



NURTURING TOMORROW'S TALENT

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With a keen focus on nurturing the next generation of scientists and researchers, the A*STAR Graduate Academy (A*GA) offers scholarships, fellowships and collaborative partnerships with universities, to develop young scientific talents to their full potential. We caught up with Prof Alfred Huan on how the organisation hopes to foster an entrepreneurial spirit among its scholars to ready them for a future economy where innovation drives all things forward.

What does A*GA do?

The major pipeline of A*STAR's Singaporean talent core starts at A*GA. We recruit from among the brightest in our schools and provide the opportunities for them to be trained and nurtured in the best science and engineering institutions around the world. As they acquire the skills that prepare them to take on the challenges of a research career, we progressively acquaint them with A*STAR's mission through our research attachment programmes where they work with our researchers to gain first-hand experience. Upon their return, they are well-equipped to take up positions in our Research Institutes (RI) and make their mark in science and technology.

Another aspect of A*GA's work is to increase the diversity of our PhD student population through the Singapore International Graduate Award (SINGA) Programme.

We actively recruit from a spread of undergraduate universities, from South America and Europe to countries in the Far East and Middle East. The different expertise and perspectives resulting from the diversity of backgrounds and training enhances the work of the RIs. In addition, the students help us establish an international network for future collaborations even as they return to their home countries. A*GA also leads the interactions with overseas universities in partnerships for joint PhD training under the A*STAR Research Attachment Programme (ARAP) scheme, and this has proved to be a highly effective scheme for international collaborations.

What are some of the challenges and changes that A*GA has gone through over the years?

While A*GA has always aimed to create a stream of local scientific talent for A*STAR, it has become clear that a variety of skills will be required for a vibrant innovation ecosystem. The ability to create useful technologies and to take them towards commercialisation or adoption by industry will be valuable. Hence we have been flexible in allowing scholars to gain postdoctoral experience in high tech companies and start-ups, but at the same time, ensuring that they stay relevant to A*STAR's economic mission.

Another challenge comes in the form of maintaining the right level of engagement while the scholars are

pursuing their studies. There are over 900 scholars in various stages of their academic journeys and they are spread over numerous locations, so staying in touch with them is a daunting task. This is especially crucial during the PhD years when the demands of rigorous scientific training can at times leave the scholar feeling isolated and adrift. Hence, efforts are made to meet the scholars through the Connect, Advise, Reach out to and Engage (CARE) Programme Trips. The A*GA officers have invested much time in keeping track of the scholars' progress, and not surprisingly, they have become friends with the scholars through the rapport that has been built up. This is immensely satisfying and supplies the human touch to an otherwise transactional relationship. To be sure, we can always do more to spot the scholar who needs help, and we encourage scholars to keep a network of friends and to meet up with their mentors once each year.

Lastly, it is important that we make efforts to grow our local scientific talent base. Improving our outreach to students and inspiring them to take up a career in science has always been a challenge. Science Centre Singapore is one of our key partners who has supported our STEM objectives through activities that arouse the curiosity in students about natural phenomena and events that raise the awareness of the impact of science. These events include the annual Singapore Science Festival and the Singapore Science and Engineering Fair. But by far, the biggest contributions come from our own researchers who expend large amounts of time and effort in mentoring students in projects. They also play an active part in giving talks, outlining their personal journeys and sharing their experiences with the students.

What differentiates A*STAR's scholarships from other science scholarships offered in Singapore?

The rich and diverse environment at A*STAR exposes our scholars to a full range of activities, from conducting world-leading scientific research to developing cutting-edge technologies. They can take part in roadmapping exercises and technology scans, or partner with industries on real problems and technology transfer. They get to understand issues on licensing and handling intellectual property, and how collaboration agreements are structured. We strongly encourage them to explore collaborations with other agencies in the R&D ecosystem. Several scholars have started their own companies from the technologies that they have developed, and A*STAR offers advice and help in testing the robustness and viability of their ideas.

At the outset, we ask our scholars to think and plan creatively, and the only mandate we impose on them is to bring benefit to Singapore.

In today's context of fast-evolving disruptive technologies, how does A*STAR help nurture an entrepreneurial spirit in scholars?

At several university settings in the US and UK, there is a strong spirit of enterprise and of staying relevant. Scholars who are immersed in these highly entrepreneurial setups often return to A*STAR brimming with confidence and energy. They can join existing research groups with well-defined goals or gather with like-minded people to pursue novel ideas. Through our spin-off friendly policies, we encourage them to explore the local ecosystem and learn, to experiment with their ideas and to stretch beyond their usual reach.

Further opportunities are available for scholars to intern at ETPL, the commercialisation arm of A*STAR. This can take place during their undergraduate training or just before embarking on their PhD. The learning objectives are twofold:

- Assessment of technologies and market opportunities, understanding product development and commercialisation;
- Gaining insight on translating tech ideas into businesses and challenges faced by start-ups.

Scholars can use these opportunities to gain a better perspective on the impact of their R&D and make more informed decisions on their PhD directions.

Can you share what your typical day at work is like?

At A*GA, our main concern is the welfare of the scholars and students who are under our care. We constantly review the support that we provide, and find opportunities to strengthen the bonds between the scholars and the organisation. A typical day could begin with a review of existing policies, followed by a discussion of problems faced by a scholar in training or a request for leave of absence. The afternoon could be spent on analysing the effectiveness of our STEM outreach programmes as well as discussing ways to strengthen our several overseas partnerships.

The day usually ends with a surf on Facebook, to keep myself updated on some of the latest trends while also reading up the posts or comments by our scholars. It is always heartening to read their comments as it enables me to appreciate them as they are, while also keeping in tune with the scholars' views.

At A*STAR, we care about the future of our scientific talent, a major part of which would be our scholars. At the end of the day, I want to see a success story in every scholar, each forging his or her own way ahead.



NURTURING SCIENTIFIC TALENTS THE A*STAR WAY



Gain a top-notch education locally or overseas through our wide array of scholarships, ranging from undergraduate to PhD to post-doctoral.



Arm yourself with the necessary skills you need to excel as a scientist with our variety of research attachments.



Explore opportunities within the industry, join a start-up, intern at a leading technology firm or start-up your own company.