaningful. Realizing that such diverse fields exist, and that there are people tackling questions with such different approaches, forces me to reflect on my own research and expand my perspective.

So, what kind of person can truly enjoy the FoS symposium? In my view, it's someone who has a genuine interest in others' stories and is willing to dig deeper by saying, "Tell me more." It's also someone who can share their own passion—whether through the language of science or other ways. To be honest, my academic career has been entirely within Japan, and I've never lived abroad as a researcher. Even so, I was able to fully enjoy the symposium and was fortunate enough to serve as a PGM Co-chair. Fluent English or an impressive international background are, in fact, much less important than you might think. As long as you have the desire to embrace the experience and connect with others, that's more than enough.

Finally, I'd like to offer two pieces of advice to future participants.

The first is a simple yet highly effective tip: at each meal, choose a table where you haven't yet spoken to the people seated there. With this small habit, your world will undoubtedly expand.

The second is about mindset. I would like to share a piece of advice I once received from a member of the program committee: “No question is ever a stupid question—there’s always some essence behind it.” Simple questions, which only an outsider might ask, can sometimes get to the heart of a discussion. I once asked, in response to a presentation on global warming, “If other species better adapted to warming were to thrive, could that also be considered part of Earth’s evolution?” It might have seemed unconventional to the experts, but it sparked an unexpected and lively exchange. By deliberately throwing a curveball, you can draw the audience in and make the discussion more dynamic. I sincerely hope this spirit continues in the future.

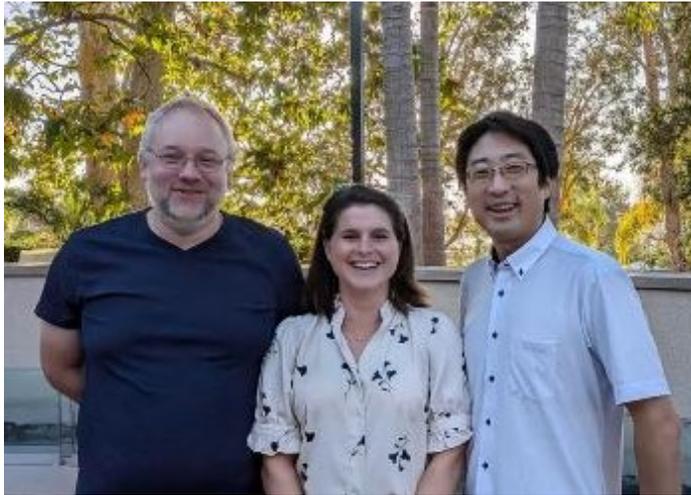
Conclusion

Finally, I would like to express my heartfelt gratitude to everyone who supported this year’s JAGFOS. I am deeply indebted to Executive Advisor Mizumoto and the members of the FoS Symposium Advisory Board, whose invaluable guidance shaped the event from the preparation stages through to its completion. In particular, their extensive networks—developed through leadership roles in initiatives such as JST PRESTO, the Fusion Oriented Research program, and others—were key in selecting outstanding speakers who excelled both in research and in their ability to communicate effectively.

I am also deeply grateful to the staff of the JSPS International Research Cooperation Division I, whose attentive support—from the preliminary meetings to the symposium—was a tremendous source of reassurance for me as a first-time PGM Chair. My thanks also go to the staff of the U.S. NAS and Germany’s AvH, whose efforts ensured smooth collaboration across countries.

To my fellow PGMs, who collaborated with me to shape the sessions and refine the discussions, and above all, to the speakers and participants who made this symposium truly meaningful, I offer my deepest appreciation.

It is thanks to the dedication of everyone involved that JAGFOS was carried out smoothly. I would like to take this opportunity to express my sincere gratitude once again.



PGM Co-chairs Falk-san, Sarah-san, and I warming up and bonding ahead of the symposium



JAGFOS 2025 Planning Group Members

With the cooperation of all 18 PGMs, we successfully energized the sessions on various topics and created a very meaningful JAGFOS.



JAGFOS 2025: Participants united

Group photo in the backyard of the NAS Beckman Center beneath California's warm, sun-filled skies



Speakers fine-tuning their presentation content at a Session Coordination Meeting



Yoshimichi Sato (center) delivers welcome remarks at the Welcome Reception, with Edward Patte (right).



Raising a toast at the Welcome Reception



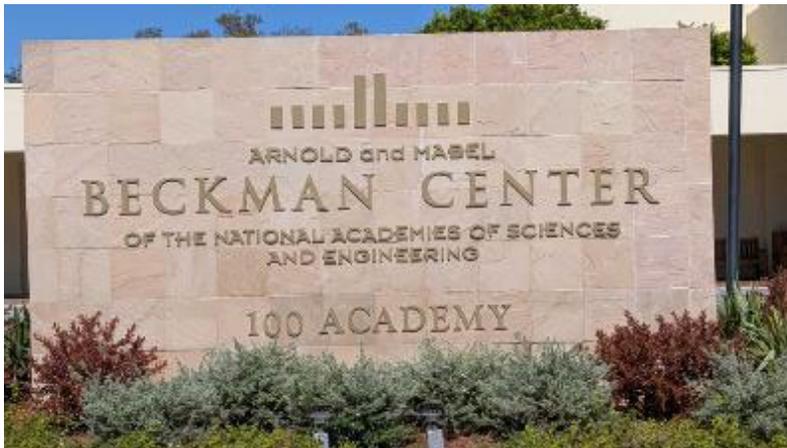
Breaking the ice at the Welcome Reception



Morning and evening shuttles between the hotel and the venue



Street name sign outside the NAS Beckman Center



NAS Beckman Center, venue for JAGFOS 2025



Exhibits inside the Beckman Center



The main auditorium used as the presentation hall for JAGFOS.



Atsuko Yamazaki delivers her presentation at the Earth Science/Geosciences/Environmental Sciences session.



Atsuko Yamazaki (Earth Science/Geosciences/Environmental Sciences) answers questions from the audience.



Masaru K. Nobu (Biology/Life Sciences) responds to questions during the discussion.



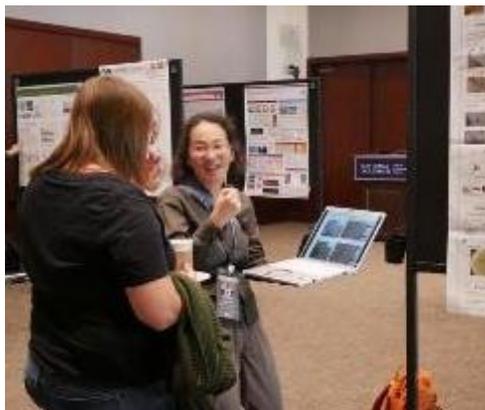
Sarah King, US PGM Co-chair, moderates a poster flash presentation.



Mariko Isogawa, next-term PGM Co-chair, gives a poster flash presentation.



Networking over coffee



Michiko Shimokawa presents her poster using a laptop.



Poster presentation session



Lunch outdoors



Ryohei Sasano responds to questions during the (Applied) Mathematics/Computer Science/Engineering discussion.



A long line of questioners during the (Applied) Mathematics/Computer Science/Engineering discussion



Motoki Nakata, in a T-shirt featuring mathematical formulas, gives his talk in the Physics/Astrophysics session.



A glimpse of the workshop



Admiring paintings in the museum



Laguna Beach, where the shoreline stretches endlessly.



Searching for marine life on the rocky shore at Laguna Beach



A giant sea anemone spotted on the rocky shore



Enjoying Italian dinner in Laguna Beach



Kojiro Sho presents in the Social Sciences session.



Takashi Aoki (Social Sciences) responding to questions during the discussion



Questioners in line — discussion time in the Chemistry/Materials Science session



Eisuke Yamamoto (Chemistry/Materials Science) responding to questions during the discussion



Asuka Inoue delivers a "We" message during the closing remarks.



Hamburger lunch break



The final day's sun sinking into the Pacific



PGM meeting at JAGFOS 2024 for planning JAGFOS 2025