

# **The Global Plant Council**

## **Convening Motion:**

That we as representatives of plant science societies of the world formally establish a Global Plant Council to discuss and collaborate on solutions to global issues that impact the future of our world and humanity.

## **Mission Statement**

In recognition of the central importance of plants to humanity and the world, plant science societies have come together to establish the Global Plant Council. The mission of the Council is to define and engage in coordinated strategies that impact the most critical issues facing humankind and to increase awareness of the central importance of plant science in solving these issues. Our shared vision and effort will enable more effective use of knowledge and resources, accelerating progress in solving the challenges of world hunger, energy, climate change, health and well-being, sustainability and environmental protection.

## **Tagline**

*Plant research to save the planet*

## **Statements of Purpose**

### **World Hunger**

Presently more than one billion people are going hungry (FAO), and the resulting malnutrition is contributing to disease and mortality. By 2050 we will need to produce at least twice as much food as we do today to meet the demands of the growing world population. At the same time, world commodity storage is at historically low levels (e.g., the world currently has less than a one-month supply of wheat), and usable land for agriculture is being lost to urbanization and soil degradation. The world relies on ten major crops to provide 95% of the food consumed by humans and domestic animals. Increasingly, climate change and water shortages are threatening the crops we are growing today.

Therefore, we must develop new crops and improve existing crops that have higher yields and tolerance to pest, pathogens, drought and other environmental stresses. Sustainable increases in yield must be achieved while using less water, fertilizer, and energy. At the same time we should work to remove barriers to distributing crop varieties.

### **Health and Well-being**

Human health is dependent upon a balanced diet in which plants have an essential role. However, the staple food crops, such as rice, are poor sources of essential nutrients such as vitamin A, C, E, iron, zinc. Currently, at least two billion people suffer from poor nutrition because their diet relies on single staple crops or a scarcity of food. Impacts include loss of eyesight, illness, increasing susceptibility to disease and dramatically increased child and adult mortality. For example, 500,000 children every year losing their eyesight from vitamin A deficiency, of which half die within a year.

Therefore, we must enhance the nutritional value of staple foods. We also need to develop other crops that can broaden our food base.

Certain foods derived from plants can result in allergenic reactions, such as gluten-intolerance and toxic effects due to inadequate storage of crops susceptible to disease.

Research is needed to develop crops that lack allergens and alleviate these problems.

Plants are a major source of bioactive compounds and pharmaceuticals. However, each species has its own unique set of such metabolites.

Therefore, we need to maintain and research natural ecosystems to preserve diversity. We need to invest in the discovery and development of new and existing bioactive compounds from different plants.

### **Climate change**

We are facing unprecedented climate change due to the buildup of carbon dioxide and other greenhouse gases. Through the process of photosynthesis, plants remove carbon dioxide from the atmosphere. There are a number of strategies that could be employed to increase the capacity of plants to absorb carbon dioxide and convert it to terrestrial and oceanic biomass, thus mitigating climate change.

Climate change will result in more extreme weather events and more stressful conditions for plant growth, particularly in areas that are already challenged for food production. Development of crop varieties that exhibit improved water use efficiency and other traits that allow stable performance over a range of environmental conditions is essential.

### **Energy**

Much of the increase in carbon dioxide in the atmosphere and resultant climate change is derived from the burning of fossil fuels, which are a limited and nonrenewable resource. Biomass can be used and further developed as one alternative energy source that does not increase greenhouse gas concentrations. Further advances would include development of dedicated bioenergy crops that exhibit improved nutrient and water use efficiencies, optimized plant architecture, and altered composition to facilitate conversion to biofuel. Plants and knowledge of their biochemical mechanisms offer many new opportunities for development of renewable energy sources that do not impact food production.

### **Sustainability and environmental protection**

It is clear that the use of our planet's natural resources for food, fiber, and energy production as currently practiced is not a sustainable enterprise on a global scale. Sustainable use of natural resources for the benefit of humankind must encompass environmental, economic and social sustainability. This will require the development of a combination of strategies and technologies for the responsible stewardship of land, water, and energy in such a way as to maintain or enhance the environment. This can only be achieved by the combined efforts of plant scientists with those from other disciplines in collaboration with policy makers and the public at large. We must address the key issues of the identification, use, protection and regeneration of biodiversity

in natural and managed environments. In addition we need to empower regional scientific communities that will develop region-specific approaches towards sustainability, and the sharing of expertise, technologies, and plant resources.

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## Plant Research to Save the Planet

Honolulu, HI, Saturday, July 18, 2009—A Global Plant Council has been formed as part of an historic and groundbreaking summit of major plant science societies from around the world. Twenty one scientists representing 13 plant science societies gathered in Honolulu July 15–16 at a summit organized by the American Society of Plant Biologists (ASPB) to explore ways in which plant scientists can come together to address global concerns such as world hunger, energy, climate change, health and well-being, sustainability, and environmental protection. The mission of the Global Plant Council will be to define and engage in coordinated strategies to address these critical issues and to increase awareness of the central role of plant science in their resolution. The shared vision and unified effort of plant scientists from all regions of the world will enable the most effective use of knowledge and resources to tackle the major challenges confronting all nations in the 21<sup>st</sup> century.

As stated by Dr. Kasem Zaki Ahmed, representing the African Crop Science Society, “The world relies on ten major crops to provide 95% of the food consumed by humans and farm animals. To address the problems facing Africa we must improve existing crops and develop new ones that have higher yields and greater resistance to pests, pathogens, drought, and other environmental stresses.”

Plant biology--and thus plant science research--is central to other global challenges as well. European scientist Dr. Wilhelm Gruissem (president of the European Plant Science Organisation) noted, “We must address the key issues of biodiversity in natural and managed environments”. Dr. Zhihong Xu, president of the Chinese Society of Plant Physiologists noted, “We need to increase the search for and investment in the discovery and development of new and existing bioactive compounds and medicines from a diversity of plant species.”

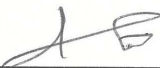
The newly formed Global Plant Council will move forward to create partnerships and collaborations that tackle and solve what we all recognize as critical and immediate problems for our planet.


“The Global Plant Council is the first step that plant scientists across the globe have taken to speak with one voice on the pressing challenges that face humankind,” said Mel Oliver, summit moderator.

ASPB was joined at the summit by scientists representing societies from North America, Europe, Asia, Africa, Australasia, and South America.

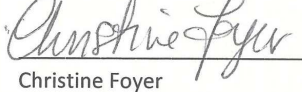
**Establishing the Global Plant Council**  
Honolulu, HI  
July 16, 2009


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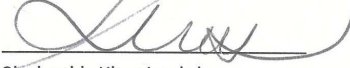
  
Kasem Zaki Ahmed  
(African Crop Science Society)

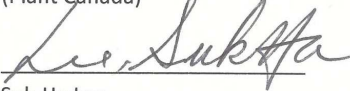
  
Sarah M. Assmann  
(American Society of Plant Biologists)


  
Carl Douglas  
(Canadian Society of Plant Physiologists)

  
Christine Foyer  
(Federation of European Societies of Plant Biology)

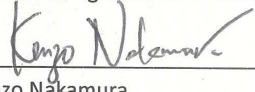
  
Wilhelm Gruissem  
(European Plant Science Organisation)


  
Shahrokh Khanizadeh  
(Plant Canada)

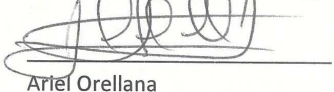
  
Suk-Ha Lee  
(International Crop Science Society)

  
Kenneth Moore  
(American Society of Agronomy)

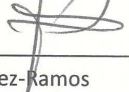
  
Eligio Morandi  
(Sociedad Argentina de Fisiologia Vegetal)

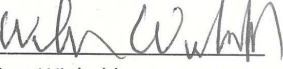
  
Kenzo Nakamura  
(Japanese Society of Plant Physiologists)

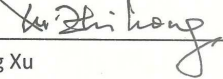
  
Tom Hamborg Nielsen  
(Scandinavian Plant Physiology Society)

  
Ariel Orellana  
(Chile's National Network of Plant Biologists)

  
Barry Pogson  
(Australian Society of Plant Scientists)

  
Jorge Vázquez-Ramos  
(Sociedad Mexicana De Bioquímica)

  
William Wiebold  
(Crop Science Society of America)

  
Zhihong Xu  
(Chinese Society for Plant Physiology)

