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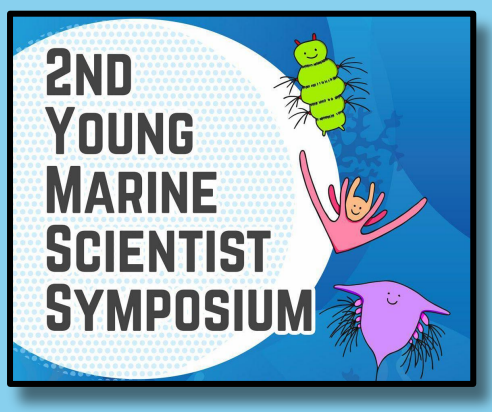
THE SINGAPORE INSTITUTE OF BIOLOGY

BULLETIN

FEATURE STORY:

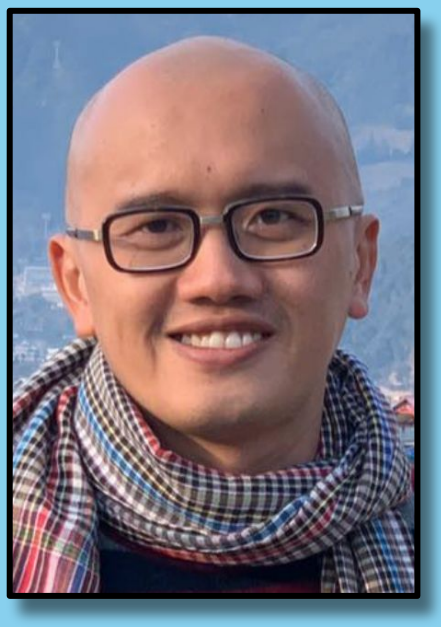
IBO CHALLENGE II 2021

THE 6TH SINGAPORE JUNIOR BIOLOGY OLYMPIAD



THE 2ND YOUNG MARINE SCIENTIST SYMPOSIUM

MESSAGE FROM THE PRESIDENT



Nicholas Yap
President, 48th Council
The Singapore Institute of Biology

Dear Friends,

What a year it has been! We hope you have been well during these trying times.

Despite the ongoing challenges that are still unfolding, SIBiol remains steadfast in its mission: to promote the advancement of Biology and its applications, improve Biology education, and aid the exchange and sharing of ideas to those interested in biological studies. Experiences gathered in 2020 have strengthened our close-knit team of plucky volunteers – we were able to persevere and remain resilient throughout 2021 – SIBiol had another wonderful, productive year of achievements.

To begin with: Team Singapore has once again done us proud by performing well at the International Biology Olympiad (IBO) 2021. Because of the global COVID-19 pandemic, this competition was once again held virtually as an unofficial challenge for both Theory and Practical Rounds; Team Singapore garnered one Gold and three Silver medals, unofficially earning 9th place out of the 71 countries participating.

The 6th Singapore Junior Biology Olympiad (SJBO), organised jointly by SIBiol and Science Centre Singapore, had another successful run. This year saw the highest ever level of participation: we had a total of 1841 students from over 75 local schools signing up to participate in SJBO 2021, a marked increase from the 1462 students from 60 schools that had signed up in the previous year.

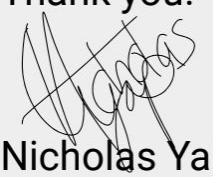
Using the lessons learnt from past years of holding the SJBO Theory rounds online, this year's SJBO organising team rose to the challenge of recreating the experience of a 'face-to-face' practical exam, on a virtual platform. This was by no means an easy feat, as educators among you can surely relate when translating your classes to Zoom during the pandemic. The event was rolled out successfully – we received positive feedback about it from both the participants and their teachers.

Among other events, we also partnered with the St John's Island National Marine Laboratory on two separate occasions: the first in June 2021 as part of the 2nd Young Marine Scientists Symposium, and the second, a research seminar in December 2021 at which our Research Trust Fund awardee, Dr Ow Yan Xiang delivered an engaging talk. In addition, this year we had an opportunity to support the Biological Sciences Graduate Congress 2021, an event that is partnered by the National University of Singapore, University of Malaya and Chulalongkorn University Supporting such an event allows our local Biology students to exchange and share their research across the region.

As the COVID-19 global pandemic continues, our Council will soldier on, remaining relevant to both STEM education and research during these challenging times. On behalf of the 48th SIBiol Council (Year 2021/2022), I would also like to thank all existing members, along with new ones, for your continued support throughout these many, many years, and to see us through this ongoing pandemic. I would like to thank all Council members, especially Vice-President Dr Theresa Su, Immediate Past-President Dr Jani Tanzil, Secretary Dr Toh Tai Chong, Treasurer Ms Charlene Goh, Assistant Treasurer Dr Cynthia Wong, Council members Dr Adrian Elangovan, Dr Savita Sharma, Dr Chen Zhong, Dr Abigayle Ng, Ms Regina Yeo, and Ms Jharyathri Thiagarajah, and SIBiol interns Ms Chloe Guo and Ms Chen Yixin.

Finally, a great thank you to our mentors (especially Dr Beverly Goh, Dr Ng Ngan Kee and Dr Tan Lik Tong), volunteers and partners from the DBS (NUS), NSSE (NIE/NTU), SBS (NTU), and Ms Emelyne Quek from the Ministry of Education – all of whom were essential in providing assistance, guidance and training in nurturing our young biologists of tomorrow.

Thank you.



Nicholas Yap

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IBO CHALLENGE II 2021

By Bryan Sim, Chen Yixin, Chloe Guo, Christopher Tay, Ong Chong Yao, Trivikram Mohan

SINGAPORE PLACED 9TH IN THE 2021 INTERNATIONAL BIOLOGY OLYMPIAD CHALLENGE II

Team Singapore has once again done well at the IBO Challenge II (a substitute for the 32nd IBO Lisbon, Portugal) held on 19th and 21st July 2021, clinching 1 Gold medal and 3 Silver medals. All exams (both practical and theoretical) of the IBO Challenge II were modified so participants could complete all questions without using lab facilities. During the two gruelling days, the team had to complete a diverse range of practical tasks, on top of the challenging theory papers. Singapore won the 9th place in a field of 71 countries and territories with 284 participants. The team consisted of: Trivikram Mohan (Gold medal) from NUS High School, Bryan Sim (Silver medal) from Raffles Institution, Christopher Tay (Silver medal) from Raffles Institution, and Ong Chong Yao (Silver medal) from NUS High School. Congratulations to the team!

Q&A WITH THE TEAM

CHRISTOPHER TAY

Why did you decide to participate in IBO?

I decided to participate in IBO for a number of reasons. I have been really interested in bio ever since I was a young child, especially in the fields of animal and marine bio. In Year 3 and 4, I got the opportunity to put my knowledge of this subject to use by participating in SJBO. Studying for SJBO and preparing for the practical round was really fun and I decided then that I wanted to continue participating in bio olympiads in the future. I was encouraged by my inspirational seniors who had previously participated in international olympiads and teachers who believed in me to sign up for more bio olympiads. One step led to the next and I signed up for SBO, made it to the IBO training team, passed the selection test and finally got to IBO. Although IBO was my ultimate goal, I wasn't specifically trying to get in. Rather, I just focused on each next step and completed my tasks to the best of my ability. It was a privilege and an honour to be selected to represent Singapore at IBO and it was an offer I could not turn down.

What is one memorable experience from your IBO journey?

One memorable experience from my IBO journey was the learning journey to the Lee Kong Chian Natural History Museum. Natural History museums are wonderful as they showcase wide varieties of specimens and the evolutionary progression of natural life. We had a blast learning from the knowledge and experience of Prof. Ng Ngan Kee, who guided us around the museum and explained the origins behind many of the specimens as well as interesting facts about the animals. Prof. Ng also told us many hilarious stories from her experience as a researcher going on field trips and finding new species. I had a wonderful time during that visit.

Which Biology topic is your favourite?

Personally, I am always intrigued by organisms and how they interact with their environment. As such, I like that vein of topics, including fields like ecology, evolution and animal biology. Specifically, I am most passionate about marine biology (though I don't have a good reason why that is the case). Studying about marine organisms and their specific adaptations to their habitats is something I have always found really cool.

What is one thing you learnt/skill you gained from IBO training?

From the training, I learnt how to think more critically about things and ask good questions. Throughout my IBO journey, I found that learning about biology is far more than just memorising textbooks or mugging content. Many of the experienced professors that we learnt from encouraged us to not just take the facts at face value, but question them more, and to understand them better. They really delved deep into why things work, giving us an understanding that can't be found in a textbook. I really do think that the way to understand more about biology is to just keep questioning everything we learn, instead of just memorising facts.

What advice do you have for future Olympiad hopefuls?

I hope that future olympiad hopefuls will sit down and think about what exactly they are trying to achieve by competing in the event. IBO is extremely demanding, and requires massive commitment of time and effort. Trying to pursue it just for CV or awards will definitely make ¾ of your Y6 year miserable. Even if you just enjoy learning about biology, there are better ways to do it that require less ‘mugging’, and provide more enjoyment. For those truly keen on seeing it through, try and enjoy the process and appreciate everything you learn; every book you read and every Prof you get to talk to! Try not to just think about the end goal of passing the selection test or making it through SBO. If you really invest yourself in learning and understanding, you’ll naturally be able to meet your goals and obtain something meaningful out of the experience.

Q&A WITH THE TEAM

TRIVIKRAM MOHAN

Why did you decide to participate in IBO?

Difficult Question :D I joined Bio O [=Olympiad] in Year 2 to learn Botany under Mr. Lee Siak Cheong, because I thought plants were quite cool to walk around (you would find me taking walks in Thomson Nature Park, Lower Pierce Reservoir, Botanic Gardens and my own neighbourhood). Well, let's say the Olympiad wasn't what I expected, we were bombarded with terms like 'alternation of generations' and the 'evolutionary diversity of plants', and I learnt how to identify a *Selaginella* plant! Cue Year 3 and Year 4, where we learnt about everything from nerve nets to the cross-bridge cycle. Religiously taking notes in Ms Renata's class and asking weird questions ("Ms Renata, if the woman was sideways would the sperm go down only one fallopian tube?") made me REALLY excited for Biology classes. This was to the extent that I took four Biology modules in a single semester in Year 5!

Who knew that studying Bio together would lead to making great friends? I want to thank Omkar, Chong Yuan, Chong Yao, Jarvis, Kean Seng and Chi Wei, for being amazing partners in crime throughout high school :D From plucking random mushrooms on the street, to trying to decipher each other's handwriting on Ms Renata's notes. I will never forget the wonderful times we had together! In Year 5 when we got the invites to SBO, SBO Practical Round and then IBO, I realised that it was less of the exhilaration of the Olympiad itself, but rather the awesome prospects of learning with my friends, exploring uncharted territories in Biology, and plucking more plants. All these got me so excited about IBO. Then my decision to participate in IBO was clear, wasn't it?

What is one memorable experience from your IBO journey?

Here I could say many things, from the field trips to Labrador Park, Thomson Nature Park, Lee Kong Chian Natural History Museum, or even our failed attempts at styrofoam leaf sectioning and getting lost in NIE. There are so many memorable experiences from IBO that I can't pick one!

Selfie time after our lesson on plant diversity with Dr Amy Choong

Which Biology topic is your favourite?

I was deciding between Animal Physiology and Biodiversity, but I think Biodiversity has to be my high school favourite! In Honours Biology at Year 5, the first module I took was on Biodiversity taught by Ms Fong Kit Ching and Ms Valarie Lim. Their lessons were on specimens from squids to horseshoe crabs, looking at the different appendages of the prawn under a stereomicroscope, and trying to figure out what exactly the splashy mess was in a clam's visceral mass.

What is one thing you learnt/skill you gained from IBO training?

I would say it's the skill of observation. Usually when we look at a specimen or a problem, or a graph, we just see, but do not observe. The professors allowed us to hone this skill in various lessons, from looking at microphylls on fern allies, to observe microscopic flower structures, and deciphering phylogenetic trees. In particular, Dr. Ng Ngan Kee taught us this skill when we were looking at the invertebrate specimens in the lab and the exhibits in the Natural History Museum. The walks to Labrador Park with Ms Quek and Dr Ng, and the trip around Thomson Nature Reserve with Dr. Adrian Loo also taught us how to identify different plant specimens by looking at small characteristics.

What advice do you have for future Olympiad hopefuls?

Always follow your heart! Don't join the olympiad if you feel forced to sit for every lesson, or only because all your friends are going for it. Also, cherish all the learning experiences that you go through. Don't forget to make friends along the way, both from your school and from other schools. I hope you enjoy every moment of your Biology journey!

Q&A WITH THE TEAM

BRYAN SIM

Why did you decide to participate in IBO?

Honestly, I never expected to make it this far in my IBO journey. Starting from SJBO in Year 3 and 4, I didn't really know what to expect from participating in science Olympiads. I just remember reading Campbell textbooks before each theory test praying that it would be enough to carry me through. SJBO was a good experience leading up to SBO as I felt like SJBO helped me discover that I actually enjoyed Olympiad Biology where both breadth and depth was necessary, while learning random Bio facts during the training sessions with my friends was one of the things I looked forward to each week. In JC, the decision to participate in SBO was clear as I had already been participating in Bio Olympiads and would never have passed an opportunity to potentially join IBO. I was pleasantly surprised to have been invited to join the training team and later on, to represent Singapore in the IBO. This whole experience had really helped me develop my interest and passion for Biology, I wasn't going to pass up on an opportunity to represent Singapore and participate in IBO.

Which Biology topic is your favourite?

I would say that I really enjoy reading and learning more about animal and human physiology. Unfortunately, the H2 syllabus doesn't include these topics at all, so we had to learn it all independently. I still remember a whole group of us practicing dissection in preparation for SBO at someone's house using seafood we bought from the market because we couldn't get any practice in school due to Covid restrictions. I find animal and human physiology extremely relevant to our daily lives as it concerns both us and organisms around us. I find understanding how animal and human systems work together to seamlessly to form one complete self-sustaining organism really cool. It is amazing how something so complex yet efficient can exist in the first place. I still remember a lecture on functional morphology that I found fascinating as even the simplest of organisms have structures which serve complex functions. My interest in understanding how all the systems and their functions fit together in a single organism, as well as the relevance that this topic can have in our daily lives, has cemented animal and human physiology as my favourite Biology topic.

What is one memorable experience from your IBO journey?

This question was really difficult as I have formed many memorable experiences during my IBO journey, from the aforementioned dissection practice to the many field trips we had to nature parks and reserves or even the final round of SJBO which I did with my team from secondary school.

If I had to choose one experience to highlight, there was one training session with Dr Ng Ngan Kee that I found really memorable. It started off as a pretty normal lecture about animal systematics and diversity, with Dr Ng running through a few sets of slides in an NUS lab. After she finished the slides, I thought she didn't have much more for us in the session and we had just ended early. However, she surprised us by pulling out trolleys filled with animal specimens from the lab storeroom. I remember being amazed by the sheer variety of animals they had stored, ranging from sea stars to frogs to even a pangolin. She then proceeded to teach us about their characteristics and let us bring most of the specimens out of the jar to examine. It was really a unique lesson that I don't think I would experience anywhere else where I got to get close to so many specimens and handle the various cool animals all at once.

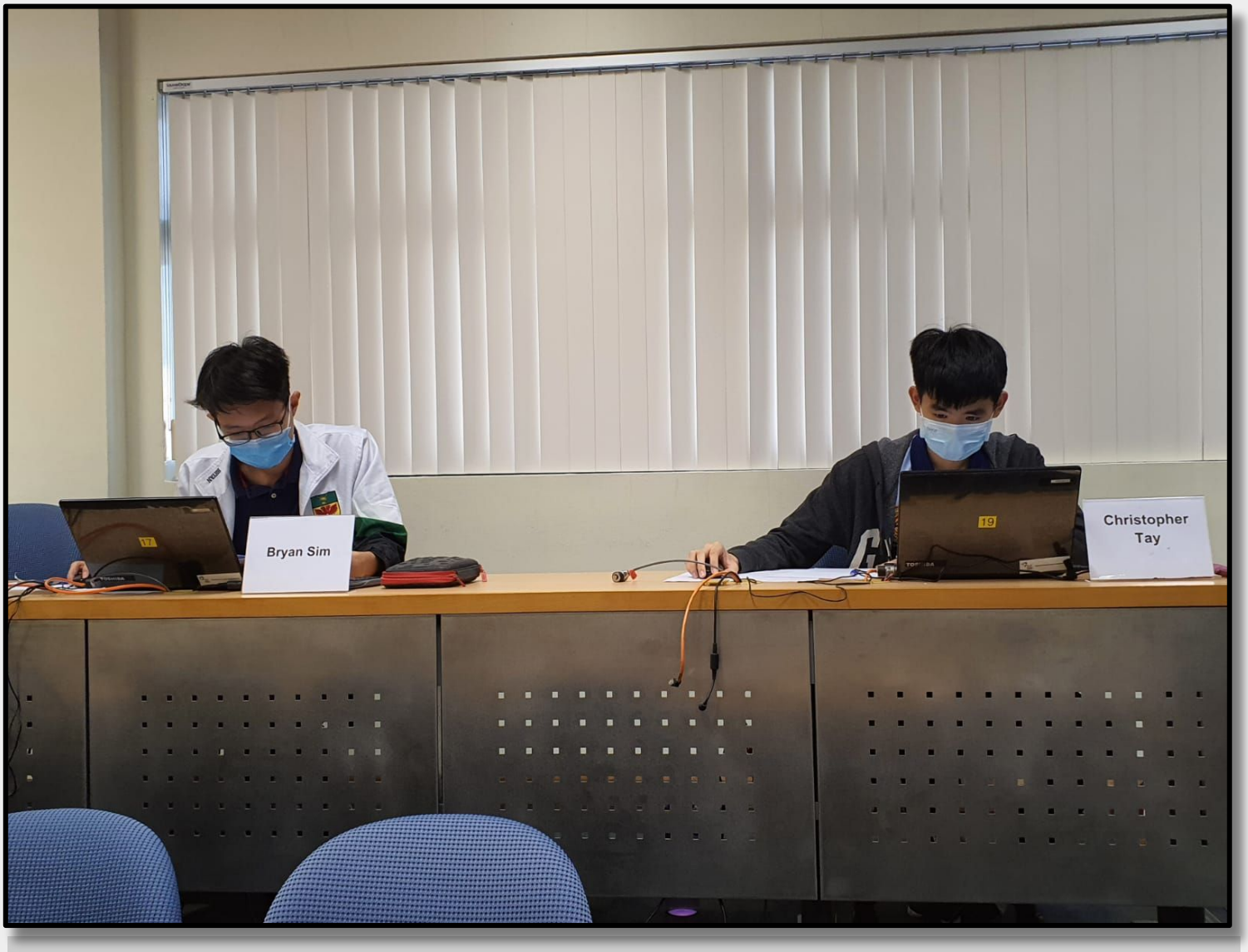
What is one thing you learnt/skill you gained from IBO training?

The first thing that comes to mind is educated guessing – IBO really requires a lot of that. It's just impossible to know enough to answer every question with confidence so all we could do was guess and hope for the best.

But on a more serious note, I'd say that the whole IBO experience really improved my analytical skills. Unlike the Bio we learnt for A levels, Bio Olympiad really requires you to not only know the facts but also understand them and apply them to novel scenarios. The official training sessions were great at increasing the breadth and depth of knowledge that we had, where I really learnt so much more about the different areas and fields of Biology. I still remember trainings which ranged from learning to identifying histology slides, to understanding the biochemistry behind macromolecules. We even had a whole lecture on parasites! Without a doubt, these training sessions were invaluable in providing us with the knowledge necessary to participate in IBO. However, when it comes to answering actual IBO questions, knowledge itself isn't enough. Many IBO questions require quick thinking and analysis as they often involve a specific experiment or set of data. In such cases, having the background knowledge on the subject definitely helps, but such questions also required us to analyse and understand the information given on the spot. The weeks I spent trawling through mountains of data, slowly understanding experiments and information in past IBO papers together with my teammates really helped me improve my analytical skills.

What advice do you have for future Olympiad hopefuls?

The best piece of advice I can give my juniors is to enjoy the process of learning. The grueling experience of studying for IBO without knowing what the result would be causes burnout to occur really quickly, especially if you focus on studying for results or awards. In some ways, IBO is like a marathon, where you have to do lots of Bio for many months in a row. While mugging will definitely be necessary, it shouldn't feel like a chore (at least most of the time). Otherwise, the whole experience will be a really painful one. Do IBO more for your interest in Bio and the desire to learn more about Biology rather than any internal or external expectations placed on you :)



Chris and I doing the IBO on the computers at NIE

Q&A WITH THE TEAM

ONG CHONG YAO

Why did you decide to participate in IBO?

To be honest, the journey of participating in Olympiads from SJBO to SBO and IBO just felt like a road of opportunities that most people would logically follow without question, if they perform well in each stage and are able to advance to the next. Undoubtedly, everyone would strive for their best, so when I was offered the opportunity to enter the IBO training team and ultimately be part of Team Singapore, I accepted it without much hesitation.

Even so, passion also was a big reason why I participated in IBO. Most people attending these Olympiads probably have a great interest in Biology, and I was no exception. I think a lot of my passion and interest stemmed from unique experiences I had growing up, from visiting a large facility in A*Star just filled with rows and rows of zebrafish to spending hours putting thousands of micrometre-sized *Arabidopsis* seeds in straight rows on nutrient media. These experiences may seem relatively mundane to most people, but to me, they felt extremely intriguing. Having many opportunities to go on interesting field trips with my Bio Olympiad peers also made me really fascinated by the vast diversity of flora and fauna in Singapore. Ms Wang and Dr Adrian Loo's field trips were always so enjoyable, and I will forever be amazed at their extraordinarily deep knowledge of biodiversity as well as their ability to recognise various plant/animal species so quickly. These fond memories had greatly reinforced my interest in Biology, and made me more inspired to participate in IBO eventually.

What is one memorable experience from your IBO journey?

One of the most memorable experiences of my IBO journey was first participating in the International Medicine Olympiad (IMDO) back in 2020. Although it was termed "International", competitors were mostly from the US only, and the competition was mostly just regurgitating vast amounts of textbook knowledge. The second round was a group competition round, where teams would fight to answer questions and earn points to boost their individual scores.

Since the US and Singapore are in greatly different time-zones, we had to attend the live competition at an unholy hour (3 AM), just so the competitors in the US could have their lunch on time. Not only did round 2 last 6 hours into the night, it also felt terribly rigged. At first, we were astounded at the speed at which the competitors sounded the buzzer. Then it started to get annoying as we realised that 90% of the time, the question would not even be half-read yet when they sound the buzzer. They did this because they knew the moderator would read some extra words after the buzzer sounds before stopping. So what did we do? We shamelessly adapted and strategically followed in their footsteps. Even though we still got questions like "Which 3 of the 20 amino acids are commonly phosphorylated?" while the other teams had true/false questions, our blatant attempts to utilise their strategies paid off and we got a 4% boost to our individual scores so our final scores did not look so pathetic. But what made the experience really fun too was our team's spontaneity and relatively light-hearted attitude towards this group competition round. I fondly remember Trivi laughing into the mic for everyone to hear during our short group discussion time about a question on gluconeogenesis, "GUYS, IT'S MS HUANG TIME!". And the experience of feeling so drowsy while just chatting and laughing with my team members Trivi, Omkar and Caleb late into the night will be one that I will hold in my heart for a long time to come.

Which Biology topic is your favourite?

My favourite topic, without the slightest doubt, has to be the amazingly wonderful topic of bioinformatics. I vividly remember being absolutely enthralled, excited, even fascinated during the regretfully-short session carried out by none other than Prof Greg Tucker-Kellogg. From teaching us simple sequence alignments using BLAST, to absolutely hammering us with Statistics when discussing the BLOSUM and PAM matrices in these programmes, the content he taught was so absolutely, undoubtedly and indisputably useful during our selections test. His short morning lecture was enough to captivate me so greatly that from the hour his lecture ended, I became a firm believer in the wonders of bioinformatics, and spent many hours thereafter just researching on these substitution matrices as they are extremely applicable in our daily lives!

I actually enjoy learning Biochemistry a lot. I find it really interesting to understand the exact structures of biomolecules in pathways and how chemical modifications to them may affect their binding to enzyme active sites etc. A lot of people cringe and sneer at me whenever they hear me talk about my interest in this area, though. D:

What is one thing you learnt/skill you gained from IBO training?

Through the trainings I've come to realise that, increasingly, modern Biology is deeply intertwined with other aspects of science. I learnt that many thriving domains of research involve the complementation of Bio and Computing. In fact, one of the most memorable lectures for me was the one which blended in-depth Physics with Biology, as the Prof discussed phenomena like diffraction patterns in the iridescence of butterfly wings. My aspiration has always been to perform Biological research, and I was so exasperated when a senior told me that a career in the pure sciences like Biology or Chemistry isn't prospective at all. I guess it goes to show that cross-disciplinary studies are increasingly the norm, and we'll have to adapt by exploring areas such as synthetic Biology and Bioengineering which will be much more applicable in today's context.

What advice do you have for future Olympiad hopefuls?

I think it is really important to have confidence in yourself to do well in the Olympiad. During the final leg of my IBO journey, which was filled with intense cramming of Albert's Molecular Biology and Raven's Plant Biology, I remember feeling absolutely defeated during the week before the competition. Having to go through emotional rollercoasters, from palpitation and dread when marking IBO papers, to devastation upon realising that my score for the paper barely scraped a "Bronze", also did not help with my self-esteem issues. I recall walking through Seletar Park with my family, completely silent and overwhelmed with anguish as I pictured myself being an embarrassment to the country for messing up the competition. As much as it was physically demanding to stay up cramming content, it was also mentally draining to drown in constant doubt and anxiety. And ironically, this mental toll had made me less motivated which actually reduced my efficiency when studying for the competition. Sacrificing my well-being with such a heavy burden all the time was really not worth it, and in hindsight I wished I could've better recognised the importance of my own health. So, to the future batch of prospective IBO competitors, I'd like to encourage you to have faith in yourselves. Your achievements thus far are testament to your abilities, and you guys are the best Singapore has to offer. So take heart, because I believe that with the right study attitude, it should not be terribly difficult for anyone in the IBO team to attain a desirable award in IBO (i.e. maintain the nothing-below-Silver streak).

Q&A WITH THE TEAM

CHLOE GUO

Why did you decide to participate in IBO?

I wanted to challenge myself to learn Biology at a much higher level than the A level syllabus. My interest in Biology olympiads started way back in Y3 when I decided to try out the SJBO. I gained more confidence in my abilities in this area after doing well in the SJBO again in Y4, so I decided to see how far I could progress in my Biology Olympiad journey. I'm very glad to have made it past each incremental hurdle from SJBO to SBO and finally into the IBO training team.

What is one memorable experience from your IBO journey?

The time we went to Labrador Park, on one of the rare few learning journeys we were allowed to go on because of the COVID situation. I'd never been there before, and it was really fun to walk around and explore the park, and learn about the flora and fauna unique to Singapore. We also got to release our inner children by playing at the playground there. It was both a great learning experience and a chance to de-stress and get some exercise!

Us taking a break by playing on the see-saw

Which Biology topic is your favourite?

Molecular biology. I enjoy learning about the many complex processes that take place at the microscopic level. I find it so fascinating that biochemical processes are able to take place seemingly automatically with clockwork regularity in each of our cells, and that the smallest changes to any of them can have the largest effects on our bodies. It is intriguing to understand how all of these tiny parts work together to keep us alive. I am also quite interested in the real world applications of molecular biology, like gene editing and stem cell therapies. If they are used appropriately, these technologies can change people's lives for the better.

What is one thing you learnt/skill you gained from IBO training?

I learnt the skill of speed reading textbooks. And not just reading fast, but also condensing the information and remembering the important bits, which is the more difficult aspect that I still haven't fully mastered yet. With the sheer amount of reading material and limited time to read it, I had to read what seemed like 10 times as fast as I would normally to just get through it all. I also tried to remember the important content as I was reading it so I wouldn't need to spend extra time making notes. I'd like to say it worked for me, because normally I don't like to make notes anyway (oops). This experience of having to speed read content certainly prepared me for the future, for example in uni when I'd probably have a lot of reading material to digest in a limited time.

What advice do you have for future Olympiad hopefuls?

Have fun and enjoy the process of learning new things! I'm not someone who likes to mug - I don't really like sitting and memorising things. So, if you're like me, you'll find learning and understanding new concepts the most fun part, and in my experience that took up quite a large chunk of my preparation for the olympiad. Just remember the reason why you signed up for this in the first place, which probably is because you are really interested in Biology. So this is your chance to nerd out with other like-minded peers and have a great time!

Q&A WITH THE TEAM

CHEN YIXIN

Why did you decide to participate in IBO?

When the teacher-in-charge of our Biology RA (Raffles Academy - an enrichment programme offered by RGS) signed us all up for SJBO in Y3, I honestly kind of saw it as an inconvenience (wah, another thing I have to study for?). However, biology Olympiads quickly became more than just 'a Very Difficult Thing I Have to Study a Lot For' in my life - although that definitely still held true. I already had a passion for Biology and the Olympiads gave me a much-needed opportunity to extend my learning beyond just the school syllabus, which quite frankly always demanded a bit too much rote memorisation for me to truly enjoy. However, when studying for SJBO and SBO later on, I could explore extension topics I had always been curious about without having to worry about marking points or keywords – it was basically a dream come true. Seeing as SJBO turned out to be such a rewarding experience (and also painful, but that's a given), signing up for SBO was a pretty easy decision, although I truly never expected to make it into the IBO training team (I mean, I can still remember my friend and I discussing what we'd do if we didn't make it past our school's SBO selection test a year ago), but man, I sure am glad that I did!

What is one memorable experience from your IBO journey?

Although all the excursions we had as part of our IBO journey hold a special place in my heart, I have to give a shout out to our first learning journey to the Lee Kong Chian Natural History Museum (partly because it's the only one that was indoors and therefore air conditioned). While it's one thing to witness the diverse range of living things in our world through textbooks or, to be honest and accurate, YouTube videos, it's another thing entirely to be physically standing in front of a massive glass case spanning an entire wall filled entirely with preserved insects – it's really kind of awe inspiring. Of course, it helped to have one of the best museum guides of all time: Dr Ng Ngan Kee herself, with her wealth of knowledge on animal and plant diversity and seemingly bottomless store of funny and interesting stories from her research experiences.

Only a small fraction of what we saw at the LKC Natural History Museum!

Which Biology topic is your favourite?

Okay, this was not an easy question to answer. If I really had to choose one, I'd probably go with animal A&P since it's always really cool to learn about the unique ways animals have adapted to their various environments by observing their anatomical structure. Also, dissections are *very* fun (I still remember the one single training session we had before SBO prac where we ended up dissecting mussels some people bought from NTUC during our lunch break. Good times.)

What is one thing you learnt/skill you gained from IBO training?

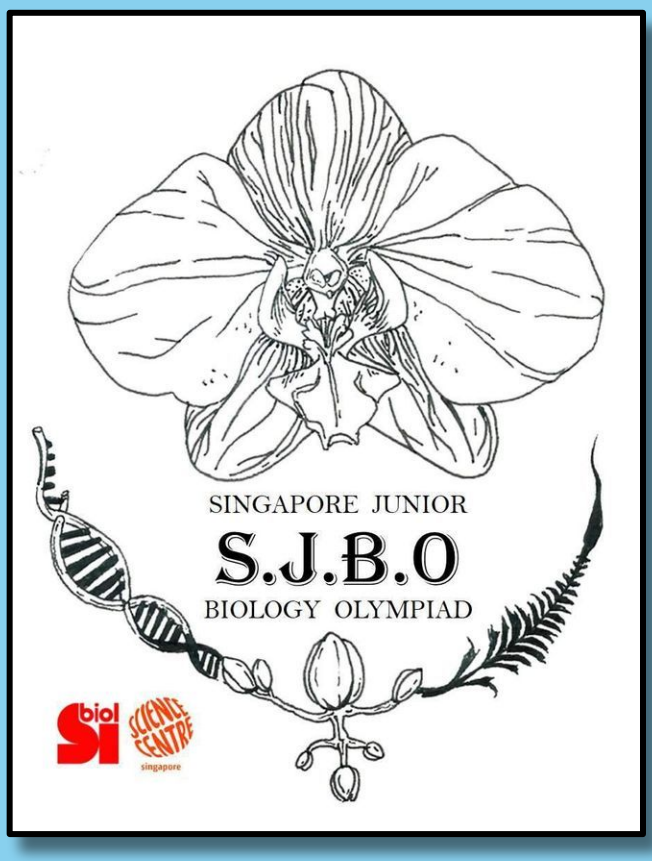
One important thing I learned was that everyone learns in a different way and it really helps to figure out the best way in which you can absorb and retain information. Some people might prefer reading and memorising from textbooks while some prefer listening to lectures, and others might want to make their own notes based on these primary sources to fully internalise what they have learned. There's no need to force yourself to follow the method that worked for your friend if that method doesn't work for you. Everyone learns differently, and that's okay.

What advice do you have for future Olympiad hopefuls?

My advice comes in two parts: be confident in your own abilities but also learn to manage your expectations. Through the course of your Olympiad journey you might find yourself in the company of people you admire or otherwise consider 'better' or 'smarter' than you – but don't let that get you down or make you lose confidence! The fact that you've made it this far is already a confirmation of your abilities, so don't demoralise yourself by comparing yourself to others. On the other hand, don't be too harsh on yourself when things don't go your way. This might sound pretty pessimistic but disappointment is a constant in life and you just gotta live with that. However, one unsatisfactory result doesn't have to mean the end of the world – there are many more opportunities waiting for you in the future so focus on what's ahead of you rather than what's already behind.

Maybe the real IBO was the friends we made along the way

THE 6TH SINGAPORE JUNIOR BIOLOGY OLYMPIAD



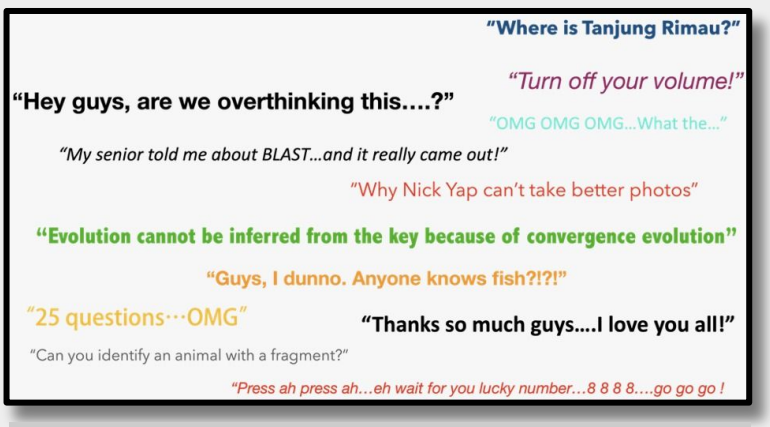
Co-Organised By SIBiol and Science Centre Singapore

Once again, SIBiol and Science Centre Singapore co-organised the 6th Singapore Junior Biology Olympiad (SJBO), an avenue by which Secondary 2 to 4 students (or their international counterparts) may participate, to be experience the competitive arena of the Biology Olympiad. A total of 1841 students from over 75 schools participated this year, an increased from 1462 students from 60 schools last year.

One of the local sea anemone participants had to identify.

The SJBO 2021 Theory Round was once again held virtually, with participating students being awarded Gold, Silver, Bronze or an Honourable Mention based on their test results. From these, students from the top seven schools were shortlisted to take part in the SJBO Practical Round. Shortlisted schools this year include: Anglo-Chinese School (Independent), Hwa Chong Institution, Nanyang Girls' High School, NUS High School of Mathematics and Science, Raffles Girls' School, Raffles Institution and Victoria School. Schools selected were allowed to train and select 5 students (including 1 reserve) to participate in the practical round.

The relieved participants and organising committee of the SJBO Practical Round. The event was a success!



Quotable quotes of the day, straight from the participants' mouths!

Due to Singapore's Phase 3 Heightened Alert measures, the Practical Round, that was slated to be at the St. John's National Marine Laboratory (SJINML), was translated to an online competition held on 18 August 2021. Students from each shortlisted school participated in their respective teams for this online practical competition. A range of tasks, simulating data collection and analyses in science, were assigned to the students – these include having to interpret graphs and identifying dissected parts of a fish, using a taxonomic key to identify a sea anemone species, and the blasting of genetic sequences on GenBank. The overall winner of SJBO 2021 was Victoria School, with NUS High School coming in second place, and Anglo-Chinese School (Independent) coming in third.

SIBiol would like to thank the organizing committee for the successful run of the SJBO2021: A/P Lim Tit Meng, Dr Jani Tanzil, Dr Chen Zhong, Dr Savita Sharma, Dr Theresa Su, Ms Regina Yeo, Dr Cynthia Wong and Dr Nicholas Yap, SIBiol interns Ms Kate Lu and Ms Shao Qian for their devotion and zeal, without which the SJBO 2021 would not have been possible.

SIBIOL PUBLIC FORUM 2021

Co-Organised By SIBiol and Science Centre Singapore

The SIBiol Public Forum 2021 was jointly organised by SIBiol and the Science Centre Singapore and held virtually on the 11th of September 2021. The theme for this year's public forum was "Environment Sustainability" and there were two distinguished speakers: 1) Dr Zeng Yiwen and 2) Dr Janice Lee. Dr Janice shared how socio-ecological influences impact land-use and land-cover changes in the tropics, while Dr Zeng spoke on nature-based climate solutions to achieve sustainable development. Dr Jani Tanzil shared that more than 50 people attended the Online Public Forum event.

The Council thank both Drs. Zeng Yiwen and Janice Lee for their engaging and thought-provoking talks and for spending their Saturday morning with us. Appreciations were also made to A/Prof. Lim Tit Meng, Ms Anne Dhanaraj, Dr Savita Sharma and Science Centre Singapore for their support for the Public Forum.

THE 2ND YOUNG MARINE SCIENTIST SYMPOSIUM

Organised By SIBiol in Partnership with the St John's Island National Marine Laboratory

In partnership with the St John's Island National Marine Laboratory (SJINML; https://sjinml.nus.edu.sg), SIBiol helped organized the 2nd Young Marine Scientist Symposium (YMSS), held virtually on the 11th June 2021. The YMSS brought together marine science researchers and students, serving as a platform for the young researchers to share their research findings with the wider community. In addition to a variety of student presentations by winners of the Marine Science & Research Development Programme (MSRDP) Young Marine Scientist Award, this second YMSS featured keynote presentations from local and international speakers invited by both SJINML and SIBiol. Topics such as how science and research can help environment management and inform policy decisions were covered. The full YMSS programme can be found online at: https://tinyurl.com/YMSS2021ProgrammeBooklet. There were a total of 427 attendees for the YMSS, including approximately 200 local pre-university students invited through the Biology Olympiads platforms (i.e. IBO, SBO, SJBO).

For more information on the MSRDP, you may download a free copy of the e-book at: https://drive.google.com/file/d/1S7PVlVYZpI18FGKFIu3I3neQgJxwA8SH/

RESEARCH SEMINAR

Organised By SIBiol in Partnership with the St John's Island National Marine Laboratory

Once again partnering with SJINML, a research seminar was held virtually on 15 December 2021, featuring Dr Ow Yan Xiang, recipient of the SIBiol Research Trust Fund. Dr Ow spoke about her research pertaining to seagrasses and sedimentation, and how keystone marine organisms – like architects – may influence the movement of marine sediments around them.

The SGD$5000 awarded to Dr Ow supported part of her research on seagrass and sedimentation. SIBiol will soon be acceptation new applications for the Research Trust Fund in the coming financial year; keep a look-out for more information that will be posted on our website (https://sibiol.org.sg) or on our Facebook page (https://www.facebook.com/Singapore-Institute-of-Biology-SIBiol-227443917592 3512)