CONDECTORS The magazine of the Global Young Academ

GYA History: Pioneer Members Recalling the Foundation of the GYA

Bridg<mark>ing the Leadership</mark> Gap in Science Careers: Kai Chan

Science and Entrepreneurship: Ivana Gadjanski

Global Impact of Emerging Infectious Diseases: Olanike Adeyemo

AGM 2014 in Santiago, Chile: Jose Correa

GYA Member Profile: Dexter Tagwireyi

Issue 3 December 2014

December 2014

3 The AGM 2014 from an organizer's perspective by *Jose Correa*

6 In brief: GYA member *Olanike Adeyemo* on the Ebola outbreak

8 GYA member *Kai Chan* on Bridging the Leadership Gap in Science Careers with Postgraduate Training

10 Editorial: *Fridah Kanana* on Access to Education in Kenya

12 Feature: GYA Founding Members recall how it all started

17 *Ivana Gadjanski* on her experiences with Science and Entrepreneurship

18 GYA profile: *Dexter Tagwireyi*

T.

L he vision of the GYA is to become the voice of young scientists around the world. We construe science broadly to include all evidence-based disciplines, from natural sciences to humanities and from engineering to behavioral research. Our 200 members are not limited to academia; they are venturing out into entrepreneurship, policy dialogue, and corporate activities as well. However, they all have a focus on knowledge development and the betterment of society.

The disciplinary and cultural diversity of our membership is what makes the GYA unique. This diversity is a wellspring of thought-provoking ideas and novel approaches to problem solving. It also helps us recognize the extent to which our challenges and values are shared.



GYA Co-Chair Eva Alisic

In this issue of GYA Connections, we pay tribute to our founding members. We are incredibly thankful for their contributions to the establishment of the GYA, and glad that we can keep them closely involved as alumni. This issue also covers a number of topics that are of core interest to the GYA, including education (from primary to postgraduate), entrepreneurship as a bridge between science and society, and global public health. Finally, we look back on our packed and buzzing meeting in Chile in 2014, and forward to a busy year ahead . For those of you who are reading this at the AGM in Canada, I wish you a very warm welcome and look forward to catching up with you in person.

About the GYA

The Global Young Academy is the voice of young scientists worldwide. Our goal is to empower and mobilize early-career researchers to use science to make a better world.

Co-Chairs: Sameh Soror (Egypt) Eva Alisic (Australia) Managing Director: Heidi Wedel (Germany)

Telephone: +49 30 20370-559 (Berlin) Email: info@globalyoungacademy.net

Find out more at www.globalyoungacademy.net

GYA Connections is published semi-annually. Suggestions for content should be sent to the editor.

Editor: Rob Jenkins (UK) rob.jenkins@york.ac.uk

Funding: The GYA gratefully acknowledges core funding from the *German Federal Ministry of Education and Research (BMBF)*, as well as support from the *IAP*: The Global Network of Science Academies. Support for individual projects is provided by e.g. the *Robert Bosch Foundation* and the *Volkswagen Foundation*. Participants of the AGM 2014 playing the Science Education Game "Expedition Mundus"



Cover Photo: Lively Discussions over hot beverages at the University of Chile, Santiago/Chile during a break at the AGM 2014. © 2014 Florian Wiencek / GYA

Report: AGM 2014



Annual General Meeting 2014 in Review

Panel on "Natural Resources in a Finite World" led by GYA member

he Annual General Meeting (AGM) is the biggest event in the GYA calendar. Every year, GYA members, distinguished scientists, and policy makers from around the world come together to work towards Laura Petes their shared objectives. In 2014, the destination was Santiago, Chile. This was the first AGM to take place in South America, and a landmark in the development of the Academy. Our members convened policy discussions on climate change and the future of science education, bringing together representatives from, government, industry, and education.

> The outstanding list of attendees attests to the truly global scope of the meeting: 105 scientists and scholars from 34 nations, including 78 GYA members, a group of Chilean Young Scientists and distinguished speakers including Jorge Sequeira (UNESCO), Angélica Bucio (ICSU-ROLAC), Juan Asenjo (President of the Chilean Academy of Sciences and Co-chair of the InterAmerican Network of Academies of Sciences), Howard Alper (Chair of the Government of Canada's Science, Technology and Innovation Council) and Jorge Allende (Founder of the Global Science Education Programme of the IAP (Inter-Academy Panel: The Global Network of Science Academies).

Over the preceding twelve months, Felipe Álvarez chaired the local organizing committee that prepared the ground in Chile. Meanwhile the program committee ensured that work would continue apace on key GYA projects: strengthening the network of National Young Academies, addressing the Global State of Young Scientists, and consolidating working groups in all three GYA focus areas.

The day before the opening of the AGM, representatives of NYAs around the world met to discuss the growing network of Young Academies, to strengthen cooperation between Young Academies, and to finalize plans for the Second Worldwide Symposium of Young Academies in 2015. This presented an interesting challenge for the local organizers, as Chile itself does not yet have a National Young Academy! Our fervent hope is that putting Santiago in the spotlight with the AGM will provide the energy to get the Chilean Young Academy off the ground.

The conference theme, Natural Resources in a Finite World, encompassed fundamental challenges to our society, from food supply and clean water, to renewable energy. Jorge Sequeira, director of the UN-ESCO Office of Education for Latin

Jose Correa

America and the Caribbean, cast the net wider still, putting the case that people-and young people in particular-are the world's most precious resource. Sequeira underscored scientists' responsibilities to society, and reminded the assembled that no single community can address all of its challenges alone. Sounding a complementary note, GYA Co-Chair Rees Kassen observed that while some countries contain greater conventional natural resources than others, natural resources also include a country's human capital. These are precisely the intellectual and cultural resources that the GYA mobilizes in building its profile as a major global scientific adviser. Tying this principle to policy, Howard Alper, the Chair for Government of Canada's Science, Technology and Innovation Council,

Q: What are the most important barriers, and how should we overcome them?

A: "Connected scientists are a tremendous resource for public good. Tapping this resource means removing barriers to training and collaboration"

Report: AGM 2014



Howard Alper giving a kevnote on "Emerging Best Practices Innovation Agendas -Canada's Experience"

described a pioneering research funding scheme established in Canada that is open to applicants from anywhere in the world.

Resource issues also dominated the for National opening ceremony. Juan Asenjo, President of the Chilean Academy of Sciences and representative for IAP, highlighted the importance of continued cooperation between the IAP and GYA to promote scientific approaches to sustainability.

Q: How should we develop our network?

A: "Long-term partnerships with other organisations will be invaluable in identifying opportunities, extending our reach, and amplifying our impact"

Sameh Soror (GYA Co-Chair), Sergio Lavandero (Universidad de Chile), and María Elena Boisier (National Commission for Scientific and Technological Research, Chile) stressed the need for young scientists to take leadership roles in the sustainable use of natural resources.

The panel discussion, Natural Resources in a Finite World, brought together Jorge Sequeira, Howard Alper, and Angélica Bucio, alongside three GYA members—James Tickner Q: How should we support young scientists into leadership positions?

A: "Young scientists in leadership positions can help to inform policy and decision making."

(Australia), Olanike Adeyemo (Nigeria) and Antonio Andreoni (UK). Panellists expressed concerns about the limited progress made in addressing global problems, and also about the gap between what the public needs and what science can deliver. Participants also emphasized the importance of indigenous knowledge in stewardship of natural resources, as well as the ongoing need to articulate the scientific method to a wide range of audiences.

Q: How can we harmonise the scientific community and broader society?

A: "If society is suspicious of the scientific community, our voice will not be heard. Twoway trust and two-way communication are essential for science-society dialogue."

The afternoon sessions took place at Pontificia Universidad Católica de Chile with a keynote speech by Angélica Bucio of ICSU, an international non-governmental organisation dedicated to the advancement of science, and Future Earth, a new global platform for international scientific collaboration on global sustainability. Bucio highlighted the substantial overlap between the objectives of GYA and those of ICSU, citing GYA's commitment to science education and outreach and ICSU's promotion of the universality of science across cultures. Following the keynote, the parallel science sessions allowed GYA members to present new research addressing the conference theme.

The third day of the conference focused on science education and engagement. The coordinator of the IAP global program on science education, Jorge Allende, emphasised the importance of an early start in science education: "We must get to



The newly elected Executive Committee and Co-Chairs Eva Alisic and Sameh Soror present themselves on stage.

Report: AGM 2014

Q: How can we nurture these qualities from an early age?

A: Curiosity and creativity propel scientific progress.

their neurons before the arrival of their hormones".

Jorge Allende proposed a threefold strategy for communicating science to society more effectively. First, we must devise better ways and means of communication with non-specialists, putting aside scientific jargon.

Q: How should we build capacity for research and communication?

A: "Scientific research and science communication are essential in promoting economic and societal development that is evidence based."

Second, there is much to commend Inquiry-Based Science Education (IBSE), which trains pupils to address practical problems using laboratory-based experiments in the classroom. Allende appealed for science teachers to be trained and equipped to use IBSE techniques. Third, well-trained science journalists are needed to communicate and promote scientific discoveries and concerns to society. The subsequent plenary panel, Honest Brokers: GYA as a Global Scientific Adviser, heard that if the GYA is to have a significant impact on policy, our strategic approach should be to inform decisions and supply options to the global community.

The Santiago AGM was an excellent opportunity for sharing success stories from different countries and cultures. Representatives from the Chilean government and senate were present at several sessions, and witnessed strong support for initiatives proposed by the Chilean Academy of Science, including the creation of a Ministry of Research, and decisive state policies for research funding and science training for professionals.

As a result, the AGM helped young scientists in Chile to elevate their national scientific community, promoting excellence in scientific research and stimulating interdisciplinary discussions. These activities further strengthen the foundations of a future Chilean Young Academy ----an initiative that received a huge boost from the success and profile of this international meeting. We hope that other Latin American countries will follow this example, creating new opportunities for young scientists of the region, and helping them to establish links with young researchers around the world.

The GYA owes an enormous debt of gratitude to the generous sponsors of the meeting: the IAP: the Global Network of Science Academies, the Comisión Nacional de Investigación Científica y Tecnológica (CONI-CYT), the Iniciativa Científica Milenio (ICM), the University of Chile, the Catholic University of Chile and the German Embassy in Chile. Our thanks also to the GYA program committee-Antonio Andreoni, Jero Maze, Eva Alisic, Bernard Slippers, Jan-Christoph Heilinger, José Correa, Guru Madhavan, Mitsunobu Kano, Phil Gona, Sherien Elagroudy-Co-Chairs Rees Kassen and Sameh Soror, the Executive Committee, and Berlin Office staff Lukas Bartak, Miriam Beck, Heidi Wedel, and Florian Wiencek, and to María José Cofré and her team for overseeing practical arrangements in Santiago and getting the right people to the right places at the right times.

Jose Correa is Professor in operations research at the University of Chile in Santiago de Chile. He was part of the Local Organizing Committee for the AGM 2014.





GYA member Daniel Esser taking notes in a brainstorming session after the Ideas Forum.



GYA working groups conferring during the meeting at the University of Chile.



Co-Chair Sameh Soror reporting to the GYA members.

In Brief: Ebola and EIDs



Global Impact of Emerging Infectious Diseases: Ebola is one of many

The fight against emerging infectious diseases (EIDs) has never abated. EIDs reassert themselves with depressing regularity in the wake of wars and natural disasters, compounding the tragedy in affected regions. However, the rate of emergence and global reach of EIDs in recent years is quite alarming, especially in light of advances in medicine and public health. Some of the pathogens are familiar foe: dengue hemorrhagic fever, Nipah virus, West Nile virus, acquired immune deficiency syndrome (AIDS) and severe acute respiratory syndrome (SARS). But the battle lines shift continuously. Middle Eastern respiratory syndrome (MERS) was first diagnosed in Saudi Arabia in 2012, and is thought to have spread to humans from camels. Farm workers, slaughterhouse workers and veterinary surgeons seem to be at especially high risk of infection. Travelling in human hosts, MERS

has now spread from the Middle East (Saudi Arabia, United Arab Emirates, Oman, Lebanon, Qatar, Jordan, Yemen, Kuwait and Iran) to North Africa (Egypt, Tunisia, and Algeria), Asia (Malaysia, Philippines), and Europe (United Kingdom, France, Netherlands, Greece, and Italy). The first case was diagnosed in the United States on 2 May 2014 (Adeyemo, 2014). The ongoing Ebola outbreak, which emerged in West Africa in early 2014, is the latest in a long line of adversaries.

"Emerging infectious diseases are a major challenge to human, animal, and environmental health worldwide. They also threaten human trade and travel."

Most of the emerging diseases in humans can be traced to non-human origins, mainly wildlife. It is no coin-

Olanike Adeyemo

cidence that many of the Ebola outbreaks have occurred in settlements that border forests, where rapid growth of human population is bringing them into contact with pathogens that are foreign to them, particularly through more frequent contact with wildlife (Patz et al., 2004). Contact between humans and wildlife gives pathogens the opportunity to jump to a new host, so demographic, environmental, or cultural changes that increase human-wildlife interaction will tend to increase the risk of previously unseen pathogens emergingand of previously controlled pathogens re-emerging. For example, EID outbreaks in Africa have been linked to the butchering, sale, and consumption of 'bushmeat'. The term 'bushmeat' refers to any wild animal that is killed for food including rodents, fish, antelope, snake, elephant, crocodile, squirrel, porcupine, mongoose, monkey, gorillas. Analysing human diets in these regions have estimated that

In Brief: Ebola and EIDs

more than 20% of animal protein is obtained from bushmeat. In the Congo Basin alone, people eat more than 1 million tonnes of wild animals annually (equivalent to around 4 million cattle).

Other forms of human–wildlife interaction abound. Consider the rise in ecotourism, human settlement in wildlife habitats, deforestation, wildlife translocation, and ownership of exotic pets—many of which are non-human primates.

"It is especially unwise for developed countries to think that Ebola—or any other EID only affects distant lands or less developed countries."

Given the close genetic relationship among primate species, contact between human and non-human primates creates a particular risk. Bacteria, fungi, parasites, and viruses are easily transmitted through bites or scratches while handling an infected animal, inhalation of pathogens, or direct ingestion. Consumption of raw or undercooked animal products carries a particularly high risk of infection.

The threat of emergent diseases such as MERS in the Middle East and the on-going Ebola outbreak in West Africa is made even worse by their ability to spread and at an alarming rate. Ebola (named after the Ebola River in Zaire) first emerged in 1976, in two simultaneous outbreaks in Sudan and Zaire that each infected around 300 people. The current outbreak in West Africa is the largest and most complex Ebola outbreak since the virus was discovered. It has already claimed more lives than all previous outbreaks combined, with a death toll of around 10,000 by early 2015. The current outbreak has also spread across countries and continents, starting in Guinea then spreading across land borders to Sierra Leone, Liberia, and Senegal, and by air through individual travellers to Nigeria, the United States,

Spain, and the UK. Stabilising the affected regions and containing the outbreak depends on early detection, contact tracing, and isolation and monitoring of those exposed, together with sound preventive measures. Although these measures have so far averted a wider disaster, it is impossible to predict with certainty the development of the outbreak from here.

Conclusion

Emerging infectious diseases are a major challenge to human, animal, and environmental health worldwide. They also threaten human trade and travel. It is especially unwise for developed countries to think that Ebola—or any other EID—only affects distant lands or less developed countries. International air travel is the easiest and fastest means of transmitting EIDs. Should Ebola spread around the globe, the result could be a plague of biblical proportions.

Ebola Zaire has a fatality rate of up to 90%, and could wipe out billions in months if uncontrolled. Yet infectious diseases are not evolving mysteriously. The conditions for their emergence have never been better understood. What is missing is a preventative infrastructure. Global surveillance, integrated research and diagnostics, monitoring of human-wildlife interactions, adequate legal and institutional framework, and the political will to follow through with these measures, are key to averting future plagues.



"Bushmeat" from bush to fork.



Humans are exposed to EIDs through interaction with exotic pets.

Olanike Adeyemo is Professor of Aquatic Epidemiology at the Department of Veterinary Public Health and Preventive Medicine, University of Ibadan, Nigeria





Masai youths drinking blood obtained directly from cattle.

Investing in Leadership Training

Kai Chan



As a BRITE intern, Jenn Burt helped the Georgia Strait Alliance build relationships with scientists.

Let's confront an awkward truth about graduate education that we often prefer to ignore: Most graduate education in natural and social sciences leave graduates poorly equipped for the careers that they pursue.

My goal here is not to examine how this state of affairs arose, but rather to share what I learned about post-graduate leadership by initiating the Biodiversity internship program (BRITE) at University of British Columbia (UBC). The BRITE program fills a definite gap in graduate education, while at the same time inserting crucial science into policy and practice. Of all the projects I've been involved with at UBC, this is the one that I'm most proud of.

"Most graduate education in natural and social sciences leave graduates poorly equipped for the careers that they pursue."

Pressing issues in environment and sustainability require the expertise of leaders who are well trained in science. Climate change, biodiversity loss, food security, marine pollution, and over-harvesting are just a few

of the challenges that humanity faces in the 21st century. There are, of course, plenty of graduate students in science, but current programs inevitably lack the real-world and leadership training and experiences that would enable them to succeed and lead in non-academic organizations. But only a small fraction of PhDsperhaps 20%, based on recent statistics-will land tenure-track positions at universities. The remaining 80% settle elsewhere. In doing so, they are not failing academia. Rather, academia is failing them by insufficiently equipping them for success in other settings.

Without appropriate training and experience, science post-graduates are often ill-prepared to identify and exploit important opportunities to apply their skills. They may also miss critical experiences that could enhance their future work — even if that future work is in a different sector. Similarly, the scientific needs of partner organizations go unfulfilled, widening the gap between science and policy, to the detriment of both.

A partial solution is to provide graduate students with short internships in corporations, government agencies, and non-governmental organizations. This is what we have been doing through UBC's BRITE program. Such internships provide students with real-world experience in solving problems with partner organizations, offering the students invaluable leadership opportunities.

How We Did It

Great internship experiences don't just happen by themselves. They must be carefully crafted. This dawned on me when our funding came in, and I suddenly faced the responsibility of delivering on my promise. Where should I begin? What procedures should I put in place? I started by consulting an existing internship pro-



Sally Otto, director of the Biodiversity Research Centre at UBC and champion of the BRITE internship program gram at UBC (the Bridge program), and thinking through how our process ought to differ from that, given the rather different context. Sally Otto, director of the Biodiversity Research Centre and PI of the NSERC training grant, was instrumental in shaping the program from the start. Having plotted our course, we launched, with procedures in place for revisiting guidance and policies. At the end of the first year, we identified five essential criteria for successful intern-host pairings. We still use the same criteria now:

1 Contribution of the opportunity to the student's career

2 Importance of the project, to the partners and more broadly

3 Fit of student with project; ability of the student to do as hoped

4 Quality of internship experience, based on the working environment and supervisory arrangements (here drawing upon past intern reports to assess partners)

5 Financial considerations (including matching funds from partners, but high scores also if a project depends critically on BRITE funding; low scores if no matching funds or if BRITE funding is only helpful and not necessary).

To find good matches, we ask the students and prospective hosts to prepare an application that speaks explicitly to all these criteria, and we engage them in a back-and-forth to help them through the process.

What We Learned

Was the scheme working? Reports from the interns themselves and from the host organizations indicated that the scheme was a great success. We now maintain a list of past interns, their host organizations, and their projects. And their feedback continues to inform improvements to our initial procedures.

Future Directions

All good things come to an end. The BRITE grant was a one-time opportunity, and the end is nigh. So will the internship program dry up, and all our learning and social capital vanish? No! The inimitable Sally Otto was recently awarded the MacArthur "Genius Grant", and in a huge vote of confidence and inspiring generosity, she contributed \$100,000 to jumpstart a \$1 million endowment effort to keep BRITE running in perpetuity. We need more help to make this dream a reality, but now we are truly on our way. If you want to contribute to this effort, please visit 'Biodiversity Internship Fund: Help our students help the Earth'.

So, how can academia simultaneously train young scientists for a diverse set of non-academic careers, and insert much-needed science into policy and practice? We don't have all the answers, but we feel that now we have one. An internship program can make a real difference. Here are a few reflections shared by interns and partner organizations:

* "The BRITE internship was extremely successful for me... I got a job with the organization I interned with! For many non-profits, especially in a poor economy, they don't have the money to hire interns. And as a student I certainly couldn't afford to work there for free. This internship showed them the value of having an academic work with them (I was the only person with a PhD working there), and supported me while doing that." – *Kerrie O'Donnell, placed at Ecotrust Canada*.

* "The interns that CPAWS-BC had the opportunity to work with through the BRITE program added immeasurable capacity and insights to our conservation work. Having access to innovative thinkers who could tackle complex policy and research issues is invaluable to a non-profit conservation organization and we look forward to working with BRITE scholars in the years to come." – *Nicola Hill, Executive Director, Canadian Parks and Wilderness Society, BC Chapter*



* "My BRITE internships have been a wonderful bridge between where I am as a student and where I want to be as a professional." — Manon Picard, placed at CPAWS-BC and the Secretariat of the CBD.

* "We were extremely happy with the way this internship turned out.... Having Jenn be part of our team for 6 weeks was a huge benefit to our organization, in the work she did, in the connections she helped us forge with scientists and other organizations and in the support she provided other staff. It was also a real pleasure to work with her. Our only regret is that she wasn't with us longer." – Georgia Strait Alliance

Kai Chan is Associate Professor and Canada Research Chair at the Institute for Resources, Environment and Sustainability at the University of British Columbia, Canada



Editorial: Access to Education

Access to Education – a Kenyan Experience

Fridah Kanana



Not all children have access to the same technologies, which results in inequalities.

The routine of a university lecturer runs something like this: Teaching is the core business, assessment and marking follows. During semester breaks, lecturers catch up with the other core business—writing grant proposals, conducting research, and writing scientific papers that are mandatory for promotion. How much time do we actually have to think about those we train?

> My university, Kenyatta University, has a reputation as one of the best teacher training institutions in Kenya. It is also the largest in the country, with over 70,000 students. Class sizes often exceed 400 in undergraduate courses, and over 50 in postgraduate courses.

> Class sizes this large have definite consequences for teaching and learning. We seldom get to interact closely with our students, to mentor them, or to share with them how we came to be where we are. We have no idea about their working and living con-



ditions, and we rarely find out where they go after university. How did classes get so big? Are the universities themselves responsible for the soaring numbers, or do we have to look to the government that supports and sponsors education? As we will see, the answers are not straightforward.

I want to focus on where students at Kenyatta go after graduating. Many make it as high school teachers. In 2013–2014, the Commonwealth of Learning funded a project in Kenya on Open Resources for English Language (ORELT)—resources that are designed to improve the quality of English language teaching at the Junior Secondary School. As a consultant on this project, I had the opportunity to interact with some of my former students in a workshop on English language teaching and learning.

Working on this project gave me a new perspective on the education system in my country and the realities on the ground. I had the opportunity first to train teachers, and then to visit them in the workplace to see how they were using the ORELT materials. During these visits, I came to understand the ironies of access to education in Kenya—and in many African countries.

"Millions of children around the world are deprived of the right to education. The result: One out of three children never sees the inside of a classroom. Ministry of Education works with other Ministries, national governments and development partners to achieve universal free primary education and gender equality by 2015."

Kenyan Ministry of Education

Some schools were well equipped with expensive equipment, and pupils were happy learning through books, DVD's, or online materials. In other schools, the picture was very different. Yes, they had the DVD, but there was no electricity, let alone a

Editorial: Access to Education

The Kenyan School System

Kenya introduced free primary education in 2003. Primary school education takes eight years, secondary school takes four years, and university takes another four—an 8-4-4 system. Massive enrollment in primary school required expansion of the education infrastructure at all levels. Primary schools were immediately overstretched. After eight years, the first wave of free primary children were expected to join secondary schools. To manage this influx, the government established day secondary schools as an alternative to boarding schools. The boarding schools are mainly church sponsored, and are well equipped with modern laboratories and library facilities. Day schools are cheaper to attend than boarding schools but are less well equipped, as the government funding typically covers building costs only. As a result, parents are left to support their children with books and other facilities that the day schools require. In some cases, students have to carry out scientific experiments in betterequipped neighbouring schools.

Fees present additional challenges. Traditional secondary schools are even more expensive than universities, owing to lower levels of government subsidy. National and Provincial boarding schools might charge as much as \$1,400 per year, while universities typically charge \$350. This puts both institutions beyond the reach of many Kenyans. Although day schools are cheaper—around \$200 per year—the reality is that many students cannot afford even these fees, and the schools lack basic facilities like course books for teachers.



School library at Tigithi Secondary School, Nanyuki, Kenya

DVD player. We also discovered that in some of the day schools, learners were taught by unskilled teachers, or by their former schoolmates, who had only just completed secondary education themselves.

The Open Resources came in especially handy in these very needy schools. After adoption of these resources, performance in English improved significantly. This begs the question: Are Open Access Educational Materials the way to go? The modern world is often described as a global village. I believe that if African children are to compete on an equal footing with the rest of the world, they need help to access quality education. The only way this can be achieved is by capacity building specifically, by improving infrastructure and acquiring more educational resources. How can a child in a remote African village shape the future of technology if they have never seen a computer? How are they expected to become the next generation of innovators and inventors? How will they propel Africa's economic growth and independence?

In my opinion, developing countries such as Kenya should not sacrifice quality on the altar of access and equity. Instead, the goal should be to strike a balance between these interests, if our children are to gain anything meaningful from the expansion of educational opportunities. Only then will the graduates of our education systems be empowered members of society who can realistically work towards Millenium Development Goals. Expansion of university education alone cannot tap the human brain resource that is out there but unnurtured. Tapping that resource will require change in the school system too.

8-4-4 Education System



Graphic © Florian Wiencek / GYA

Fridah Kanana is a lecturer in the Department of English and Linguistics, Kenyatta University, Kenya.



How It All Started – Pioneer Members **Recollect the Foundation of the GYA**



Partici-Foundation Workshop 2010

Amal Amin

pants of the Professor at the Polymers and Pigments Department, National Research Center, Cairo, Egypt and TWAS young affiliate, was EC Member from 2010- 2013

> I was born and raised in a country where people perceive the distance between East and West to be very

pioneers from many different backgrounds. But I never suspected that this conference would change my life. Among the delegates, I encountered enthusiastic, optimistic young researchers who were serious about using science to make the world a better place. Friendships sprung up quickly, and over the next few days, a beautiful plan began to take shape.

"The GYA was built on friendship, passion, dedication and excellence, and the work of building it has brought many rewards"

great, though our nation has a long and honorable history bridging the two worlds. During my travels I always tried to show that the distances can be shorter if we put aside political and religious concerns, and communicate in a spirit of mutual respect and understanding. That is why I chose the universal language of science to communicate with others. In 2009, I was surprised and delighted to be chosen as a distinguished young scientist to represent Egypt at that year's summer Davos Conference. I knew that this would be a golden opportunity to meet experts and

This plan came to fruition in Berlin, February 2010, with the founding of the Global Young Academy-a young, strong and unique organization rising from friendship and ded-

ication to shared goals. I like to think that the GYA and I influenced each other. As an Egyptian founding member, and a member of the Ex-

GYA founding member Hans Hilgenkamp in group discussion with members

ecutive Committee, I had the opportunity to speak for Egyptians, Arabs, Africans and maybe all the developing countries, to carry the message that we are all the same, and that we all have a stake in shaping the world. As a female scientist from the East, I resolved always to speak up, and to act in accordance with my conviction that a better future belongs to men and women at all levels. There have been challenging times. Two general assemblies of the GYA that were due to be held in Egypt were cancelled because of political unrest in the country. But I knew that I had to overcome my disappointment and focus on the bigger picture—growing the GYA to serve humanity.

The GYA was built on friendship, passion, dedication and excellence, and the work of building it has brought many rewards, from the long list of GYA activities to the large number of members from developing countries-including Egyptians in leadership positions! However, the greatest reward has been the circle of friends with different languages in different parts of world. To those dear people, I would like to say that you can always be sure of having a friend in my part of the world. My deepest thanks to all founders and other members for their enthusiasm and hard, faithful work over the years.



Catherine Beaudry, Professor and holder of a Tier I Canada Research Chair on the Creation, Development and Commercialisation of Innovation, Department of Mathematics and Industrial Engineering, Polytechnique Montreal

My most vivid memory of the origin of the GYA is related to the immense pleasure that I had discovering winter Berlin with some very good African friends, and the terrible guilt that I felt as they slowly froze on the way back to the hotel. Berlin in February is not particularly warm! To my mind, worldwide friendship and collaboration are the most important gifts the GYA has given its members.

From the outset, I have been a strong advocate for tearing down the disciplinary silos and working in a truly transdisciplinary fashion. To this end. I have tried to convince colleagues that we should tone down the "science" rhetoric and embrace scholarship and research more broadly. Many of our social science and humanities colleagues do not regard themselves as part of the science world. I have so far failed to get these changes written into the constitution, but the membership reflects an increasingly broad cross-section of research, so there are grounds for optimism!

I have not had the pleasure of working on the executive committee or serving as a co-chair, though I have contributed much to the Global State of Young Scientists as project leader (should have been Global State of Young Scholars, but hey!). The study involved surveying 650 young scholars throughout the world and conducting 50 in-depth interviews in order to identify the key issues that are of concern for them. This project had been in gestation since its instigators met in Dalian in 2009, and it took four years of work to finally arrive at concrete evidence-based recommendations. Back in Berlin in 2010, we only dreamed that we could raise research funds and perform real research via the GYA. Four



years later, the GYA is in a position to fund Working Group activities and award research grants. In turn, the concerns and successes of my fellow GYA members have helped to shape my own research, and for this, I owe every single one of them a debt of gratitude. Thank you for sharing our dream.

Gregory A.Weiss, Professor of Chemistry, Molecular biology and Biochemistry at University of California, Irvine, USA was the first Co-Chair from the developed countries (2010-2012)

I well recall the giddiness I experienced when first meeting my counterparts from Egypt, Sudan, South Africa, New Zealand, Chile, Malaysia, and dozens of other countries. Catherine Beaudry talks at the founders dinner at AGM 2014.

edge discovery is certainly a tough business. But we quickly realized that we could learn from each other and advance solutions with our diverse voices. We also realized that we had a lot in common, such as sharing joy in figuring out how our universe works.

We wanted other young scientists to experience this thrill of meeting new science friends and exchanging ideas and experiences. So we reignited an idea that sparked at the 2008 Summer Davos meeting – to build on the Junge Akademie concept to create a global young academy. We had a lot of ideas and ambition, but little clue how much effort was required. So, we jumped in with both feet, setting in motion the foundations of the GYA.

"If I could have one wish for the current and future GYA members, it is never to lose that pioneering, can-do spirit and determination to be the voice of young scientists around the world"

Though I had attended many science conferences previously, the World Economic Forum Summer Davos meeting in 2009 provided my first glimpse of the wider world of science and young scientists from developing countries and other places beyond the usual locations.

We talked and talked and talked some more. Almost immediately, we found that every young scientist had complaints. Science and knowlThe next few years of groundwork were exhilarating and challenging. We accomplished a surprising amount in a short time—drafting a Constitution, setting up a website, launching projects, hiring a Managing Director—and earned a lot of credibility from key supporters for our energy and rapid progress.

This success arose from the tremendous efforts of too many founders to list. My heartfelt thanks to the truly



The first EC of the GYA 2010-2011 (from left to right: Rees Kassen, Paul Nampala, Bernard Slippers, Kassymkhan Rapparov, Amal Amin, Gregory Weiss, Nitsara Karoonuthaisiri, James Tickner, Yael Hanin, Tilman Brück]

exceptional individuals who helped turn the GYA dream into a reality, and special thanks to Nitsara Karoounuthaisiri and Bernard Slippers who served with me as Co-Chairs. Exchanging emails with them on a daily basis was always a pleasure, and their wisdom and leadership made it possible to manage a new organizaextends to every corner of

tion that extends to every corner of the world.

If I could have one wish for the current and future GYA members, it is never to lose that pioneering, can-do spirit and determination to be the voice of young scientists around the world.

Hans Hilgenkamp, Professor at Faculty of Science and Technology & MESA+ Institute for Nanotechnology, University of Twente, Enschede, The Netherlands

The real starting point of the GYA in my recollection was a meeting in the lobby of a hotel in Tianjin, China on the evening of Friday, September 26, 2008. With about 40 other younger scientists from all around the world, I attended the World Economic Forum meeting in Tianjin and a pre-meeting, the 'IAP Conference of Young Leaders in STI – 2008.'

Realizing that this was going to be a conference that was very different from all those that I had attended previously, I decided to keep some sort of diary during the meeting. In the IAP pre-meeting, in a session entitled 'The role of frontier science in shaping society', I gave a little presentation on the German and Dutch young academies and suggested bringing this concept to a global level. The Young Academy concept drew a lot of interest, and to my surprise I heard that in Sudan a similar initiative existed already. Later that evening, a group of 15 or so scientists got together for a discussion in the lobby of the hotel. In my diary I wrote at the end of the day: 'Vrijdagavond diner. Initiatief voor globale jonge akademie begint te leven.' In English this is: 'Friday evening dinner. Initiative for global young academy starts to live?

As a first activity following from this hotel lobby discussion, the idea was to draft a statement from young scientists at the Tianjin meeting, setting out the ambitions of young scientists and the important roles that young scientists can play in shaping a better world. We felt that a tangible, very important outcome of the meeting would be to convince the IAP and the WEF that the initiative to get young scientists together in the context of the World Economic Forum should be continued. We needed this continuity in order to establish ourselves as an organisation. With his tremendous energy and insight, Tilman Brück lead the drafting of the Tianjin Statement 'Passion for Science - Passion for a Better World'. The future inaugural GYA Co-Chair Nitsara Karoonuthaisiri was also actively involved in this, as well as many others.

The IAP and the WEF decided to follow up the initiative in 2009, now in Dalian. Carrying the vibrancy and momentum from the Tianjin meetings over to Dalian, the Global Young Academy initiative (for a short time called the Global Young Scientist Academy GYSA) developed further. Greg Weiss in particular showed great leadership in keeping the activities structured and up to speed. Similarly as for the Tianjin meeting, the notion was that a tangible result would be very beneficial. But being prepared, we now could shoot a bit higher. The result was the Editorial in Science Magazine, 'Empowering Young Scientists', which appeared in April 2010.

After the Dalian meeting, the time was right to have our own young scientists meetings and to further establish the Global Young (Scientists) Academy. In 2010 we gathered in Berlin. This was the meeting in which the GYA was formally established, with Greg and Nitsara as the first Co-Chairs. A lot of work needed to be done in drafting the first work plans, formulating the statutes, etc. With great enthusiasm this was carried out, often in nightly sessions, which have since become a hallmark of the GYA.

James Tickner, Mineral Resources Flagship, CSIRO, Australia, was Head of GYA selection committee and EC member 2010- 2014

The Global Young Academy was born in an almost non-stop meeting held

over 3½ days in February 2010 in a very wintery Berlin. I think all of the 60 or so participants will always remember this workshop as an incredibly intense experience. We arrived with just an idea and left with a new organization—the GYA.

Looking back on correspondence from the meeting, it is clear that the formal agenda captured only a small part of the activity. One line in the program points to when the real work took place: '9 pm – informal discussions to re-equilibrate groups with new questions.' Every night, the emails flew thick and fast as groups met in bars, lobbies and odd corners to develop and share proposals on goals, projects, membership, funding and the constitution. Sleep was definitely for the flight home, or during dinner for some of us!

Photos from the workshop are a great memory of those who played a key role in launching the GYA: Tilman Brück, the workshop host; Greg Weiss and Nitsara Karoonuthaisiri, the first Co-Chairs; Catherine Beaudry, who argued passionately for the inclusion of the social sciences and the humanities; and many more. No meeting would be complete without at least one controversy, and in Berlin it was the dropping of 'scientists' from our name. I believe that the incredible diversity of the GYA has proven this to be the right choice.

I count myself really lucky to have been involved with the GYA from the very beginning. Being involved with the selection process every year was a real highlight: seeing the quality of applications rise every year and wel-



GYA founding members James Tickner and Nitsara Karoonuthaisiri



coming in such a fantastic cohort of new members to carry the organization forward."

Nitsara Karoonuthaisiri, head of Microarray Laboratory, National Center for Genetic Engineering and Biotechnology (BIOTEC, Thailand), was the first Co-Chair of the GYA from developing countries from 2010-2011

Through my first night as the founding Co-Chair, I was bombarded with congratulation emails and a heart-warming introductory email from my dear Co-Chair Greg Weiss.

Yet I honestly felt the pressure of whether we would be able to shoulder the expectations and secure the establishment of the GYA. During the first year, the GYA did not have a secretariat. Nor did it have any funding. But, what it did have was a passionate group of young researchers around the world who were determined to leverage science in both developed and developing countries. We were running meetings through Skype calls, which meant that some of us would have to be up at all hours of the night.

Without any funding initially, Greg and I were obliged to advance money for some GYA expenses. Each day we would confront a backlog of

From the left:

GYA past Co-Chairs Gregory Weiss and Bernard Slippers

emails awaiting our replies. Luckily, Greg and I lived on opposite sides of the planet, and this allowed us to respond around the clock.

To cut a long story short, we did secure financial support, and we did win recognition. We survived! I couldn't be more grateful for the opportunity as the founding co-chair to work with such an inspiring group of people around the world. And, I am most grateful to Greg, my wonderful co-chair, who lifted me up when I fell down at times during my co-chair year. Thank you very much!

Rees Kassen, Professor and University Research Chair, Department of Biology, University of Ottawa, Ottawa, Canada, was GYA Co-Chair from 2012-2014

Let me make a confession. My first reaction to the idea of the Global Young Academy was: What would it do? Why did we need it? Surely there are more pressing issues that deserve our energy and attention. And who are these swells who think they can pull this off, anyway?

Evidently my curiosity won out over my skepticism, though the skeptic in me put up quite a fight. It took about 30 minutes of the Berlin founding workshop in 2010 before I swallowed the idea of a Global Young Academy hook, line, and sinker. I'm not quite sure what convinced me, but I somehow sensed that what was happening was potentially very important, not



The GYA grew out of discussions amongst its founding members. Cross-disciplinary and cross-cultural conversation and collaboration continue to be the key to success of the GYA.

least because the other people involved were clearly exceptional. "Better to be in the game than watching from the sidelines", I decided, shortly after taking my seat in Berlin. What a decision that was!

Over two and half intense, exhausting, and exhilarating days, we laid the foundation for what was to become the GYA. Looking back I am impressed at how quickly we have matured. Instead of asking to be a part of international and global discussions, we are more often the ones being asked. We have been building our credibility, a process that has been helped by the excellence of our members, the work they do individually and on behalf of the GYA, the high quality of our staff, and the outstanding guidance and support we have received from our advisors and supporters. We still have a way to go in terms of our global presence, but we are certainly on our way. I have every confidence that the GYA will take its place as a respected and equal partner in global discussions on science and innovation.

"The only advice I have is to keep in the front your minds the ideals upon which the GYA was founded: excellence, independence, and impact" It is up to the next generations of GYA members to continue building on what we, the founders, have started. The only advice I have is to keep in the front of your minds the ideals upon which the GYA was founded: excellence, independence, and impact. I look forward to seeing how you, as the future of the GYA and the future leaders in research, will make the world a better place.

Vinitha M. Thadhani, Senior Scientist, Sri Lankan Institute of Nanotechnology, National Centre of Excellence, Founding President of Sri Lankan Academy of Young Scientists (SLAYS), was EC member from 2010- 2013

I would like to begin my account at the first Annual Meeting of New Champions at the World Economic Forum Meeting in 2008, where I met Tilman, Hans, Nitsara, Regina, Ranjini, and many other founding members of GYA. I still remember how passionate Tilman and Hans were in drafting the statement on "Passion for Science; Passion for better world", which first articulated the concept of GYA. Further foundations were laid in 2009 by a group of passionate scientists including Greg, Bernard, Amal, Akhyar, Yael and others, the momentum culminating in the official launch of the GYA in Germany the following year. It is an immense pleasure to see the continuing growth of GYA today.

As a member of the GYA, and contributor to its various activities, I have been able to meet many wonderful individuals from a wide range of backgrounds-people whom I would have never have had the opportunity to meet in the course of my day-to-day work. My interpersonal skills and self-confidence have improved dramatically in my four years in the GYA. As I result, I approached our national senior academy to establish a young academy moment in Sri Lanka. I am also very gratified at the directions in which the science education working group has grown since its inception in 2010.

I would especially like to thank Greg for his tremendous leadership qualities, Tilman and Hans for igniting the spark of the GYA, James for recruiting such fabulous members, Rees for his affable personality under any circumstances, Bernard for being there to put things right, and all those who want to see the GYA thrive. The founding of the GYA also provided me with great friends, including dear Amal, with whom I wish to continue my friendship for a long, long time.

Science and Entrepreneurship Today

Ivana Gadjanski

There is a tale about Thales of Miletus, the Ancient Greek mathematician and philosopher, that shows that he was not only an accomplished scientist, but also a very shrewd businessman—better yet, an entrepreneur.

Having predicted from planetary observations that the ground would be unusually fertile the following year, Thales arranged to rent all the olive presses in Miletus. His prediction was correct, and his monopoly on olive oil made Thales rich. But Thales' business moves were not driven by avarice. Indeed, his philosophy disparaged accumulation of wealth for its own sake. Still, it probably did Thales no harm to be able to fund his visit to Egypt, where he calculated the height of the pyramids.

All these centuries later, one might expect that scientists would have mastered business, and would be using wisdom, knowledge and scientific methods to turn a profit too. Yet, this is not what we see. In every country, even the famously entrepreneurial United States, academics still lack the skills to commercialize their ideas.

Many business texts emphasize the need to teach entrepreneurship to scientists. Although scientists are already entrepreneurial in the sense that we are innovative, and seek novel solutions, we do not necessarily value equity. This is a missed opportunity. Technology transfer and commercialization of the research results are increasingly integral to the conduct of research, leading to a fusion of science and entrepreneurship, especially in life sciences and biotechnology. The promise of this fusion extends far beyond financial gain.

Imagine you are a biologist. After much toil, you discover a mechanism that is particularly interesting for disease intervention. You publish papers on your discovery, bolster your h-index, ride the crest of media interest, and then? What is to show for all this success? Is your discovery saving lives? Is the world a better place? Probably not. To really make an impact on society, you need to get your discovery into industry. Technology transfer has to occur. As this vignette illustrates, entrepreneurship in science does not make basic research obsolete. On the contrary, basic research is the crucial first step. Making discoveries profitable and applicable in wider society only increases their impact and capacity to do good.

And if you want to have control over

how your discovery is used, you should be thinking about starting your own business, rather than selling the patent to a large pharmaceutical company (whose ethical standards may or may not match your own).

Advice on starting your own business in life sciences is plentiful. But the journey from theory to practice is hampered by the scarcity of business education programs in science curricula, mentoring opportunities,



support for biotech startups, and clear University policies on patent ownership—especially outside the US. Across the sector, there is a need for greater investment and dedicated venture funds; and a greater awareness in the scientific community of entrepreneurial directions.

"Advice on starting your own business in life sciences is plentiful. But the journey from theory to practice is hampered by the scarcity of business education programs and mentoring opportunities"

To address this need, I would like to propose a working group on Global Young Entrepreneurship in Life Sciences. Such a group could work to create a strong global community of young entrepreneurs in life sciences and biotechnology and to forge links with policy-making institutions. By organizing workshops and online courses for GYA members, it could equip members with entrepreneurial skills. It could also provide a supportive community for scientists who are thinking of starting their own businesses. As an organization of young, early-career researchers, the GYA is well placed to reach those academics who can make the biggest impact.

One possible model is FabLab (fabrication laboratory), pioneered by MIT. FabLab is a digital workshop equipped with tools that allow you to make almost anything. There are now over 150 FabLabs around the world, which are open to local inventors, scientists, small businesses, and entrepreneurs. Fablabs are focused on entrepreneurship, do-it-yourself (DIY) science, and putting research findings into practice by developing unique technology products. Many FabLabs attract a wider crosssection of companies and members of public than Universities typically attract. FabLabs thus offer a route to increased productivity, which is central to the competitiveness of any country, especially in a time of economic transition. By using schemes such as FabLab to set up their own businesses, scientists could help to strengthen the knowledge-based economy in their countries, potentially reducing brain drain, and narrowing the gap between science in developed and developing countries.

Ivana Gadjanski Assistant professor at Belgrade Metropolitan University in Serbia, is founder of Pubsonic and Fab Initiative, Researcher at Center for Bioengineering -BioIRC.



Dexter Tagwireyi School of Pharmacy, University of Zimbabwe

Each issue we profile members of the GYA. Here Dexter Tagwireyi tells us about his scientific development from poisonous plants to medicine.

A future scientist

As far back as I can remember, there were two things I wanted to be when I grew up. One was a Nobel Prize-winning scientist, and the other was a spy. Some years later, I am indeed a scientist (still working on that Nobel Prize)—and no, I am not a spy! However, I do like to think of scientists as spies of a special kind, who specialize in gathering intelligence from uncharted realms and adding it to the growing body of knowledge.

As little boys, my friends and I would mix various plants and other ingredients into mysterious concoctions and

claim that we had discovered new drug treatments. We even made these treatments freely available to the local lizards. When I was ten years old, my dad bought me a book titled 'The Young Experimenter', which contained pages upon pages of science experiments that one could try at home. I spent hours tinkering with the more simple experiments. So by the time I reached secondary school, I knew that science was for me. Two teachers in particular cultivated my love for science at school. One was Mr Moyo, who introduced us to secondary school science. Moyo was notorious for squirting water on delinquents in his classes using a water

bottle. The other was Mr Mazwi, who made chemistry seem like the only subject under the sun that was worth pursuing. As a result of Mr Mazwi's inspiration, I decided to study pharmacy at the University of Zimbabwe, and completed my first degree in

Dexter Tagwireyi gives an update of NYA activities in Zimbabwe at the AGM 2014.



Image © 2014 Florian Wiencek / GYA

GYA Member Profile

1997. During my years as an undergraduate, I developed a keen interest in toxicology. My PhD research focused on the clinical presentation, diagnosis and management of poisoning in Zimbabwe using data derived from eight major referral hospitals in the country. I also developed a simple toxicology screen for use in low income settings. Happily, a string of publications arising from this work led to my appointment as a fulltime lecturer in June 2004.

From Poisonous Plants to Medicines

During my doctorate studies, I noticed surprisingly high fatality rates in patients admitted with Traditional Medicine Poisoning (TMP). At that time, there was very little published research on toxicology of poisonous plants in Zimbabwe. My own research came to focus on the Amaryllidaceae family of plants, and specifically Boophone disticha-a well known poisonous plant in southern Africa. Patients who receive sub-lethal doses of B. disticha exhibit reversible central nervous system effects. At lethal doses, the cause of death is respiratory depression. Now here is where it gets really exciting for me. Paracelsus, the ancient Greek physician, made a famous pronouncement that anyone who claims to be a toxicologist or pharmacologist must know: all substances are poisons, and that there is none which is not a poison. Dose differentiates between poison and remedy. How true! If an adult with a headache takes two paracetamol tablets, the headache goes away. If the same adult takes fifty paracetamol tablets, death must be expected. With this principle in mind, I hypothesized that the poison Boophone disticha might actually have beneficial effects at very low doses. Consistent with this hypothesis. I soon discovered that decoctions and extracts of B. disticha were used in South African traditional medicine

Dexter Tagwireyi (right) with one of his MPhil students Louis Gadaga during graduation to manage neuropsychiatric illnesses. Since 2006, my research group has been studying B. disticha in the lab. Having examined its toxicity in vivo, we established safe doses for testing the claimed neuropharmacological effects in animal models. For the past seven years, we have investigated how extracts of this plant influence anxiety, depression, and memory performance, with quite exciting results.

"From the moment I set foot in that meeting, I knew that I wanted to be part of this academy"

These investigations of Zimbabwean medicinal plants have led to a number of scientific accolades, both for myself, and students in my group. In October 2009, I had the honour of being awarded the African Union-TWAS National Young Scientist of the Year Award in the life sciences category. I am a grantee of the International Foundation for Science (IFS) and a recipient of the University of Zimbabwe Vice Chancellor's Research Excellence Award for 2013, and have received travel fellowships from the Micromedex-American Academy of Clinical Toxicology (AACT) and the Society of Toxicology/AstraZeneca to present my research overseas.

The GYA beckons

My career as a researcher and academician has opened many doors for me. Perhaps the biggest opening was my appointment to the Global Young Academy. I was introduced to the GYA by our national senior academy (the Zimbabwe Academy of Sciences) who nominated me to attend the Annual General Meeting of the GYA in South Africa in May 2012. I was there as the inaugural president of the Zimbabwe Young Academy of Sciences (ZIMYAS), which had been constituted in October of the previous year. From the moment I set foot in that meeting, I knew that I wanted to be a part of this academy. I was particularly impressed by the energy that these accomplished young scientists exuded. The contagious work ethic was something that really grabbed me. These guys did not meet for the sake of meeting. When they met it was work-real work. I knew I had to be a part of this group. In September of that same year, I submitted my membership application. To my delight, I was admitted. Since joining the GYA I have benefited immensely. I have had the opportunity to contribute to a number of working groups, including the Women in Science working group of which I am a member. I was also involved in the Global State of Young Scientists (GloSYS) project from its inception in South Africa. But to my mind, the biggest beneficiary has been our national young academy, ZIMYAS, which has flourished through exposure to the GYA and other young academies. I look forward to my remaining years in the GYA, and I urge young scientists around the world to support this very progressive organization.



2015 GYA Events

31 January -1 February In-Person EC Meeting in Berlin, Germany

4-7 March CIFAR Global Scholars Meeting in Banff, Canada

14 March 3rd UN World Conference on Disaster Risk Reduction in Sendai, Japan

23-24 April ALLEA General Assembly in Lisbon, Portugal

8 May GYA-JRC Invisible Worlds Workshop in Brussels, Belgium

21-22 May EASAC General Assembly in Amsterdam, The Netherlands

25-29 May GYA Annual General Meeting in Chateau Montebello, Canada

9-11 June GloSYS ASEAN Regional Workshop in Thailand

7-10 July International Conference "Our Common Future Under Climate Change" in Paris, France

4-6 October Science & Technology in Society Forum in Japan

28-29 September IAP-IAMP-IAC Joint Board Meeting, in New Delhi, India

22-23 October GYA-IAP workshop on Solid Waste Management and Green Economy, at the Leopoldina in Halle/Saale, Germany

4-7 November World Science Forum in Budapest, Hungary

16-18 November 2nd Worldwide Meeting of Young Academies in Stockholm, Sweden



Executive Committee Member Rob Jenkins presenting at the UN Secretary-General's Scientific Advisory Board in Paris on 10 December 2014

Recent News



(JRC) and the European Academies' Science Advisory Council (EASAC) took place in Brussels, in order to identify undetected challenges for research. The brainstorming

GloSYS

meeting

ASEAN

Global Young Academy (GYA)

and external experts met for

the first meeting of the GloSYS

ASEAN project in Bangkok, Thailand. This kickoff meeting

was the first regional work-

shop following up on the Glo-SYS precursor study published

Kick-off

Members of the

JRC Brainstorming Workshop

and Cooperation On 11 July

2014, a GYA brainstorming

session with the EU Commis-

sion's Joint Research Center

Photo © 2014 European Commission Joint Research Council

resulted in plans for a GYA-JRC project on the topic "Invisible Worlds", developed by the participating scholars.

SAB meeting and Letter to Ban Ki-moon On 10 December 2014, the Global Young Academy (GYA) delivered a letter to United Nations Secretary-General Ban Ki-moon that stressed the importance of science for achieving sustainability and poverty reduction. The letter, written in response to the report by the UN's High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, contains five recommendations that were transmitted by Rob Jenkins (member of the GYA Executive Committee) and Managing Director Heidi Wedel at the meeting of the UN Secretary-General's Scientific Advisory Board (SAB) in Paris. The statement marks a new phase of proactive work for the GYA.



Photo © 2014 Global Young Academy / GloSYS ASEAN

by the GYA earlier this year (Friesenhahn and Beaudry, 2014). The workshop was hosted by the National Science and Technology Development Agency (NSTDA) and the National Science Technology and Innovation Policy Office (STI) on 3-4 November 2014. The aim of this workshop was to collectively brainstorm in generating the GloSYS ASEAN blueprint including development of a conceptual framework and an action plan for the next 14 months.

National Young Academies 2014 was a strong year for the Young Academy movement. The GYA was particularly happy to see six thriving initiatives complete their journey to National Young Academy status, namely from Kenya, Ghana, Egypt, Canada, Vietnam and India. In each of these countries, the GYA and its members have been pleased to offer assistance and advice. After fostering the exchange between existing NYAs with the two regional meetings (in Africa and Asia), and by inviting NYA representatives to meet before our 2014 AGM in Chile, a Worldwide Meeting of Young Academies is in preparation for 2015.

