ASSAf 1996–2016
Commemorative article

ASSAf and young scientists: Transforming the future of science in South Africa

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KEYWORDS:
South African Young Academy of Science; transformation; academia; science engagement

HOW TO CITE:
Slippers B. ASSAf and young scientists: Transforming the future of science in South Africa. S Afr J Sci. 2016;112(11/12), Art. #a0189, 2 pages. http://dx.doi.org/10.17159/sajs.2016/a0189

Many academies globally interact with young scientists (viewed here as all those who have just completed postgraduate studies to mid-career scientists) only on an ad-hoc basis through prizes or once-off engagements. This substantial group of active knowledge producers is often not treated as a core part of the scientific community or as leaders who could shape science and society – despite the fact that they often drive new developments, and will be the leaders of the scientific community in as little as 5–10 years. It is often argued that they should be spending their time 'in the lab' and writing grants and papers, rather than busy themselves with the type of engagement and policy work that academies typically undertake. Consequently, the voices of the next generation of science leaders are often silent in policy discussions, even when the policy is about young scientists or about the future of science. It is thus not surprising that a recent special feature in *Nature* concluded: 'Academia is more difficult than ever for young scientists. That's bad for them, and bad for science.'[1]

This paradigm of interaction between academies of science and young scientists is changing in South Africa, thanks to visionary leadership in the Academy of Science of South Africa (ASSAf) over the last few years. ASSAf today is amongst the most active academies globally in their efforts to promote young scientists. There is no other body in South Africa that is currently doing more to provide platforms for their interaction and engagement, and to give a voice to this critical part of the science community.

While ASSAf has had a focus on recognising and supporting young scientists through annual Young Scientists' prizes together with The World Academy of Sciences (TWAS), the Department of Science and Technology or the African Union, and the Sydney Brenner fellowship, it has also developed a range of dedicated programmes over the last 6 years that touches a large cohort of young scientists across the country. Here I highlight some of the most significant of the activities through which ASSAf has supported young scientists.

International networks and platforms

A critical role that ASSAf has played for young scientists is 'upward connection or mentorship', by opening doors to top quality networks and organisations internationally. As an example, I first interacted with ASSAf in 2009 through a joint programme with the IAP: Global Network of Science Academies to send young scientist representatives to the annual World Economic Forum (WEF) meeting in China. As a direct result of this coming together of a global cohort of young scientists, which also included other South African scientists thanks to ASSAf, the Global Young Academy was launched in 2010. Soon after, the South African Young Academy of Science (SAYAS) was launched in 2011. In this way, ASSAf has ensured that a number of South African scientists have the opportunity to be involved at the forefront of stimulating the global Young Academy movement, which is now established in 23 countries, and with many more in development. South African young scientists continue to benefit annually from interaction with other young scientists from across the world at the WEF annual meeting in China, but also through linkage to various other global platforms, such as networks of academies of science, the Lindau Nobel Laureate meetings, international science fora, the International Network of Government Science Advisors, and many more.

ASSAf's influence extends beyond South African young scientists, through the large number of South Africans who have been involved with, and who have led the Global Young Academy, including hosting its second annual conference in South Africa in 2012. This reach is also particularly relevant in Africa where these fellows have been key partners to other Global Young Academy members in supporting the establishment and growth of other national young academies, including involvement in the Africa Science Leadership Programme, African Science and Society meetings, and continent-wide National Young Academy meetings (including one just completed in Mauritius), to name but a few.

Local networks and platforms

At a national level, ASSAf has been the key supporting organisation for the establishment and development of SAYAS. Following initial calls for support for this process, ASSAf convened a small committee of young scientists to drive the process; realising from the start that this process needed to be 'bottom up' and not 'top down'. ASSAf has continued to engage with SAYAS as an autonomous body. SAYAS operates independently from ASSAf, with a Memorandum of Understanding guiding their active and positive approach to partnership and engagement. Following the launch of SAYAS, ASSAf has also provided a physical home and administrative support for SAYAS through a shared appointment of a Liaison Officer. ASSAf also manages core funding to SAYAS from its parliamentary grant. As an active participant in management structures of SAYAS, I can attest to continuous and critical support from ASSAf without pressure or interference for the work and views of the members of SAYAS.

Such initiatives matter, not only for the individuals involved, but for young scientists in general in the country. Today SAYAS is the premier platform that provides 'a voice for young scientists' in South Africa, and that serves as a point of interaction with other young academies around the world, and with formal structures of government and science.

Young scientists are often best to serve as mentors and role models for other young scientists and school learners. By creating and supporting young scientist structures that can advance such goals, the impact of ASSAf reaches much further than the formal structures and programmes described above. For example, SAYAS is participating in projects such as '1000 Girls, 1000 Futures', science spazas that support and develop science clubs in underprivileged schools, studies on the experience of young scientists in South Africa, a PhD blog through which

students describe their journey through their PhD, and more. These projects reach cohorts of young South Africans that ASSAf would not have been able to do on its own.

An apt illustration of the unique interaction and perspectives that ASSAf and SAYAS bring are the recent statements from these organisations about the #FeesMustFall related events on campuses across the country. At the height of this crisis, with campuses being closed or engrossed in protests, there was a growing desire for these academies to give a perspective as the biggest collection of academics representing all institutions. The first statement was issued jointly from both organisations and captured a core message of concern and an offer to contribute towards solutions. While it was authoritative and strong, the statement could not address some of the more contentious issues. Soon thereafter at the General Assembly of SAYAS, the young scientists felt that there were further – and more specific – issues they wanted to address, and so issued a second statement. Together these two statements capture a richer perspective of the views of South African academia, and contribute to a more nuanced 'voice of scientists'.

Since 2010, ASSAf has hosted an Annual Young Scientist Conference, in partnership with the National Research Foundation, Department of Science and Technology and SAYAS. At these conferences, ASSAf has brought together a broad range of young scientists from across Africa to network and present their work to peers in a truly interdisciplinary setting. Importantly, these conferences have addressed a range of topical issues, from biodiversity, to the role of science in empowering women in Africa and, most recently, human rights. By engaging young scientists on these topics, ASSAf has impacted more than a 1000 future leaders in science. There is no doubt that these intersections and engagements will have deep and lasting impacts on the sensitivity and activism amongst the future leaders of the scientific community on these issues.

SAYAS and other young scientist engagements are important vehicles for ASSAf to promote diversity and transformation in the South African research community. Through this active engagement with young scientists from all institutions and groups in South Africa, and with a specific focus on underrepresented groups, ASSAf is providing the exposure and opportunity for a truly representative cohort of future leaders of science in the country to emerge.

Young scientists and ASSAf publications

ASSAf has an important national role as a custodian of key scholarly publications and in overseeing publication platforms. Herein lies opportunities to further engage meaningfully with young scientists. The *South African Journal of Science* has been an outlet for members of SAYAS from early on. Other than research articles, SAYAS members have been able to raise their voice through opinion articles on a variety of topics, from the reflections on science's role in sustainable development[2], to the research experience of young scientists in the country[3].

This is a feature that ASSAf can help enhance in future, possibly via a dedicated 'Future Voices' collection of opinion pieces on a regular basis (as *Science* does every few months through their Next Gen Voices feature). SAYAS inaugurates 10 new members every year – short opinion pieces from each of these leading young scientists on key developments in their field, especially giving a South African or African perspective, or on other topical issues (e.g. the impact of #FeesMustFall) could add rich insight into the direction of science development in the country.

Young scientists are also actively involved in another of ASSAf's publications, *Quest*. This high-quality 'popular science' magazine provides an ideal outlet for SAYAS to promote a closer interaction between science and society, which is one of its core objectives. *Quest* has covered numerous articles about the work of SAYAS members in the past 5 years. This relationship too could be explored even further through dedicated features, for example, by linking to the PhD blog run by SAYAS or by specific partnership during activities run by SAYAS.

Transforming the future

At 20, ASSAf is a young academy compared with many around the world. The next 20 years of its development will no doubt be directly influenced by the work it started amongst young scientists in the last few years. SAYAS members are already actively involved in various structures of ASSAf, providing a fresh perspective in standing committees and other structures. The pool of experienced young scientists from which to draw for these functions will continue to grow in coming years. This is an important outcome of ASSAf's efforts, especially in the light of the fact that such a resource was not available even 5 years ago.

Furthermore, the first SAYAS alumni have recently been incorporated into ASSAf (although this is not an automatic process), and we are likely to see a steady increase in such ASSAf members over the next few years. By the next 20-year mark, a substantial group within ASSAf is likely to have been members of SAYAS. These new members will bring with them experiences of different approaches from their involvement with young academy activities. Moreover, they represent a network of transformation-minded science leaders, ready to work with the ASSAf structures to engage society, our scientific community in South Africa and beyond.

Over the last few years, ASSAf has laid a foundation for the promotion, engagement and capacity development of young scientists. If these activities and platforms are supported (and expanded) into the future, they have the potential to transform the research landscape in South Africa, through a more engaged, representative and transformation-minded scientific community.

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