

The 13th Biennial Meeting of
the International Human Rights Network of Academies and Scholarly Societies

제13회 국제과학인권회의

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The thirteenth biennial meeting of the International Human Rights Network of Academies and Scholarly Societies (H.R. Network) was hosted by the Korean Academy of Science and Technology (KAST) from October 25-27, 2018 in Seoul, Korea. Representatives of over 20 national scientific academies and scholarly societies were in attendance.

SYMPOSIUM

The meeting began with a one-day symposium, *Science and the Right to Development*, which included speakers from various H.R. Network-participating academies and academic institutions in Asia, Africa, the Americas, and Europe, as well as representatives from domestic and international human rights institutions.

Mooha Lee, Vice President of KAST and Chair of the Local Symposium Organizing Committee, and **Myung-Chul Lee**, President of KAST, provided opening and welcoming remarks, respectively. **Kyung-Seo Park**, President of the Korean Red Cross, offered congratulatory remarks.

H.R. Network: History and Mission

Martin Chalfie (2008 Nobel Laureate in Chemistry), Chair of the Committee on Human Rights of the U.S. National Academies of Sciences, Engineering, and Medicine and Executive Committee Member of the H.R. Network, expressed the H.R. Network's appreciation for the incredible efforts of the members and staff of the Korean Academy in organizing the symposium. He provided a brief overview of the history and mission of the H.R. Network, which works to address global concerns related to science and human rights and to promote the free exchange of ideas and opinions among scientists and scholars in all countries. Open to all interested academies, the H.R. Network provides a platform for sharing information on cases and issues of concern through its Washington, D.C.-based Secretariat. The Secretariat issues regular alerts to H.R. Network-participating academies concerning urgent cases involving scientists, engineers, and health professionals under threat as a result of their legitimate professional work or other peaceful activities. The H.R. Network's Executive Committee is composed of academy members from 12 countries. It periodically issues public statements on topical issues of global concern, such as gender discrimination in higher education and threats to scientific freedom. H.R. Network-participating academies assist in disseminating the Executive



Committee's statements, and many academies use the alerts and statements as a starting point for their own advocacy, with each academy acting at its own discretion. Apart from these activities, many H.R. Network-participating academies regularly engage with human rights by exploring the relationship between science, technology, and human rights through their research and reports and by marshalling assistance in the wake of human rights crises. Dr. Chalfie noted that, since its founding in 1993, the H.R. Network has met at H.R. Network-affiliated academies in 13 countries and has experienced striking growth. To date, more than 90 academies throughout the world have participated in the H.R. Network's activities, including by attending biennial meetings. Dr. Chalfie concluded his talk by calling attention to the September 2018 release of a resource guide produced by the H.R. Network Secretariat that highlights creative ways in which national academies around the world are integrating human rights activities into their work. He noted that the guide is part of a larger project of the H.R. Network to collect and share information on the evolving human rights work of national academies.

[Keynote Address: The Universality of Human Rights in a Changing World](#)

The keynote address was delivered by **Changrok Soh**, member of the UN Human Rights Council Advisory Committee and Professor at Korea University's Graduate School of International Studies. Professor Soh highlighted ongoing attempts by nation states to limit and constrain human rights using the fallacious argument that human rights can be curbed if they run counter to the exercise of cultural traditions. He stressed that the universal nature of human rights precludes attempts to promote a hierarchy of rights in which the rights of certain groups or citizens take precedence over others. Professor Soh discussed the human rights implications of the uneven distribution of new technologies around the world, which can further the divide between the rich and the poor. Highly developed countries often reap the benefits of these advancements, while others are left behind.



Professor Soh acknowledged that practical problems stand in the way of implementing social, economic, and cultural rights. The right to science and its applications is an important way to help address the apparent dichotomy between universal values and lived realities. At the same time, Professor Soh underscored that we cannot ignore the fact that some aspects of technological advances also threaten human rights in profound ways. Major technologies and big data are often created for commercial application and can have unintended consequences. Moreover, we have entered into a world of "fake news" and neural marketing designed to alter our emotional agency and self-

determination. This manipulation threatens our mental integrity, autonomy, and individual agency, as well as our ability to make rational choices. He also noted that structural inequalities negatively impact scientific progress, such as the global underrepresentation of women in STEM that leads to research that often overlooks impacts on women. Moreover, when brilliant minds are not allowed to flourish, many potential innovations are lost.

Professor Soh argued that we need improved education and new partnerships between engineers, scientists and, human rights scholars to ensure that the right to science is applied equitably and responsibly so as not to infringe other human rights. Scientists should be trained in human rights principles and work to ensure that their technologies are of benefit to human life and consistent with human rights. Furthermore, we need a healthy and independent NGO ecosystem that will enhance the transparency and accountability of these technologies. The human rights community needs to cultivate its own scientific experts and technologies, like the open source movement.

Professor Soh asserted that the right to science has been neglected, and he called for greater awareness raising on the mutually beneficial and interconnected relationship between human rights and science. Without the freedom to openly debate and discuss new ideas, it would not be possible to create scientific advancements and innovations. Professor Soh stressed that scientific progress is an enabler of human rights protections and advancement and cited examples such as improvements in medicine and hygiene and greater access to clean water as having saved more lives than traditional human rights advocacy. Information and Communication Technologies (ICT) too have supported efforts to protect and promote human rights; satellite imagery has helped to identify and document crimes against humanity, while smart phone applications have been used to alert people to human rights violations. As human rights defenders, Professor Soh concluded, we must adapt to these new tools as quickly as possible.

Is There a Human Right to Development?

Nico Schrijver, member of the Royal Netherlands Academy of Arts and Sciences and Professor of Public International Law at Leiden University, addressed the question of whether there is a human right to development. He expressed the view that there is such a right but acknowledged that this is a contentious issue within international relations and pointed to the tendency of some Western nations to argue that the right does not exist or is non-enforceable. Professor Schrijver argued that the right to development is based in international law, including the UN Charter, the UN Declaration of Human Rights (UDHR), and the Human Rights Covenants. He pointed, e.g., to provisions of the UDHR concerning the right to food, an adequate standard of living, and the right to a social and international order in which all rights can be fully realized. The principles of non-discrimination and the right to science, and to the enjoyment of its benefits, can also be seen as related to the right to development. A number of key documents have followed this course. Article 22 of the African Charter on Human and Peoples' Rights (1981) outlines the right to economic, social, and cultural development; the UN General Assembly adopted a Declaration on the Right to Development (1986); and the Vienna Declaration and Programme of Action notes that the World Conference on Human Rights (1993) reaffirms the right to development, as well as the principle of universality in applying this right. Other notable documents that reaffirm this right include the Millennium Declaration and the World Summit Outcome Document, adopted on the occasion of the 60th anniversary of the UN in 2005. Professor Schrijver emphasized that development is not just about economic development; the preamble of the Declaration on the Right to Development notes that:

...development is a comprehensive economic, social, cultural and political process, which aims at the constant improvement of the well-being of the entire population and of all individuals on the basis of their active, free and meaningful participation in development and in the fair distribution of benefits resulting therefrom...

According to Professor Schrijver, to see the full realization of universal human rights we must equally address economic, social, and cultural rights in addition to civil and political rights, as all rights are inter-related and inter-dependent. The right to development is not, however, a steady track. We must define who are the right bearers (e.g., individual persons, peoples, States?), who are the duty bearers (e.g., all states, developed states, the international community?), and with what mechanisms do we implement this right (e.g., national, regional and/or international mechanisms, supervision by a treaty body?). Defining the role of the business sector in this context is an important task. Professor Schrijver stressed that a comprehensive approach is needed, although difficult to enforce. He added that the obligation of states is to take all appropriate steps within their means towards the fulfilment of these rights. Professor Schrijver outlined the pros and cons of developing a new convention on the right to development. On the one hand, many developing countries have advocated for such a convention, and it would provide a means for seeking justice when this right is violated. Furthermore, other thematic human rights treaties exist, so a dedicated convention is not without precedent.

On the other hand, Professor Schrijver conceded that such a convention would be difficult to attract widespread ratifications, particularly since the right to development is broad ranging and is rejected by many Western nations as a legitimate right.

Professor Schrijver also addressed science as it relates to the right to development. Article 15 of the UN Covenant on Economic, Social and, Cultural Rights outlines the right to enjoy the benefits of scientific progress and its application. Here too, states that have ratified the Covenant are obligated to “respect the freedom indispensable for scientific research and creative activity”. This is essential to safeguarding academic freedom, without which scientific progress, and its benefits, would not be able to flourish.

In conclusion, Professor Schrijver offered his personal advice to forgo calling for a new declaration or convention on the right to development. Such an exercise may result in a weaker protection of the right to development than currently exists in existing documents. However, these documents also suffer from inadequate implementation. Guidelines for implementation have not been realized; the Intergovernmental Working Group on the Right to Development no longer meets because it cannot agree on an agenda. Developing other ways of implementing rights outlined in the existing body of human rights law that relate to the right to development is essential. Linking up to the work of the current human rights treaty bodies as well as the SDGs could be a promising avenue for consolidating, mainstreaming, and ultimately realizing the right to development.

Panel Discussion I: Human Rights and the SDGs

The first panel discussion of the symposium addressed human rights and the sustainable development goals (SDGs). Panelists included **Heisoo Shin**, a visiting professor at Ewha Womans University, President of the Korean Center for United Nations Human Rights Policy, and member of the UN Committee on Economic, Social and Cultural Rights; **Keith Hiatt**, of the UN’s International, Impartial, and Independent Mechanism for Syria; and **Joo Young Lee**, Expert Advisor at the Human Rights Centre of Seoul National University. Professor Shin, as Chair of the panel, explained that nine functioning international human rights treaties deal with the intersection of economic, social, and cultural rights and civil and political rights, with varying levels of ratification. She added that the 17 sustainable development goals are based primarily on human rights and have been expanded from the Millennium Development Goals, which did not have clear targets.



Dr. Lee focused on goal 3 of the SDGs – *ensure healthy lives and promote well-being for all at all ages* – and its linkages to the right to health under international human rights law. This goal builds on previous millennium development goals related to health and includes nine targets. Dr. Lee explained that while we currently live in a world with vast resources and longer overall life expectancy, we still see many women die in the process of giving birth and the preventable deaths of infants, as well as premature deaths linked to communicable diseases. We still have a long way to go to address these and other areas of physical and mental health that need our attention. She believes many of the targets for this goal are cross-cutting, for example, the attainment of target eight - *achieving universal health coverage* – is crucial for the attainment of other targets such as *reducing maternal mortality (target 1)*, *ending preventable deaths of infants (target 2)*, *ending communicable diseases (target 3)* and *reducing non-communicable diseases (target 4)*. Dr. Lee pointed out that Article 12 of the International Covenant on Economic, Social, and Cultural Rights recognizes the right to health and identifies the steps to be taken by State Parties to achieve the full realization of this right. These include the provision of health care services that must be 1) available in adequate numbers, 2) accessible (including economically and on the basis of non-discrimination), 3) culturally observant, and 4) scientifically proven and acceptable. Dr. Lee clarified that, whereas States are legally obliged to promote and protect human rights, development goals are political commitments made by States. She stressed that we need to press for States to be legally obliged to implement the right to health. It is therefore important to make linkages between SDG 3 and the right to health so that we can use human rights implementation mechanisms to make States accountable for their commitment to the SDGs.

Keith Hiatt raised the question of how scientists can address poverty through the lens of human rights. Poverty, he stated, is not difficult to solve; the challenge relates to lack of will. Mr. Hiatt argued that this is where human rights come in, as an instrument to address abuses of power and power imbalances. If the dominant culture benefits you it is unlikely that you will feel the need to turn to human rights because you already have a number of other mechanisms to draw on to enhance your well-being. This, he argues, is also why SDG 16 is important; peace, justice, and strong institutions are necessary to help those without access to other mechanisms confront powers that prevent the realization of rights. In all of these areas, technological development has the potential to strengthen, weaken, or replace these institutions. For example, the rise of decentralized networks, sensors, and data has the potential to strengthen global accountability efforts. There are many civil society organizations doing really creative things on this front, such as organizations that provide inexpensive tools to gather data on things like water quality and pollution that can provide the evidence required to push for change and respect for human rights. However, he cautioned that some of these same decentralized networks have the potential to weaken social cohesion and rights-based movements.

Mr. Hiatt also raised concerns regarding the potential negative implications of certain SDG-related targets/actions for human rights. One of the targets of SDG 16 is to provide legal identity for all, including birth registration. Many technological advancements and software have been or are being developed to help individuals prove their identity. Both private companies and state-run institutions are stepping up to implement this technology, but very compelling human rights arguments exist for not wanting state management of identity. When individuals can no longer manage their own legal identity, this could play into the problem of power and its unequal distribution. Parallel technologies are needed to secure your identity and to protect you and it from negative forces/actors who would abuse this knowledge. Mr. Hiatt urged participants to think about how the work they do may or may not facilitate the unequal distribution of power.

Symposium participants queried the panelists on how to improve equal access to technologies such as mobile phones and the internet. The panelists stressed the importance of thinking about who is providing access to these technologies and how. Some governments, for example, abuse the internet to amplify surveillance efforts and to crack down on citizens. We need to think beyond access to the internet and ensure uninhibited

access to beneficial goods and services that can be found through the internet. Participants also questioned how we can ensure that rights-abusing governments implement the SDGs in a sincere manner and prevent government rhetoric suggesting that protecting the human rights of certain groups somehow lessens the rights of others. The claim to rights, Mr. Hiatt replied, is usually made when the majority is oppressing a minority. When we talk about rights we need to know that we are taking on those in power. He argued that we have to figure out better ways to communicate what the SDGs are and their relationship to human rights. The facts are on our side as scientists, but they do not speak for themselves. For instance, Mr. Hiatt stressed the importance of the scientific community speaking out and educating others not only on the science of climate change, but also on how the consequences of climate change perpetuate inequalities.

Confronting Poverty and Reducing Inequality (SDG 1)

The afternoon session of the symposium began with a presentation on SDG 1 – *confronting poverty and reducing inequality* – by **Xigen Wang**, the Executive Director of Wuhan University’s Human Rights Institute. Professor Wang argued that freedom from poverty is the first among the SDGs because poverty eradication is the primary mission of development. He laid out the primary targets of SDG 1, including:

- eradicating extreme poverty;
- implementing social protection measures;
- ensuring equal access to economic resources;
- building resilience of the poor; and
- reducing their exposure and vulnerability to shocks and disasters

These are ambitious targets made more challenging by the sheer number of extremely poor people around the world, measuring around 700 million of the world’s 7.6 billion population (according to the 2017 World Population Prospects by the United Nations Population Division). Professor Wang noted that multiple international human rights instruments (i.e., the UDHR, ICESCR, CRPD, CRC, and CEDAW) view freedom



from poverty as a human right, specifically the right to an adequate standard of living and the right to social security. The theoretical foundation of being free from poverty has five human rights components: interests, justice, freedom, personal dignity, and demand. Interests relate to sharing the fruits of economic development to eradicate poverty. Justice pertains to the balance between development and ecological protections, and includes providing compensation to the poor who are adversely affected by environmental protections. Freedom refers to the free flow of populations, goods and information, as well as the enjoyment of personal and economic freedom. Personal dignity is the core of human rights; eradicating poverty is a process in which human dignity is constantly respected. Finally, demand refers to the availability of legal remedies to obtain freedom from poverty.

Framing poverty reduction as a human right helps to empower the poor to seek remedies and demand justice when actors and institutions develop or enable systems that perpetuate poverty. Professor Wang argued that to achieve the right to be free from poverty, poverty reduction must be integrated into development programs and strategies and be made a top priority in governance. International development cooperation among nation states, regional organizations, and members of international civil society must also be strengthened, along with the inclusion of poverty reduction-related provisions in international legal documents and global knowledge sharing platforms. At the same time,

policy frameworks at the national level should provide for such provisions, as well as accountability for victims of corruption and other abuses of power that perpetuate poverty.

Panel Discussion II: Human Rights and the SDGs

The second panel of the day, chaired by Professor Schrijver, addressed the human rights aspect of SDG 13 – *taking urgent action to combat climate change and its impacts*. The other panelists included **Sun-Jin Yun**, Professor of Environmental and Energy Policy at the Graduate School of Environmental Studies, Seoul National University; **James Phiri**, Executive Secretary of the Zambia Academy of Sciences and a PhD Researcher at the University of Zambia; and **Jolene Lin**, Director of the Asia Pacific Centre for Environmental Law at the National University of Singapore.

Dr. Yun provided a broad overview of the scientific evidence for rapid climate change. She also outlined efforts by the international community to address climate change, including the UN Framework Convention on Climate Change (UNFCCC). Adopted in 1992, the UNFCCC was signed by 154 nations. Upon ratification, parties commit to substantially reduce their greenhouse gas emissions. Parties to the UNFCCC have since met at conferences to discuss how to achieve the treaty's aims, which led to the Kyoto Protocol that sets emissions targets for developed countries that are binding under international law. In 2015, parties to the convention came together for the UN Climate Change Conference in Paris and adopted the Paris Agreement, aimed at limiting global warming to less than two degrees Celsius. Dr. Yun stressed that the impact of climate change is not the same for all global actors. The biggest per capita emitters (the United States is the number one emitter per capita) are the least impacted. Those most impacted are the least able to contend with climate change disasters. Climate change is a major factor in mass displacement, particularly as it relates to environmental disasters, and can be directly linked to adverse affects to ecosystems and natural resources, physical infrastructure and human settlements, livelihoods, health, and security. Threats to these important elements of survival, security, and peace impact the realization of human rights. Governments have procedural obligations (e.g., to ensure public participation in environmental decision making) and substantive obligations (e.g., safeguarding human rights in migration and adaptation activities) to address the human rights implications of climate change. Dr. Yun argued for a shift in the mindset of developed nation-states; they need to take more responsible actions as a way of exercising accountability and not view development assistance as an act of charity. Businesses too must practice corporate social responsibility and acknowledge their role and obligations in addressing climate change.

Next, Dr. Lin described her work in climate change law and policy. One of her key mandates is to build capacity for implementation of the Paris Agreement. She strives for special consideration to be given to how climate change impacts gender equality and human rights. Research shows that climate change impacts women more than men. According to UN figures, 80% of people displaced by climate change are women, and other studies have shown that women, boys, and girls are 14 times more likely than men to die during a disaster. Women make up the majority of the world's poor and, in many societies, are responsible for securing water, food, and fuel. Therefore, when natural resources are threatened by climate change, women face added challenges. Social and political barriers also limit their coping capacity. For example, women are more likely to suffer diseases than men, but are less likely to receive treatment because they are often seen as less valuable. These and other factors also adversely impact their physical and emotional well-being. Women are, however, an important part of the solution. As early adopters of new agricultural techniques, first responders in times of crisis, and entrepreneurs of green energy, women offer valuable insights into how we can manage climate risks and foster climate resilience.

Mr. Phiri focused his talk on the effectiveness of mechanisms to implement SDG 13. He too stressed that the impacts of climate change are felt disproportionately around the world. Ironically, the countries that have contributed the least to greenhouse gas emissions are those that are most vulnerable to the consequences of climate change. Moreover, they have the fewest coping mechanisms. Yet, climate change agreements put responsibilities on all nations to take urgent measures to combat climate change. Among the most vulnerable economic and social sectors in developing countries are agriculture, water, health, sanitation, and infrastructure. Many developing countries' economies are based on agriculture that employs much of their workforce. Environmental degradation destroys ecosystems that support coping mechanisms and exacerbates the stunting of children due to poor nutrition and environmental conditions in these areas. Child education and development is also adversely affected. Heavy rainfalls and floods can damage schools and wash away bridges or flood streams, thereby preventing children from attending school. Damaged schools may take years to repair. In times of drought, hungry children may stay away from school or may be unable to concentrate on their schoolwork. This too can adversely affect their livelihoods down the road. Water scarcity and poor sanitation can also lead to the re-emergence of communicable diseases. Mr. Phiri argued that existing financial mechanisms to cope with climate change are inefficient and cannot meet the needs of most developing countries, especially in Africa.



He further argued that, in order to effectively and meaningfully deliver on SDG 13, a change in the architecture of existing financial mechanisms under the UNFCCC is required. He observed that existing financial mechanisms are designed to favor measures relating to mitigation and insufficiently address the needs of the most vulnerable. Unfortunately, most developing countries do not have sufficient scientific skills and knowledge to negotiate relevant operative articles on equitable mechanisms, nor do they have the capacity and scientific research programs necessary to generate local/national data to use when negotiating these agreements. Mr. Phiri put forth several recommendations to address this problem, emphasizing the need for governments to design more balanced and user-friendly measures and financial mechanisms that respond to the needs of the most vulnerable. He also called for greater support for capacity building measures, including education infrastructure and country-level scientific research.

[Accountability for Climate Change-Related Rights Violations](#)

The final session of the day featured **Gwendolyn Pimentel-Gana**, a Commissioner of the Philippine Commission on Human Rights. Created under the 1987 Philippine Constitution, the Commission on Human Rights (CHR) is an independent National Human Rights Institution (NHRI) that investigates, monitors, renders legal measures, conducts research, and proposes policy recommendations to the government. While not a quasi-judicial body, communities often request the CHR's assistance as a fact-finding body when the primary agencies of government are seen as not properly performing their functions. The CHR primarily offers its investigation and monitoring processes to communities that need to properly understand the factual circumstances of their cases.

Commissioner Pimentel-Gana gave an overview of her Commission's efforts to provide accountability for climate change-related rights violations. The right to a balanced and healthful ecology, Commissioner Pimentel-Gana noted, is explicitly protected by the 1987 Constitution of the Republic of the Philippines. In the landmark case of *Oposa v. Factoran*, which has been cited by various courts worldwide, the Philippine Supreme Court held that the right to a balanced and healthful ecology is just as important as any of the civil and political rights enumerated in the Bill of Rights. This right carries with it the correlative duty to refrain from impairing the environment. Commissioner Pimentel-Gana argued that, by including it in the

Constitution, the framers must have feared that the day would come when generations will inherit nothing but parched earth incapable of sustaining life. The discourse on the link between human rights and the environment continues to evolve and provides clearer references for more concrete and rights-based programs and state policies. Understanding human rights in the context of environmental protection and conservation requires that we restate the obvious: a healthy environment is necessary for the full enjoyment of human rights, and the exercise of human rights is critical for the protection of a healthy environment.

In March 2012, the UN Human Rights Council established a mandate on human rights and the environment, which will study the human rights obligations relating to the enjoyment of a safe, clean, healthy, and sustainable environment, and promote best practices relating to the use of human rights in environmental policy-making. As the first Special Rapporteur on human rights and the environment (from 2015 to 2018), John Knox restated a set of framework principles on this theme. The principles do not create new legal obligations. Rather, they reflect the application of existing human rights obligations in the environmental context and emphasize that decision-making related to the environment should include all stakeholders without discrimination. Mr. Knox emphasized that certain areas require further elaboration, including clarifying how human rights norms relating to the environment apply to issues of gender and other types of discrimination, the responsibilities of businesses in relation to human rights and the environment, the effects of armed conflict on human rights and the environment, and obligations of international cooperation in relation to multinational corporations and transboundary harm.

In September 2015, a petition was filed by typhoon victims, human rights groups, and concerned citizens before the CHR, requesting an investigation concerning responsibility of the so-called private “Carbon Majors” for allegedly contributing to climate change and impacting the human rights of the Filipino people. The petition seeks to establish how climate change is related to the increasing frequency and severity of natural disasters and how human rights are affected by it. It also seeks to promote the notion that businesses have an obligation to respect human rights, as envisaged under the UN Guiding Principles on Business and Human Rights. The Commission, in response, has launched the “National Inquiry on the Impact of Climate Change on the Human Rights of the Filipino People” to improve and develop measures to further protect and promote human rights. The method of inquiry is dialogic, rather than adversarial, without sacrificing due process of law. A report will be released in the latter part of 2019.

Commissioner Pimentel-Gana clarified that accountability for climate change-related rights violations stems from intergenerational responsibility, which is the responsibility of every generation to preserve the rights of future generations – including their right to the enjoyment of a balanced and healthful ecology – and to hold responsible those violating the rights of the next generation.

Closing remarks at the symposium were provided by **Yooshin Kim**, Chair of KAST’s Science and Human Rights Committee. After reiterating the importance of the themes addressed during the symposium, Professor Kim introduced a new draft declaration on human rights to be adopted by KAST. The aim of the draft declaration is to outline the social responsibility of scientists and engineers to promote and protect human rights, as well as to proclaim the importance of human rights in preserving scientific research and progress. The authors of the declaration invited meeting participants to review and offer their comments on the text.



STUDENT SESSION

On the morning of October 27, local students were invited to a half-day session on the topic of science, health, and human rights, with presentations by several H.R. Network meeting participants. Welcoming remarks were provided by **Ook Joon Yoo**, Executive Vice-President of KAST.

The Importance of Academic Freedom and Scientific Independence



Bruce Alberts, the Chancellor's Leadership Chair in Biochemistry and Biophysics for Science and Education at the University of California, San Francisco, provided a brief background on the origins of the concept of academic freedom and its relation to the critical need to protect scientific inquiry. Finding an important unsolved problem, Dr. Alberts stressed, and then designing a clever strategy to solve it, is everything in science. Today, science is moving faster and faster, because it always builds on the work of others, extending what we know through utilizing powerful new combinations of knowledge. As scientific knowledge

increases, it makes many more combinations possible, although great creativity is needed from scientists for science to advance at a rapid rate. At the same time, a worrisome trend has arisen in which many governments around the world act to suppress or distort scientific findings for political purposes, such as the removal of climate change data from government websites under the current U.S. administration and the prosecution of Chinese scientists in China on spurious charges of revealing state secrets for publishing their data on soil contamination. Such efforts are detrimental to human progress. The ability to freely conduct scientific research and to collaborate with other scientists from anywhere around the world can make a major difference to both national and international development. Scientific advances, for example, have prevented starvation in rural farming communities in Kenya and India and also created many new small-scale economic opportunities in these communities. In closing, Dr. Alberts encouraged students to stand strong in the face of adversity, viewing their inevitable failures as important opportunities for learning how to do better next time. He also stressed the importance of scientific training for generating a lifelong demand for evidence, while always remaining open to important new ideas and opinions.

Finding the Connections: Science, Health and Human Rights

Édouard Brézin, Professor Emeritus of Physics at the École Normale Supérieure, served as moderator for the first panel and provided a brief history on the concept and evolution of human rights, including its proponents and those who have sought to denigrate human rights. He addressed modern day attacks on human rights from the extreme right of the political spectrum, dictatorships, and populist rulers of various kinds. These attacks range from the outright rejection of individual fundamental human rights to attacks on the legitimacy of certain rights – such as the rights to migration, free education, and health – to justify controversial policies. He emphasized the need of young people to be vigilant and stand up for all human rights, without which scientific progress would be impossible.



Echoing the sentiments of Professor Brézin, panelist **Elizabeth Rachlew**, Professor of Applied Atomic & Molecular Physics at the Royal Institute of Technology in Stockholm, stressed the importance of conducting open, honest, and collaborative research. Be willing to change your mind, she argued. For those whose efforts support the achievement of the sustainable development goals, Professor Rachlew highlighted the critical need to approach your work with equality as an intended outcome.

Siyavuya Bulani, Senior Liaison Officer at the Academy of Science of South Africa (ASSAf) noted that the end of the apartheid era led to the adoption of a progressive constitution in South Africa, as well as strong respect and appreciation for human rights and rule of law from South Africans. In this environment, the ASSAf was founded on the principal of unity, with a mission of using science for the benefit of society. His academy provides evidence-based commentary on critical issues pertaining to policy implementation. For example, at a time when there was wide-spread AIDs denialism in the country, ASSAf issued a study on HIV/AIDs, tuberculosis, and nutrition that advocated for an extensive national program of research in this multi-disciplinary area of focus. Other examples include a scientific study that demystified erroneous beliefs surrounding homosexuality; statements condemning xenophobic attacks in the country; and consensus studies on ethical, legal, and social issues related to human genetics and genomics in South Africa and on the root causes of under-immunization of the African child. The Academy has also used the Annual Young Scientist Conference to urge a transdisciplinary approach to addressing themes concerning human rights and corruption.



The next panelist, **Esther Mwaikambo**, Professor of Paediatrics and Child Health at the Hubert Kairuki Memorial University, addressed the relevance of human rights for health. She explained that everyone has the right to the highest attainable standard of physical and mental health, including access to all medical services, sanitation, adequate food, decent housing, healthy working conditions, and a clean environment. Health care must be provided as a public good for all, financed publicly and equitably. Dr. Mwaikambo has practiced medicine in Tanzania for more than 40 years and, as much as she concurs with the definition of the human right to health, she acknowledged that the reality of resource poor countries like Tanzania - where poverty and disease are rampant - severely challenges the ability of those countries to promote the right to health. While the demand on medical professionals to provide care in Tanzania is higher than the supply, Dr. Mwaikambo urged that

medical students should not deny health care to anyone for any reason. She also encouraged students to create awareness of the fact that health is a fundamental right. Scientists have a critical role to play in advising governments to develop vaccines and to promote healthy living to stem the rising prevalence of non-communicable diseases. Since good health is determined by many other basic human rights - including nutritious food, decent housing, clean drinking water, a clean environment, and good working conditions – scientists must also conduct vital research on ways in which their governments can improve living conditions.

The final panelist, **Pedro Leon Azofeifa**, biologist and President of the National Academy of Sciences of Costa Rica, addressed the growing threat to science by government repression. He provided the example of the recent persecution of medical doctors in Nicaragua, who were fined for treating wounded protestors. In exercising their duty to maintain medical neutrality, they were branded “enemies” of the Nicaraguan government. Scientists and medical professionals are united by the belief that science can lead to better health and the realization of human rights. He noted that scientific innovations can have unexpected consequences but argued that knowledge itself is not the problem. Discoveries should not be made available to the public unless it can be proven beyond a reasonable doubt that they are safe.

New Technologies and Human Rights

Martin Chalfie served as moderator for the final panel of the student session on the topic of new technologies and human rights. He noted that changes presented by new and inter-connecting technologies in today’s world necessitate a broader perspective on human rights. Panelists **Daniel Connolly** and **Seunghyun Nam**, Research Professors at the Graduate School of International Studies at Korea University, addressed human



rights in what they describe as the era of the fourth industrial revolution. They emphasized that our real-world and digital spaces have become deeply interdependent. Organizations and individuals that leverage this interdependence will be more competitive than those that do not. The impact of new technologies will be felt in warfare, commerce, and education, as well as in human rights advocacy. In the field of human rights, though, awareness of new technologies has been slower to take root, developing haphazardly in response to public

controversies, such as the sharing of personal information by technology companies and mass surveillance by intelligence agencies. There is an urgent need for human rights practitioners to take a hard look at the challenges ahead, as the private sector is already doing. We may see a reduction or mitigation of traditional threats to human rights while, at the same time, new categories of threats, especially to human agency and autonomy, may emerge. Traditional advocacy practices and concepts are going to be disrupted and the impact of this will be global in scope. The key question is: how do we as scientists study the human rights impacts of new technologies, particularly as they affect power and opportunity? The international human rights system is state-centric, but more businesses are becoming involved in human rights violations through new technologies. The UN Guiding Principles on Business and Human Rights are limited; the principles lack clarity, and new business models have been adopted since the development of these principles. Businesses are unsure of how to implement due diligence as it concerns human rights. Since the nature and form of human rights violations are changing, Professor Connolly stressed the importance of developing a new and more holistic human rights framework. For example, we need to re-conceptualize the right to privacy to encompass mental privacy, which is now at risk with technologies that can “hack” or manipulate our minds.

Professor Connolly and Professor Nam also highlighted new technologies that help promote human rights, such as advances in online education, mobile applications to record human rights abuses, the use of blockchain to protect refugees and migrants and to combat human trafficking, and the use of big data to provide early warnings for humanitarian and human rights crises.

The final panelist, **Keith Hiatt**, expanded on the topic of how new technologies are used to infringe on human rights. He argued that there is no such thing as a scientist who operates outside of the world. Innovations do not create themselves but are produced by fallible people. Technologies will invariably favor some people, while disfavoring others. For example, the iPhone, when initially released, was inaccessible to the blind. This is an easily foreseeable problem that was overlooked during its design. The application of science is a conscious choice. We need to rethink technological development from the design stage to incorporate human rights. Redesigning technologies that have been used to abuse human rights is far more costly and challenging.