

Okinawa Microscopy Workshop 2024

*Bringing together the microscopy communities from
Japan and Southeast Asia*

2-7 April 2024

Final Report



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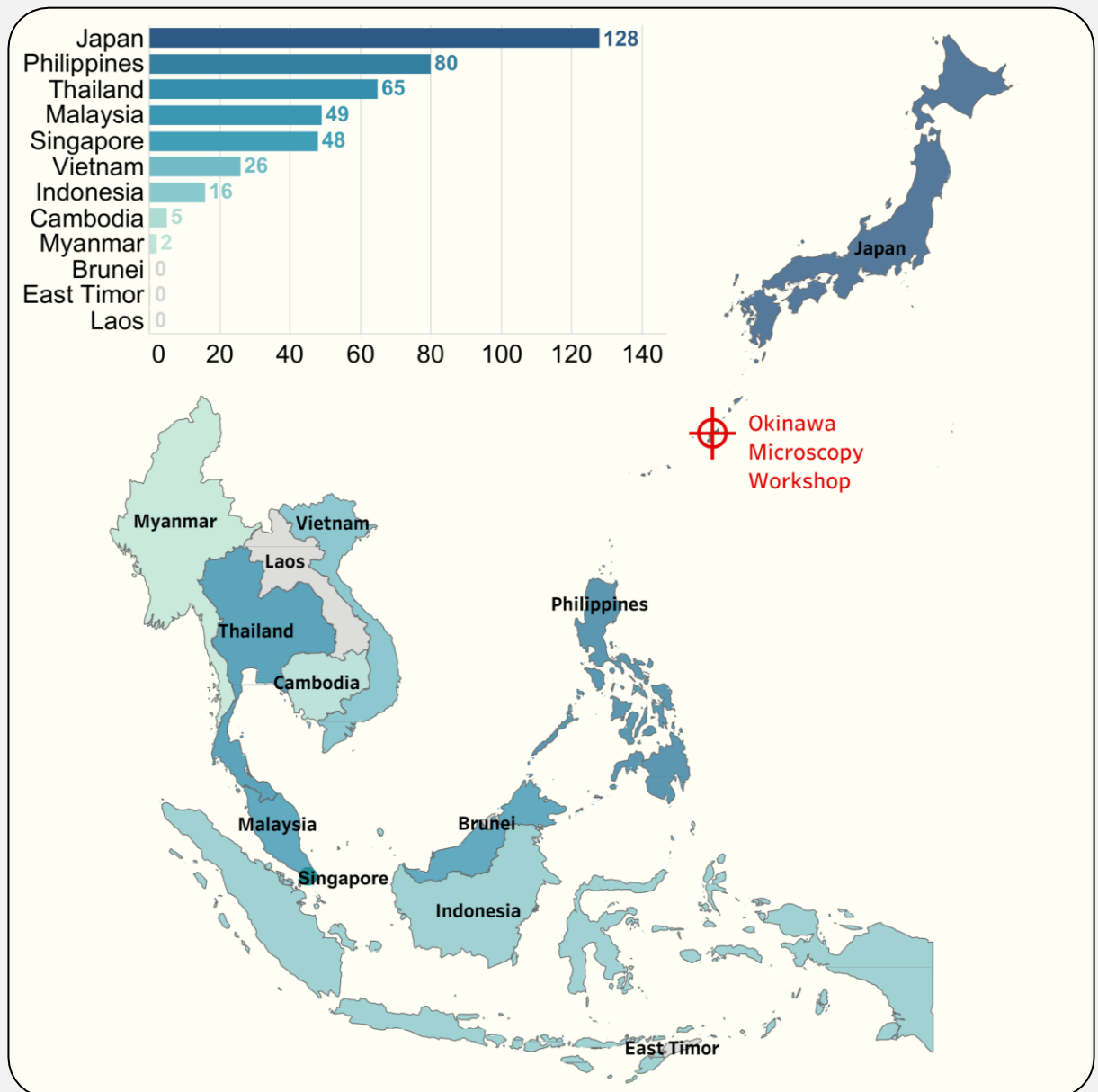


Workshop Registration: *Geographical Data of Applicants*

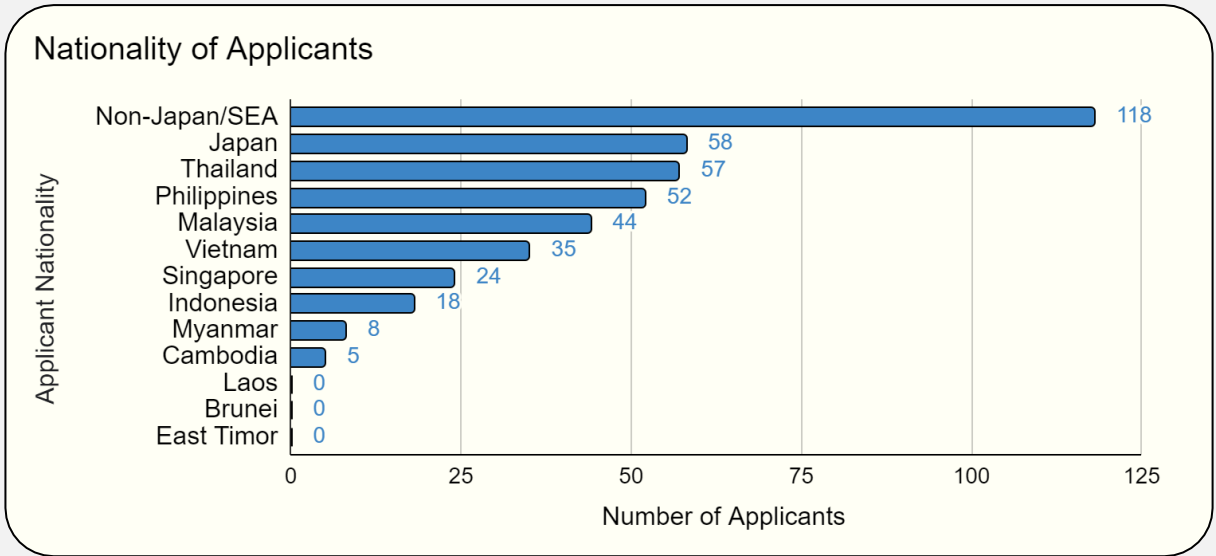
An overwhelming number of applications were received for 30 available slots (15 for Japan and 15 for Southeast Asia) at the workshop.

Total applications = 451

- Japan = 128
- Southeast Asia = 291
- Ineligible (Rest of the world + Duplicates) = 32



Workshop Registration: Geographical Data of Applicants



Pre-workshop photo of teaching team.
Photo credits: Teng-Leong Chew



Auditorium

OIST

Jesse Aaron

Owen Puls

Michael DeSantis

Harikrushnan Balasubramanian

Mai Rahmoon

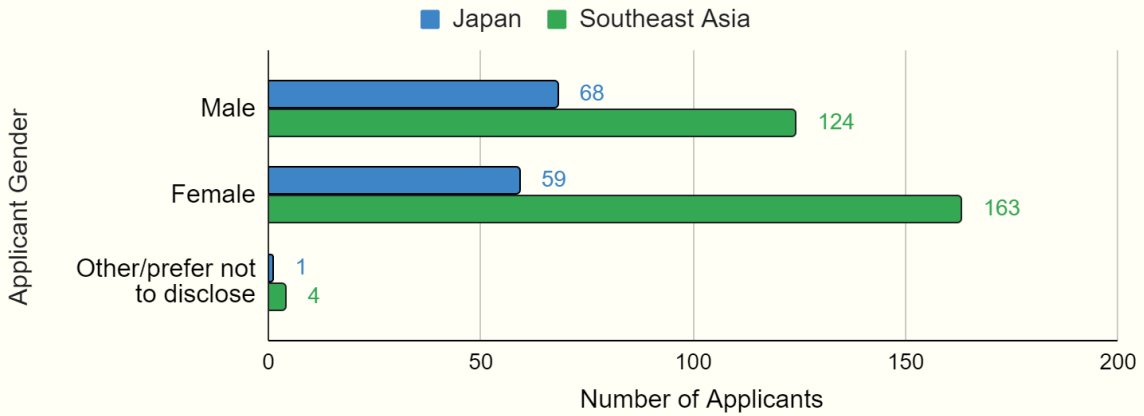
Satya Khuon

Michelle Itano

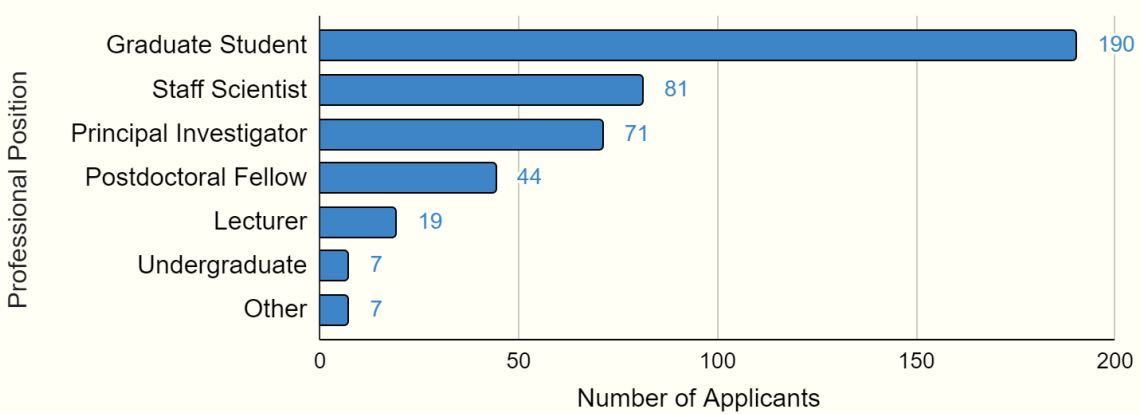


Workshop Registration: *Applicant Profiles*

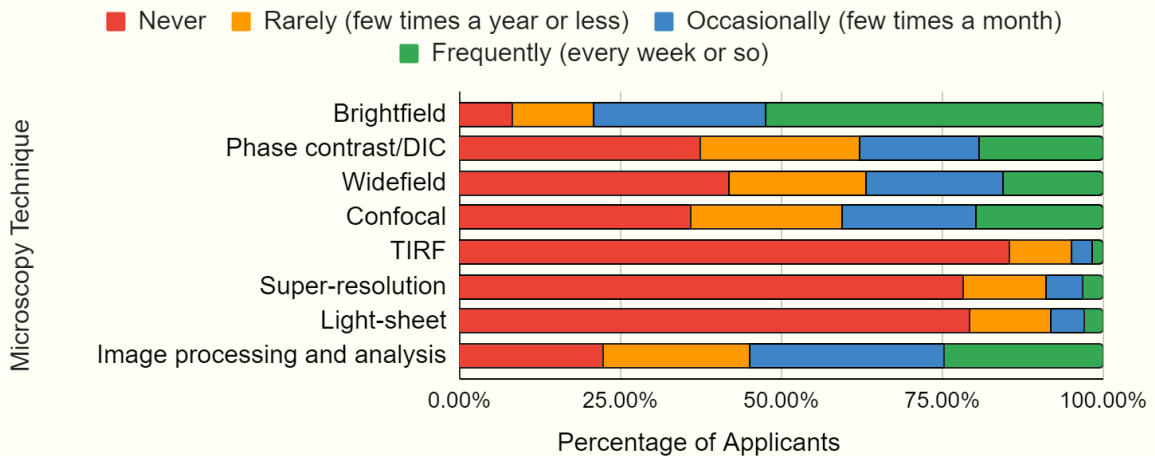
Gender of Applicants



Professional Position of Applicants



Microscopy Experience of Applicants



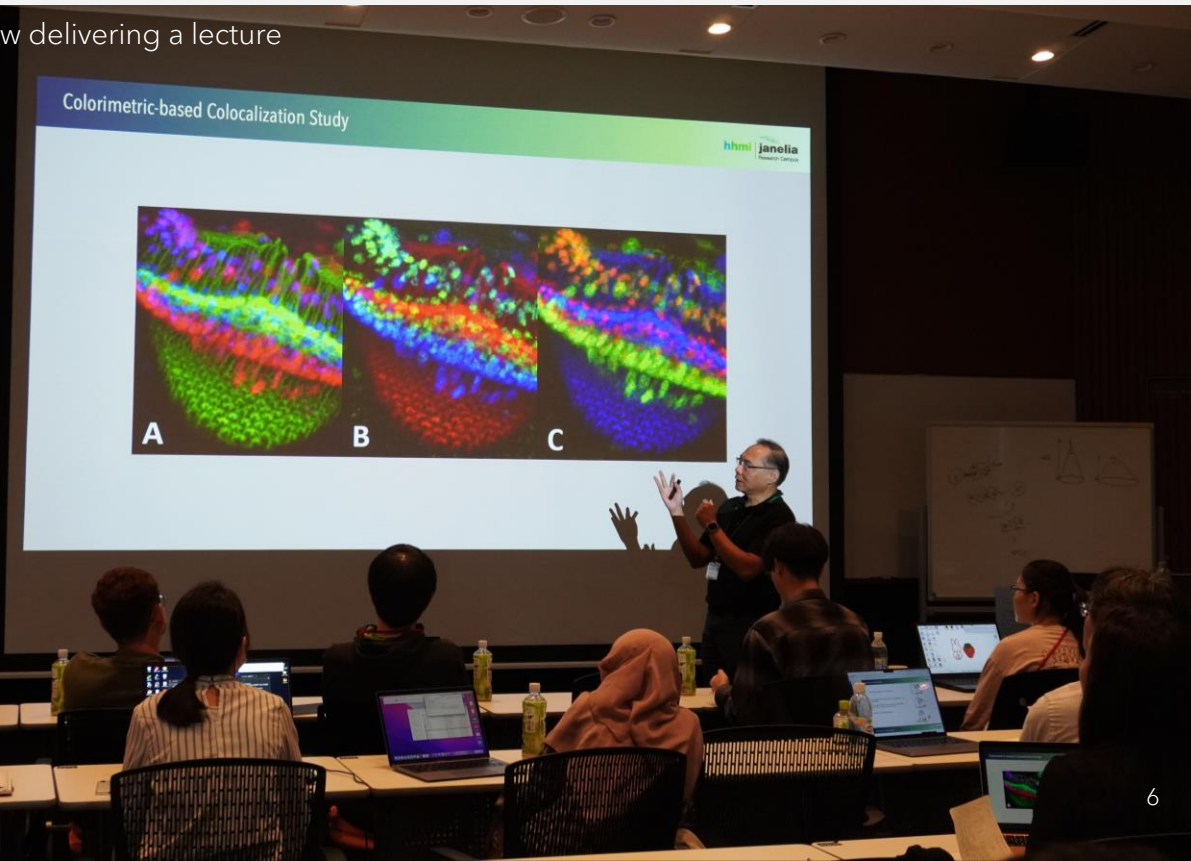
Summary: *Overall Impressions*

Consistent with the AIC's track record, the course evaluations for the Okinawa Microscopy Workshop 2024 were overall extremely positive.

"I really thank all the lecturers and organizers for this wonderful opportunity to learn microscopes in a very detailed fashion. I have never had this type of experience before, so it was a wonderful week. I appreciate the staffs from OIST for taking care of us. Applaud for Zeiss, Tokai hit, Andor, HHMI, OIST, and other sponsoring companies to make this happen."

"Overall workshop is great, fruitful, and beneficial for me. I [had a] hard time to understand some topics but I think I can cover it up later on as I know whom to contact and the community that might help me on this. It is great that this workshop allow the participants to interact with each other as well as the instructors. It is seriously in-depth in the knowledge in this field and there are many things that I have learnt and I have never heard of. The most important things that I like the most is the willingness to help us to understand the bioimage field and to grow the community in right way. The instructors are very supportive and very passionate to accomplish this ambition goal. I really admire of what you have done so far and I hope this positive energy will be continuous endlessly generation after generation. Thank you very much :)"

Teng-Leong Chew delivering a lecture

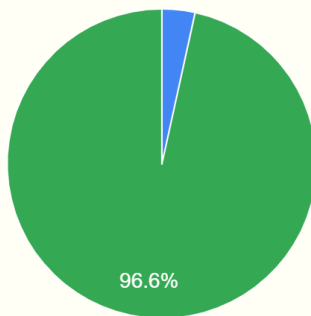


Summary: Knowledge Gain by Participants

All the participants, hailing from various career stages and having diverse knowledge backgrounds, noted significant advancements in their understanding of microscopy following the workshop.

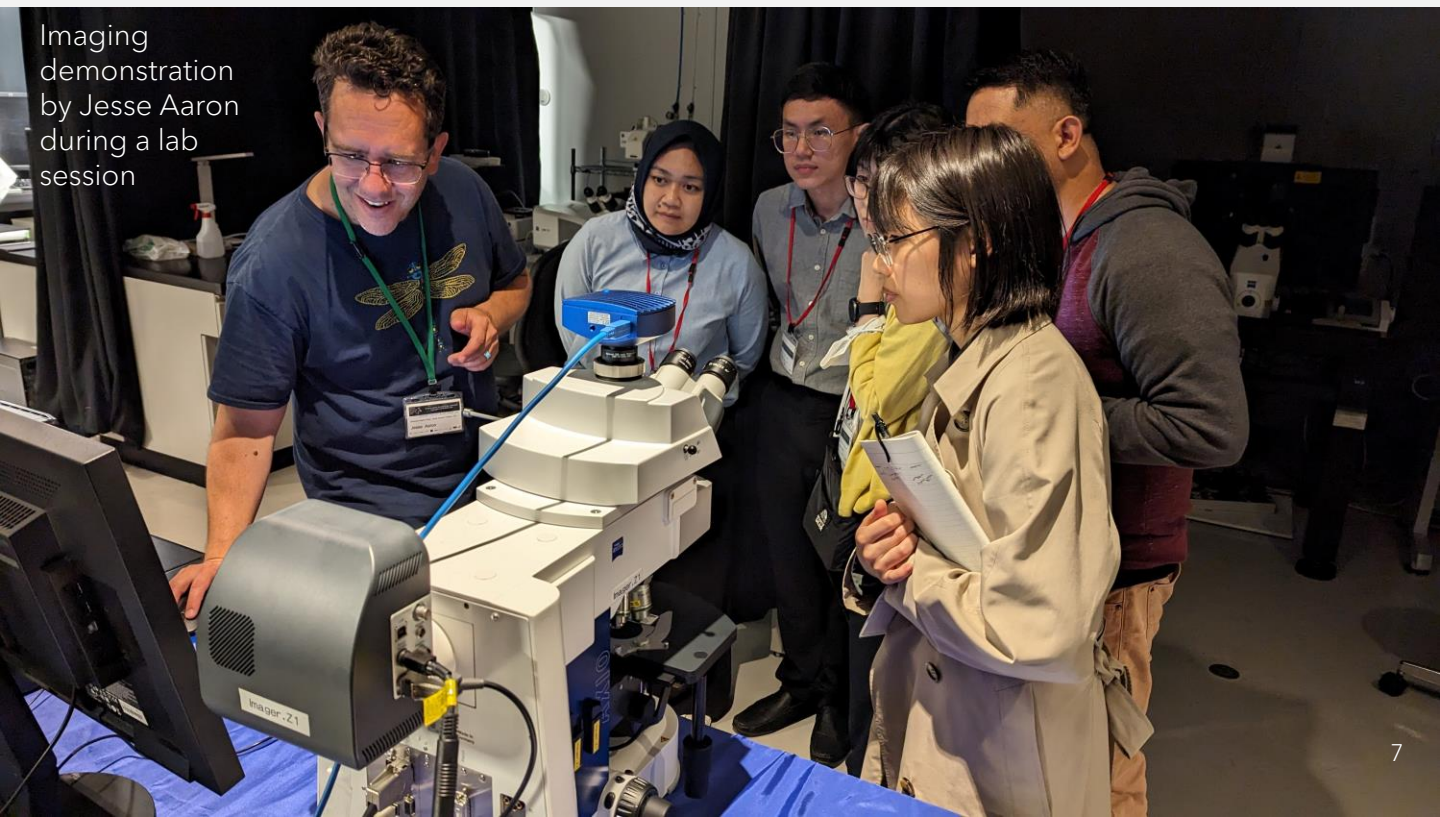
"Thank you all. I never thought my view of microscopy and cell biology would change so much (I actually studied theoretical physics, including complex systems). I am also thankful for the friends I first met in this course."

How has the workshop improved your microscopy knowledge?



- It has not improved (because I already knew the material)
- It has not improved (because the instruction did not improve my understanding)
- It has improved somewhat
- It has improved greatly

Imaging demonstration by Jesse Aaron during a lab session



Summary: *Peer Networking*

The participants were extremely appreciative of the opportunity provided to build a Japanese-Southeast Asian bioimaging network.

"I would like to appreciate all from AIC and OIST for this wonderful opportunity to learn and connect with scientists from Japan and SE Asia. It has been a fantastic learning experience."

"Thank you so much for the organizer for organizing such a great and fruitful workshop as well as building our network through this. You all did a wonderful job and hard work. Hope we can keep contact with each other in future."

"...some of us SEA [Southeast Asians] was thinking about creating a group/society/community, but we would need a lot of help and support from each other to do that..."

"Communication and networking. Actually, I'm not good at social interaction and not good at public speaking too. So, this is so good for me to have chance participated in this kind of workshop which benefit the most, both social interaction, network building and technical upgrade for my capacity development and career."



Participants working on a class challenge

Summary: *Future Workshops in the Region*

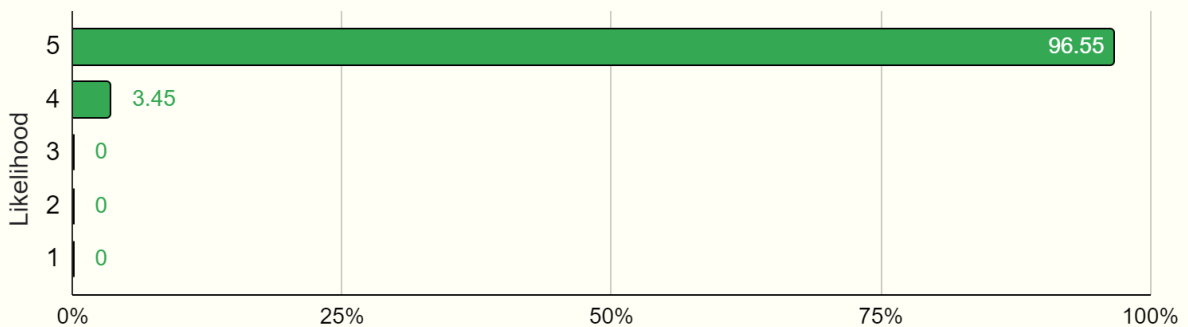
The participants unanimously advocated for future iterations of this workshop in the region, with individual interest in hosting such courses in their home countries. Furthermore, they expressed their willingness to recommend others to attend such future workshops.

"Yes!! I would say some of my friends missed this opportunity due to the selection rate, so I would like this workshop to be held in East/Southeast Asia someday again!"

"Yes. I prefer this kind of workshop to be held in Asia again (maybe in first world countries like Singapore that [are] equipped with better microscopy facilities). But I hope this workshop can open more slots for Southeast Asia that [are] really under-represented in the microscopy era."

How likely would you be to recommend others to attend similar future workshops?

(5 - Very Likely, 1 - Very Unlikely)



Summary: *Suggestions from Participants*

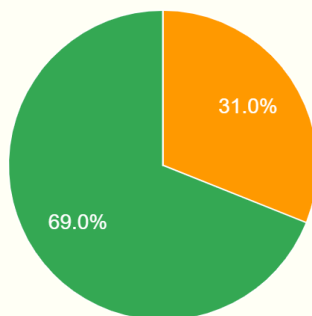
The workshop spanned six days, beginning at 9 am after breakfast and continuing until dinner at 7 pm, with breaks for lunch and coffee interspersed between lectures and practical sessions. Suggestions for the course focused predominantly on time constraints and the overall workload, with several students asking for some free time in the schedule.

"Maybe loosen the schedule a little bit, the very tight schedule somehow made us drained and tired and could not focus to the lectures."

"If possible, I hope the workshop schedule can be loosen, so the students can have more time to digest the information, if the funding and facility allows us to stay more days."

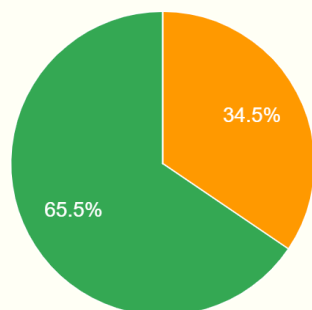
"I would prefer it if we have a bit of an off day to be able to at least explore the surrounding area. We didn't even have time to have a tour of OIST."

How would you rate the pace of the workshop?



- Too fast (too much material, not enough time)
- Just right (appropriate amount of material and time)
- Too slow (not enough material, too much time)

Were there enough opportunities provided to network with other attendees and teaching faculty?



- I would have liked more time to interact with other attendees and faculty
- It was an appropriate amount of time
- I would have preferred less time to meet with other attendees and faculty

Summary: *Further information*

The complete responses of the post-workshop course evaluation by the participants are provided in Appendix I.

For further information about the workshop watch the below videos:

Okinawa Microscopy Workshop 2024: A Chat with the Workshop Participants

<https://youtu.be/s-vDO1NiUI4>

Okinawa Microscopy Workshop 2024: A Retrospective by the Organizers

<https://youtu.be/nV091zp0NUc>

Imaging demonstration by Mai Rahmoon during a lab session



Post-workshop Momentum in Southeast Asia

Dr. Chew traveled to Monash University Malaysia in Kuala Lumpur following the Okinawa workshop to meet with the Malaysian scientific community.

This community event, titled “Envisioning Tomorrow: A dialogue with the Advanced Imaging Center Director and Strategizing ASEAN Bioimaging”, was organized by Dr. Satoshi Ogawa, Director of Monash University Malaysia Optical Imaging Platform. It brought together more than 100 scientists from multiple universities in Malaysia, industry partners and as well as academic leaders. Prof. Ian Smith, Vice Provost of Monash Australia gave the opening remark before the Town Hall Meeting began.

The community explored the current challenges as well as the opportunities in building advanced imaging capabilities in Malaysia, and in the greater Southeast Asia region. Encouragingly, the local stakeholders have already explored how they could attain funding sustainability through the next 5-year federal Malaysia Plan (The 13th Malaysia Plan, 2026-2030). The initial community survey and the on-site discussion points were captured in a PowerPoint presentation and is available from Dr. Ogawa upon request.

This community discussion culminated in the founding of the Advanced Imaging Malaysia (AIM) network. This will serve as an important nucleating factor to begin building the regional microscopy infrastructure and community. Dr. Chew will begin working with AIM to strategize how the AIC can support this momentous development.

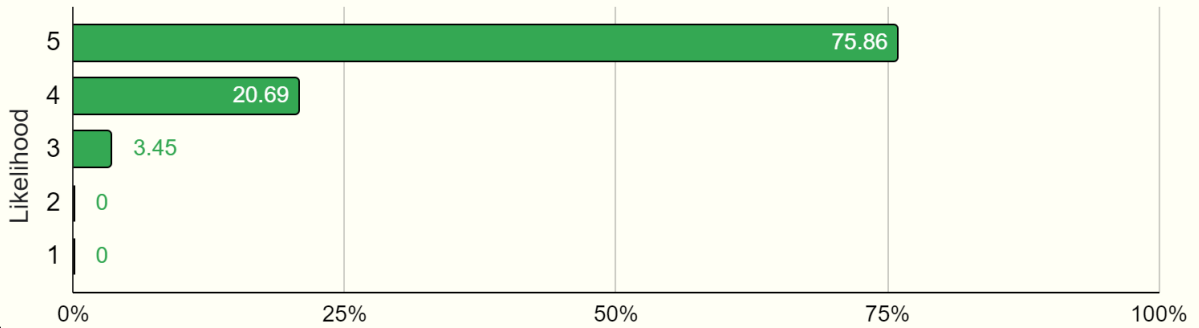


Appendix I: Post-workshop Course Evaluation

Workshop Amenities

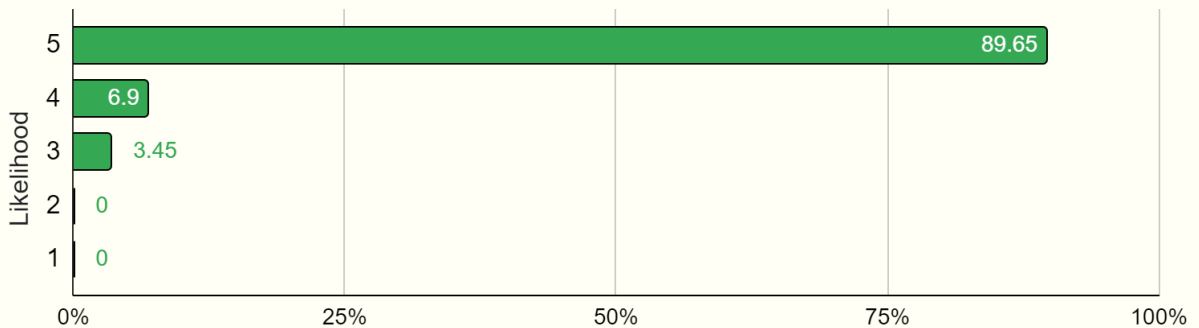
Arrival logistics (pre-arrival instructions, check-in, etc.)

(5 - Strongly Liked, 1 - Strongly Disliked)



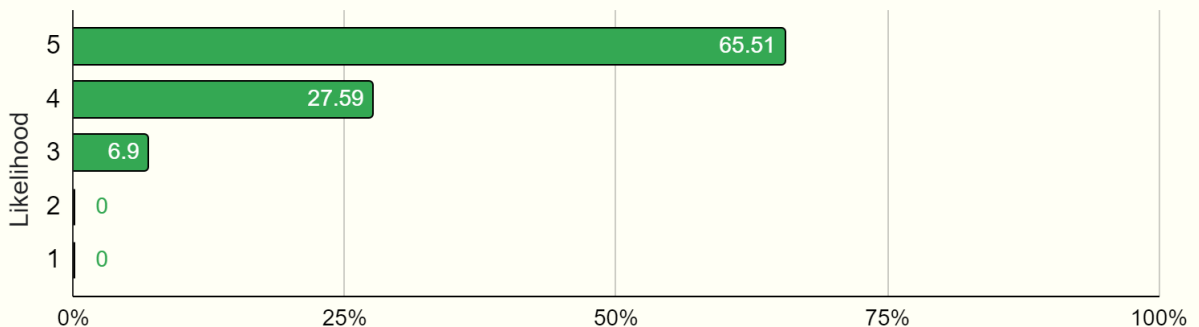
Transportation to and from the workshop and your home institution

(5 - Strongly Liked, 1 - Strongly Disliked)



Hotel Accommodations

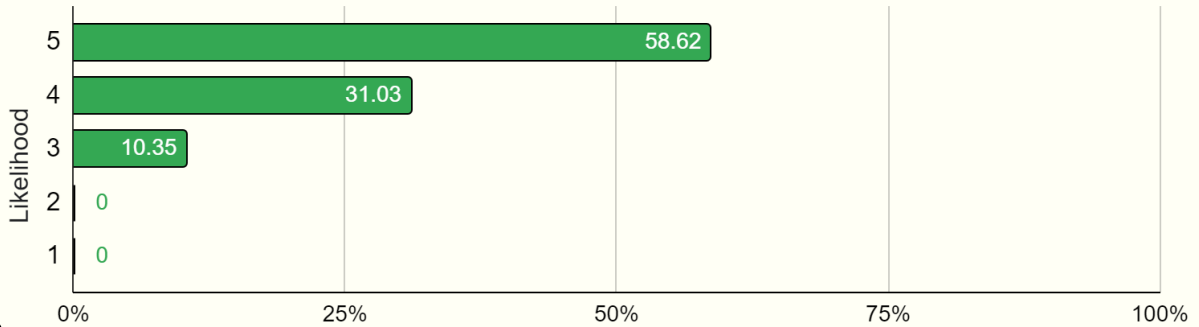
(5 - Strongly Liked, 1 - Strongly Disliked)



Appendix I: Post-workshop Course Evaluation

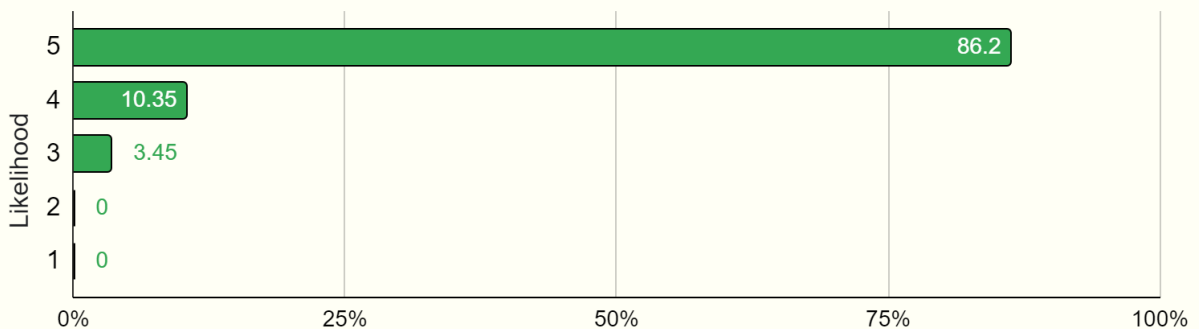
Food services and quality

(5 - Strongly Liked, 1 - Strongly Disliked)



Welcome reception

(5 - Strongly Liked, 1 - Strongly Disliked)

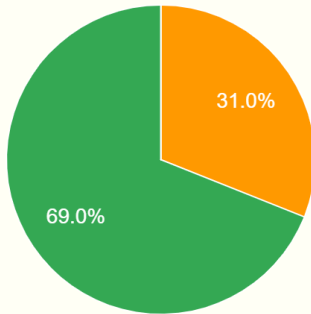


Networking at breakfast

Appendix I: Post-workshop Course Evaluation

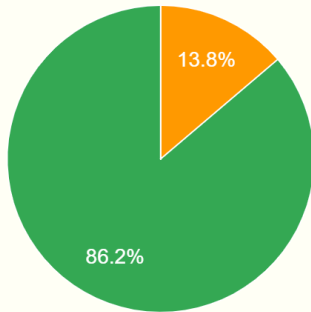
Course Material

How would you rate the pace of the workshop?



- Too fast (too much material, not enough time)
- Just right (appropriate amount of material and time)
- Too slow (not enough material, too much time)

How would you rate the difficulty of the material presented during the workshop lectures?



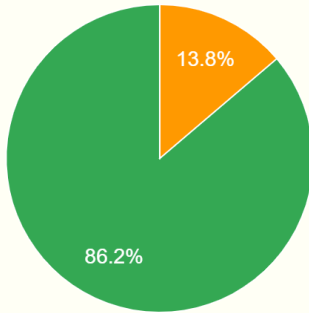
- All material was too difficult
- Most of the material was too difficult
- Most of the material was at the appropriate level
- Most of the material was too easy
- All material was too easy



Owen Puts delivering a lecture on data analysis

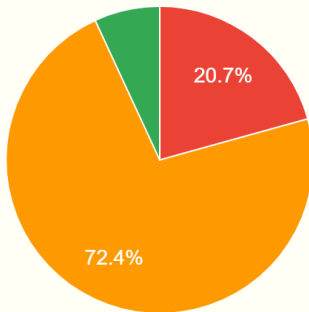
Appendix I: Post-workshop Course Evaluation

How well did the hands-on practical sessions reinforce the lecture material?



- The hands-on practical sessions did not match the lecture material
- The hands-on practical sessions matched some of the lecture material well, but not others
- The hands-on practical sessions matched nearly all of the lecture material well

How would you rate the balance between lectures and hands-on practical sessions?



- I would have liked more hands-on practical sessions and less lectures
- The balance was appropriate
- I would have liked more lectures and less hands-on practical sessions



Imaging demonstration by Shinya Komoto and Koji Koizumi during a lab session

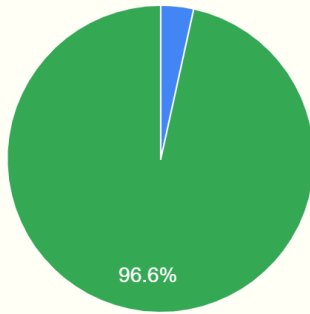
Appendix I: *Post-workshop Course Evaluation*

If you feel it is required, how would you change the workshop schedule?

- Have a longer rest to go out and play around, which may contribute to partnership and friendship.
- no change
- None
- I would prefer it if we have a bit of an off day to be able to at least explore the surrounding area. We didn't even have time to have a tour of OIST
- more on hands on session, the time is not enough
- Pre workshop material to ensure all participants have a fundamental understanding of the working principles of the microscopes.
- I particularly wish to prolong the hands-on microscopy time, because it's a bit in a hurry and short time for the hands-on microscopy time. And maybe 1 free day to enjoy Okinawa together :D
- Schedule is nice but I am getting tired near last day :)))
- I would like to get more time to group work.
- I think too tight schedule.
- The schedule was reasonable.
- It would be nicer if there was time to tour in and around the OIST campus. The pace itself was OK but too tight.
- It requires time to digest all the information. Especially, the one who has less experience in microscope as well as data analysis.
- There was not enough time for group work.
- Make it slightly shorter (~ 5 days), since being away from work for more than a week is sometimes hard
- Approvable, if I take review time every night.
- Need some time to digest information
- If possible, I hope the workshop schedule can be loosen, so the students can have more time to digest the information, if the funding and facility allows us to stay more days.
- It's maybe just right to other participants. but for me, I need more time to think on some principle and hardly remember some terms of the microscope techniques. I always go back to look up my notes to understand the next lectures.
- I wouldn't change the schedule since the speakers covered from basics to advanced topics
- one or half-day holiday in the middle of the workshop
- Since we only have a week, it is only reasonable to have such a schedule, however, for future workshops, it would also be good to consider have a day or half a day to relax through tours, shopping time, etc.
- I feel like there is not enough time for us to complete the tasks in the class challenge sessions. But I understand that challenging is more important than completing....
- one afternoon - free so that we can run for some personal errands
- I like the schedule and arrangement of each days. However, at least there should be 1 day free activities to explore Okinawa (e.g. this is very first time for those people who come to Japan or Okinawa).
- Amount of materials is just right! However, I feel that we need more time for class challenge, and I would like to increase the microscopy hands-on practical time slightly. Totally, it is happy for me if you could add one or one-half day to the workshop schedule.
- The class project time was too short for me.
- I feel to be satisfied.
- I think the schedule is reasonable, no need to change

Appendix I: *Post-workshop Course Evaluation*

How has the workshop improved your microscopy knowledge?



- It has not improved (because I already knew the material)
- It has not improved (because the instruction did not improve my understanding)
- It has improved somewhat
- It has improved greatly

Which topics and sessions did you find the MOST useful?

- NA for resolution
- tracking
- Fourier transformation and image processing
- Data analysis
- image analysis
- The analysis and exposure on advance imaging techniques
- image processing, data analysis, super resolution microscopy
- I didn't know almost microscope and technique, so everything is useful for me.
- How to use Fiji
- Live imaging
- Live imaging, machine learning, deep learning
- Image analysis
- Data analysis through Fiji
- Super-resolution microscope, image analysis
- Fiji class projects
- Lightsheet, as I expected. In addition, some advanced fluorescents techs were interesting.
- Fourier Transformation
- I found the most useful topic for me is the Fiji analysis including denoising, segmentation etc. These topics are able to apply immediately.
- Live cell imaging, super resolution technique and colocalization
- Everything
- colocalization, advanced imaging techniques, Fourier transformation in microscopes
- Image processing and analysis
- Class challenge session, which made us think how we can tackle the real biological questions.
- Different fluorescent modalities
- Introduce to microscopy. 2) Digital images as quantitative data source and machine learning. 3) Imaging Lab.
- Individual microscopes may not be used depending on what type of experiment is being performed. Then, the basic concepts and precautions regarding imaging analysis were especially useful because they can be applied to any research.
- Analysis Lab I: Live Cell Imaging
- Group work, especially "Hypothesis and Experimental Design". It was challenging for me. I would like to improve my skills.
- Tracking

Appendix I: *Post-workshop Course Evaluation*

Which topics and sessions did you find the LEAST useful?

- nothing
- none
- colocalization
- Fundamentals of digital images
- None
- -
- The talk from Zeiss
- Actually topics is useful but my knowledge and experience is too poor.. so I feel sad ::)
- Mathematical section
- Noting
- All were indispensable
- Super-Resolution Techniques
- There were no useless lectures.
- live cell imaging lecture session (some topics had been already mentioned in other sessions)
- airscaan? i didnt find out the way of use comparing to the others.
- The least useful topic for me is the machine learning. I think the technique is still developing and uncertain.
- I don't really know because everything is useful for me. but maybe the least useful is Bias session on the last day?
- Nil
- Sample preparation discussion (because it was set up suddenly, I think)
- None. All of the topics are very useful and can be applied in the workplace.
- Every session was useful!
- introduction
- For me all are useful and co-related to understand and consequentially to catch up and follow up each series of the training.
- Basically, all topics and sessions were useful. For example, although I have some knowledge for the basic theory of microscopy, even in the lecture, I could I find some useful information.
- Zeiss talk (Sorry)
- darkfield microscopy. I was interested in the system, but I don't think I'll use it.
- no

Appendix I: *Post-workshop Course Evaluation*

Were there any topics not covered that you think would be useful to include in future workshops?

- -
- No
- Coding for image processing and analysis.
- yes
- None
- I would prefer a more in depth of fluorescent microscopy
- Data presentation for journal articles.
- the hands-on microscopy is not enough, maybe increase the time and portion for the hands on in future would be better. Sometimes not all people in the group could try handling the microscopy technique
- Tip of Sample preparation. but it's a out of theme ;))
- No idea
- Electron Microscopy
- More emphasis on deep learning methods
- ImageJ macro/automation to apply the same analysis to all images in a folder.
- I can't think of anything. I think it was a fulfilling workshop.
- Some DIY technics for building up microscopes.
- Correlational analysis with various microscopes
- In my case no. As I really need to start from the fundamentals and know the recent technologies.
- electron microscopy
- FLIM
- All topics significant to Light Microscopy, I guess have been covered and discussed well.
- Writing FIJI macros
- 3D imaging analysis, high throughput imaging, different types of objects detection, different staining methods including live cell tracking
- I think, there should be including some technical of plants and insect data analysis as all trainee have various background and it might help more to understand and getting new insight to develop the future research idea, the data imaging and analysis. To know some basic or knowledge of the hardware microscopy maintenance should include too, especially the things related to optic or physical of the microscope (I can't use the right words, but related to that).
- Recently, I feel that both FLIM and Cyro-EM are powerful microscopy in biological research. Then the information and lecture for these microscopy would be useful in future workshop.
- Precaution of using microscope
- none
- object segmentation

Appendix I: *Post-workshop Course Evaluation*

Other Aspects

Which aspects of the workshop (not necessarily technical) did you like the MOST?

- The way to teach by lectures
- practice
- Hand-on practices
- I actually enjoy the lecture
- the hands on just after the lecture clearly explain more some of the aspect that we did not understand well on the lecture (because of novel vocabulary). The lecturers are very welcome on explaining every questions
- The hands-on workshop
- The venue and all workshop materials
- Live cell imaging
- Can make relationships between researchers Knowing about Janelia
- Class Project
- The interactive environment
- Interactive feature of the lectures, and the way lecturers confirmed whether we followed.
- Data analysis through Fiji
- Good balance between lectures and training.
- Staff members, especially Leong, were so encouraging the attendants to interrupt the sessions and ask questions
- The uplifting (encouraging?) atmosphere.
- Interactivity
- The teaching materials (slides, modules, equipment) are perfect and super easy to understand.
- everything is always on time
- The time and willingness of the speakers to always help
- Interactiveness, and I can learn the principles
- Getting acquainted with the culture where the workshop is being held and also gaining friends among the participants and increasing the networks as well for future research collaboration.
- Warm and kind environment from the participants and the instructors
- Well Structured, lectures are understandable to biologists, lecturer's expertise are very knowledgeable
- Communication and networking. Actually, I'm not good at social interaction and not good at public speaking too. So, this is so good for me to have chance participated in this kind of workshop which benefit the most, both social interaction, network building and technical upgrade for my capacity development and career.
- I liked the part where I could sense that all the lecturers had enthusiasm for microscopy and imaging analysis. Being exposed to their enthusiasm motivated me as well.
- Lively interaction between the teacher and students during the lectures, because the teacher often ask us questions.
- I had a lot of time to think and work with my hand by myself.
- Delicious meals, useful lectures, exchange new techniques and knowledge with experts

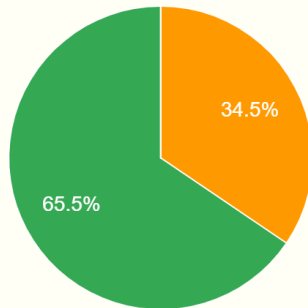
Appendix I: *Post-workshop Course Evaluation*

Which aspects of the workshop (not necessarily technical) did you like the LEAST?

- freezing lecture room
- cover
- Using only FIJI as a sole image processing and analysis tool
- None
- some microscope did not work, language barrier between the person that explain the hands-on session, not enough time on hands-on
- Fiji. Its important but participants need more time to explore the software to be able to do the in class exercise
- the highly-packed time schedule :(
- ummm I can't judge
- Twin room (because I think my room mate seemed to be stressful to share her room with other. I also feel stress arising from her attitude)
- some Keynote
- Technical issues of the microscopes during practicals
- I would like to have the names and faces of attendees before the workshop so we could have a head start interactions.
- Super-Resolution Techniques
- The schedule was a bit too tight. I had expected to have a half-day off (or excursion)
- OIST main building and seaside house should be open-doored at least the daytimes of the weekdays.
- Not have enough time to digest the information
- In my opinion, the food sessions are very long and it might turn into low quality chatting.
- this is the most intensive workshop ever. my head is almost boom on day 5 but I made it to day 5 with a lot of know technique of microscope.
- Nil
- Time for analysis lab was not enough
- Not many activities could be done after dinner, we simply stayed in our rooms for the rest of the night.
- OIST facilities were fantastic, and definitely I would like to come back here again, but I would say I wish if OIST were closer to the airport...
- finished a little bit late
- Venue and environment. I've been living in Japan for 5 years before. Thought, Japan is developed but some universities which I used to studies and visited during the conference or forum are not really equipped those kind of moderne facilities like OIST. So this is great to know that there is high resolution of microscopies and very international university which are very good for participant interests.
- Basically, No. But, I would have liked to have had a little free time during the day.
- I want to change of scenery (for example walking inside OIST)
- The schedule was full so we had less time to visit other places in OIST. (I would have liked to have taken the tour if I could have been guided.)
- no

Appendix I: *Post-workshop Course Evaluation*

Were there enough opportunities provided to network with other attendees and teaching faculty?



- I would have liked more time to interact with other attendees and faculty
- It was an appropriate amount of time
- I would have preferred less time to meet with other attendees and faculty

Describe how you plan to share the skills and knowledge you have learned with others.

- I may give a lecture of microscopy in classroom for the future.
- share skill and lecture with member in lab
- Share the workshop handouts and materials with those who use microscopes.
- I would definitely be able to apply it to my own work in the future. For others some of us SEA was thinking about creating a group/society/community, but we would need a lot of help and support from each other to do that. If my uni wants me to conduct like a sharing session on the things I've learned from this workshop, I'll be happy to do so.
- train in to the students
- To conduct a sharing session and share the slides and techniques that I learn to my research team. Most importantly to go through our imaging data and troubleshoot the problems that we are facing at the moment
- I will deliver the knowledge from this workshop through the activity in bioimaging center I managed. For example, through similar workshop and seminar, also will deliver it to the imaging research group in our university
- First, I learn more and make simple introduction note (separately) for my staff and students
- First, I will try to use Fiji to my data, then I will share the skill for my lab people.
- Need time to introduce yourself in front of all members (research topics, etc.)
- Organizing mini seminars and hands on sessions with colleagues
- I'm thinking of having a series of courses to teach optics, microscopes (at least what we have in our institute), and image analysis to graduate students at my university.
- I would teach the others as my role is core facility person and the PI. I would make the video for using as learning materials to my colleague and publicly share. I would write up the blog related to the knowledge that I have learnt here, to summarize and recap of what I have learnt.
- There are many microscopes and functions that we do not use in our lab. I intend to demonstrate not only the theory of optics, but also the use of those microscopes.
- I will try to have a Fiji hands-on session with colleagues.
- Tracking or de-noising is most basic skills in our lab. However, everyone process the images as their own way. I will hold open seminar on our lab. In addition, I'm planning to build my own openSPIM, which Michael told me. I will share this with my colleague.

Appendix I: *Post-workshop Course Evaluation*

- Through lectures, workshops, presentations at scientific meeting. How is depends on what/how many microscopes are available, and also the participants knowledge.
- I plan to organise a sharing talk in my faculty. I wish to cover some key take home learnings of the microscopy and most importantly the Kohler illumination that can improve our data quality. In addition, I also wish to spread the opportunities offered by Janelia AIC including the grant application, fluorescence probes.
- I will add some of the workshop material to my lecture and maybe give a talk to my department during some seminars related to microbiological field.
- Through workshops and seminars
- I will improve my explanations or advice in teaching and supporting the users of my facility.
- I plan to share this experience with everyone in our workplace and with students of the University. So much should be done to raise awareness, particularly on proper reporting and experimental design which is very important when presenting microscopy results in different scientific conferences and in publishing scientific articles.
- I will summarize the experience and present it to the members in my institutions. Also, when I successfully publish my research, I will always make sure that the description regarding imaging results and methods is reproducible, so that I can contribute to the prevalence of ethics in imaging community.
- verbally among colleagues, also on twitter and LinkedIn
- Honestly, I can't absorb well of the knowledge from the workshop. However, I know my level, in term of microscopy, imaging data analysis. So, I know what should I start to improve and to think further before designing the research plan, as well as experiments. After going back to my home country, I will conduct orientation from what I've learnt about this workshop (technically) to my faculty members, collaborators and students (especially). I will train myself more on machine learning too. so that I can keep up to date to data analysis and teaching to new generation or colleagues.
- After I will be back to my laboratory, at first, I would like to share the skills and knowledge with graduate students in the lab. There are so many thing they should know.
- I teach researchers how to use microscopes and image analysis software on a daily basis, but I think I can now teach them more accurately and not only how to use them but also advising about planning of their experimental design.
- I'm planning to share the skill with my colleagues and newcomers in our department in April and August.
- Share lecture and experience such as how to use about microscopes

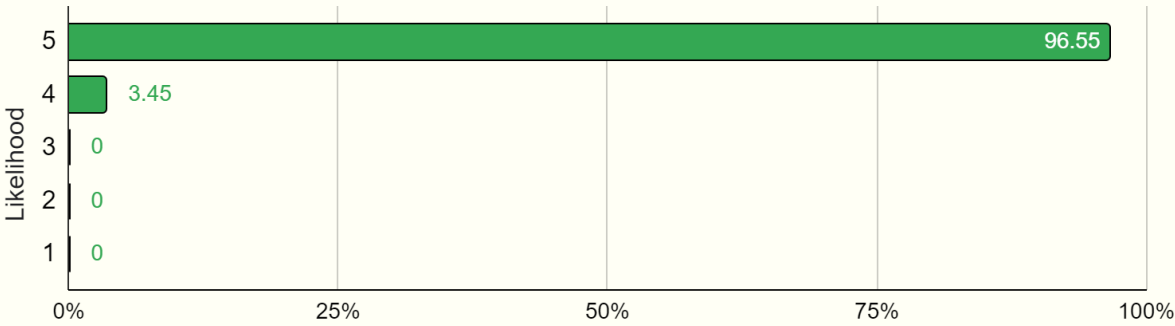


Participants Yukimi Kira (Japan) and Sharifah Zamiah Syed Abdul Kadir (Malaysia) continuing to collaborate after the workshop.

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Final Thoughts

How likely would you be to recommend others to attend similar future workshops?
(5 - Very Likely, 1 - Very Unlikely)



Group photo at the end of the final lab session



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Should we run this kind of workshop again? If yes, what location would you like this workshop to be held?

- Yes, at anywhere in Japan.
- yes, Kyoto
- Yes. At HHMI Janelia campus.
- I would say my own country however we do not have the extensive microscopy collection.
- anywhere
- Yes! Singapore.
- YES! anywhere is okay. in Janelia would be great, so we can see the AIC and all the instruments there
- Please do Japan again ^^
- This area again! If you can, I am interested in east Asia (South Korea, China) community. I hope to attend the workshop again.
- England
- Yes, Japan (Tokyo, Osaka, etc)
- Yes!!!
- Yes, country where the transportation is accessible and has a nice view to relax.
- YES. I think a place like OIST, with its cutting-edge microscopes, is the best choice.
- Yes definitely. At a guest house that is far from big cities so that we can concentrate on the workshop. Okinawa is one of the best.
- Yes. Okinawa in this season is also great.
- Yes. Easily accessible location from various countries.
- Yes. I prefer this kind of workshop to be held in Asia again (maybe in first world countries like Singapore that equipped with better microscopy facilities). But I hope this workshop can open more slots for Southeast Asia that really under-represented in the microscopy era.
- Yes, maybe south Korea
- Yes, at AIC :)
- Yes. Anywhere.
- Thailand would be a good place to hold this kind of workshop since they conduct a lot in the field of biological research.
- Yes!! I would say some of my friends missed this opportunity due to the high selection rate, so I would like this workshop to be held in East/Southeast Asia someday again!
- Singapore
- Yes. if you could have more budget, there should be in the US (Janelia) or EU as your goal is to form Southeast Asia Communities. So at least we (ASIAN) could learn something by seeing from those developed countries and have chance for more networking and collaboration.
- Absolutely, yes!! The location in which we could see many microscopy is fine (i.e. AIC at Janelia)
- Yes, Taiwan and OIST again
- Yes. In Singapore because it is relatively close to Japan
- yes, NIPP

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What can we do to improve future workshops?

- Having self-introduction period of each participant, including research topics that we're doing because we're mostly researcher who are interested in science very much.
- no
- To PR this workshop to wider prospective audience.
- Maybe if it's a day or two longer we would have a bit of a wiggle time in between to do something else. We do appreciate being in Okinawa, its a beautiful place.
- probably ALL the operators who handle the microscope should have enough English skill, because time is restricted, and sometimes we feel unuseful after visiting 1 microscope but did not gain new knowledge just to watch the microscope ON
- Less cramp schedule for the attendees to reflect on the knowledge and share how they'd utilize it in their field.
- Maybe loosen the schedule a little bit, the very tight schedule somehow made us drained and tired and could not focus to the lectures
- Already too high quality. I learned a lot
- We have a lot of time in midnights, so group work should be HW.
- It would be nice to have some leeway in the schedule. And I would like to see mention of various types of microscopes, including electron microscopes.
- nothing significant - already in a great form
- I understand it may not be feasible, but hopefully, most of the hands-on microscopes are ready to go (Hi STED and light-sheet)
- Slow pace. It is great that this workshop has the group activity to do to recap the knowledge, but I found it a bit hard if we are not guided by the instructor. It would be better if the instructor is assigned to the group to help the group activities, thus they know which part the participants don't clearly understand the lesson.
- -
- It would be great if you disclose more information on the detailed curriculum when the application is open. I was not sure what level the workshop is set to upon my application.
- I think we can have a review time, explicitly noted on the program. Having fun with others are also great but sometimes it becomes too long.
- More gentle slope to reach the goal = more time to digest, can be improve to better understanding for beginners.
- Looser schedule as it really inefficient to learn when the students are tired.
- A little less intensive (this workshop is like a marathon run for me but the view of Okinawa helped:)
- Option to include our sample/data for analysis
- lecture about sample preparation?
- The workshop itself is all good though improvement perhaps in the schedule would be a little bit fine too.
- I cannot make any comment for improvement, but please maintain the warm and friendly environment, and I'm sure every participants will continue to participate in the workshop with high motivation!
- the current workshop course structure is quite good.
- I think this workshop is good enough for me. However, I've just need more basic training because it is further than my field.
- The content is very very good!! But the schedule may be slightly tight.
- Please speak more slowly.
- Some of the microscopes didn't work, so hopefully next time all of them will work.
- I think you should give it more practice time

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Do you have any final comments, thoughts, or suggestions?

- Thank you so much for having this workshop :)
- no
- The teaching staff and organizing staff did wonderful job.
- I appreciate all of you, instructors were super friendly and helpful. The friends/connections/network that we made is also great. Would love to have like a more advanced microscopy workshop with all of us, it'll be great to be able to learn more and just sort of meet again between all of us.
- GREAT!!!!
- One day break on the 3rd day would be great for the attendees to reenergise.
- Thank you so much for the organizer for organizing such a great and fruitful workshop as well as building our network through this. You all did a wonderful job and hard work. Hope we can keep contact with each other in future
- Thank you so much our instructors and staff . and sorry for suffered from my condition ... I should improve myself more and more and I got new motivation for learning .
- Can I send email for training teachers if I have questions about Fiji or other things when I adapt skills learned in this lectures to my research.
- Thank you very much for inviting me this workshop. I will spread the techniques and knowledge form this workshop in our laboratory and University.
- Loved everything - Thank you for giving me an opportunity to attend this workshop & much appreciation to all the staffs involved for their commitment and support throughout the workshop!
- I really thank all the lecturers and organizers for this wonderful opportunity to learn microscopes in a very detailed fashion. I have never had this type of experience before, so it was a wonderful week. I appreciate the staffs from OIST for taking care of us. Applaud for Zeiss, Tokai hit, Andor, HHMI, OIST, and other sponsoring companies to make this happen.
- Overall workshop is great, fruitful, and beneficial for me. I find the hard time to understand some topics, but I think I can cover it up later on as I know whom to contact and the community that might help me on this. It is great that this workshop allow the participants to interact with each other as well as the instructors. It is seriously in-depth in the knowledge in this field and there are many things that I have learnt and I have never heard of. The most important things that I like the most is the willingness to help us to understand the bioimage field and to grow the community in right way. The instructors are very supportive and very passionate to accomplish this ambition goal. I really admire of what you have done so far, and I hope this positive energy will be continuous endlessly generation after generation. Thank you very much :)
- Restricting the countries for the attendance was a great idea because English is not the mother language for anyone, so we were able to communicate to anyone more easily without hesitation.
- Thank you all. I never thought my view of microscopy and cell biology would change so much (I actually studied theoretical physics, including complex systems). I am also thankful for the friends I first met in this course.
- Thank you very much such a great opportunity for us. I really enjoyed this workshop, even though bit difficult class projects without background knowledge. I really appreciate extremely hard works by all of instructors and staffs.
- Nope, everything is just perfect! Thanks for all the organisers and teachers for hosting this.
- It's a great workshop. Thank you to the team for running this useful imaging workshop
- I would like to appreciate all from AIC and OIST for this wonderful opportunity to learn and connect with scientists from Japan and SE Asia. It has been a fantastic learning experience.
- Thank you so much for holding this wonderful workshop!

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- I am very thankful for the opportunity to be part of this workshop. Though challenging, I have learned a lot and somehow helped me gain confidence and knowledge, particularly in image processing and analysis which are very important in presenting your data and findings to the microscopy and scientific communities in general.
- I can tell that the entire program was very well organized to optimize our experience here. I highly appreciate the every preparation the instructors have been made for this workshop!
- I would suggest similar level and advanced level running alternative years in different countries might be beneficial. Therefore, scientists already attended the basic course have a chance to learn more advanced skills and the person who haven't joined the workshop will have the opportunity to attend the course as well.
- I DO LOVE this workshop, even though I can't understand much. Because I learn something about microscope, imaging and data analysis that I've never thought that are very importance for our data as researchers. Thank you so much for hosting this kind of workshop. I do appreciate and looking for the next events and opportunities to involve with you guys and Janelia, thought I am a Plant Pathologist.
- I really appreciate all of you for giving me the opportunity to participate in such a wonderful workshop!! I am confident that the knowledge and experience I gained from this workshop will definitely be useful for my future research. In addition, I would like to share the knowledge with other researchers.
- It was frustrating not being able to understand English perfectly, but I learned a lot and had very fun. Thank you for teaching many things about bio-imaging!!
- I'm glad to join the workshop. Thank you very much.
- I think we should organize online workshops so that scientists can participate in large numbers and build websites

Imaging demonstration by Michael DeSantis during a lab session



Appendix II: *Individuals involved in the Workshop*

OIST organizers:

- Shinya Komoto
- Koji Koizumi
- Hidenari Matsugawa
- Tomoko Nago

Teaching team:

- Teng-Leong Chew (*AIC, HHMI Janelia, USA*)
- Jesse Aaron (*AIC, HHMI Janelia, USA*)
- Satya Khuon (*AIC, HHMI Janelia, USA*)
- Michael DeSantis (*AIC, HHMI Janelia, USA*)
- Owen Puls (*AIC, HHMI Janelia, USA*)
- Mai Rahmoon (*AIC, HHMI Janelia, USA*)
- Harikrushnan Balasubramanian (*AIC, HHMI Janelia, USA*)
- Michelle Itano (*UNC Chapel Hill, USA*)

Keynote speakers:

- Atsushi Miyawaki (*RIKEN CBS, Japan*)
- Hari Shroff (*HHMI Janelia, USA*)

ABiS:

- Naoto Ueno (*NIBB, Japan*)
- Yasuhiro Kamei (*NIBB, Japan*)

Sponsors:

- Andre Kompa (*Zeiss*)
- Marion Lang (*Zeiss*)
- Akira Sato (*Zeiss*)
- Yasuhiko Sato (*Zeiss*)
- Masaki Takahashi (*Zeiss*)
- Yusuke Hara (*Zeiss*)
- Samuel Ko (*Zeiss*)
- Atsushi Tsurumune (*Nikon*)
- Kyoka Sakai (*Nikon*)
- Keisuke Manji (*Evident*)
- Taka Tsuchiya (*Tokai Hit*)
- Shinichiro Endo (*Tokai Hit*)
- Toshiyuki Watanabe (*Oxford Instruments/Andor*)
- Toyoharu Gohda (*Oxford Instruments/Andor*)

Participants:

- Ayaka Itani (*University of Tsukuba, Japan*)
- Ayesha Fauzi (*Taylor's University, Malaysia*)
- Chong Teik Lim (*Universiti Putra Malaysia, Malaysia*)
- Emil Lat (*National Institute of Molecular Biology and Biotechnology (BIOTECH), Philippines*)
- Eri Yorifuji (*Nagoya University, Japan*)
- Fitria Dwi Ayuningtyas (*IOBC, Indonesia*)
- Fumiaki Yokoyama (*The University of Tokyo, Japan*)
- Hideki Uosaki (*Jichi Medical University, Japan*)
- Miho Sakuma (*Ochanomizu University, Japan*)
- Misako Saida (*NIBB, Japan*)
- Naphat Satapoomin (*MORU, Thailand*)
- Patipark Kueanjinda (*Chulalongkorn University, Thailand*)
- Phan Vu Thi Kim (*VinUniversity, Vietnam*)
- Rahimi Syaidah (*Universitas Indonesia, Indonesia*)
- Ryota Nakazato (*Hiroshima University, Japan*)
- Sharifah Zamiah Syed Abdul Kadir (*University Malaya, Malaysia*)
- Sokuntheary Theng (*Institute of Technology of Cambodia, Cambodia*)
- Soriya Rin (*Nagoya University Asian Satellite Campuses Institute, Cambodia*)
- Sota Takahashi (*Hokkaido University, Japan*)
- Su Su Htwe (*Nanyang Technological University, Singapore*)
- Sukunya Shyama Sundar (*National University of Singapore, Singapore*)
- Taimu Masaki (*RIKEN CBS, Japan*)
- Tassanee Lerksuthirat (*Mahidol University, Thailand*)
- Thị Mỹ Ngọc Nguyễn (*Children's Hospital 2, Vietnam*)
- Toru Kawanishi (*Tokyo Institute of Technology, Japan*)
- Tsuyoshi Aoyama (*ITbM, Nagoya University, Japan*)
- Yuka Yajima (*Muroran Institute of Technology, Japan*)
- Yuki Watakabe (*National Institute for Physiological Sciences, Japan*)
- Yukimi Kira (*Osaka Metropolitan University, Japan*)
- Yusuke Umemura (*Institute for Quantitative Biosciences, The University of Tokyo, Japan*)