

## An invitation to the 16th international congress on photosynthesis research in 2013: opportunities and challenges in the 21st century

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**Abstract** The 16th International Congress on Photosynthesis will be held August 11–16, 2013 in St. Louis, Missouri, USA. The congress will include 15 plenary lectures, 21 scientific symposia, poster sessions, exhibitors, opening reception, final banquet, excursions and accompanying persons program. The congress is organized as an official event sponsored by the International Society of Photosynthesis Research.

The severity, rapidity and breadth of the onset of global environmental change represent one of the greatest potential dangers to society in our time. It presents an important and complex challenge to the scientific community and requires policy makers to face difficult decisions. One key challenge will be to confront the effects of climate change on photosynthesis and to study how organisms respond to these changes. The biological processes of photosynthesis and respiration dominate global carbon cycling but this

critical biology process is only minimally represented in first generation climate models.

As the world begins to look for solutions to the anthropogenic carbonization of the atmosphere and to feeding a planet inhabited by 10 billion people, it is increasingly clear that *photosynthesis research* must play a central role. The enhanced genetics traits that drove the *Green Revolution* of the past century are all but exhausted leaving improved photosynthesis efficiency as the only remaining yield component that has the capacity to drive the doubling of agricultural productivity that the Food and Agriculture Organization (FAO) of the United Nations (UN) has projected will be needed to meet increasing global demand during the next 50 years. At the same time the world is looking to photosynthesis in terms of biofuel crops and synthetic/biosynthetic photosynthetic systems to help curb the carbonization and thus warming of the atmosphere. Further, research is underway to mimic various aspects of photosynthesis by what is generally classified as ‘artificial photosynthesis’; it has its own challenges and future.

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The 16th International Congress on Photosynthesis, August 11–16, 2013, at the Hyatt Regency St. Louis at the Arch in Saint Louis, Missouri, USA, is taking place in the midst of this very important and urgent global issue that involves our science. During August 11–16, 2013, we hope to offer you a Congress that is a credible, visible and nucleating event for how our research community is contributing to opportunities and taking on the challenges of the 21st century—and we hope you all can join us.

For information on the 14th International Photosynthesis Congress on Photosynthesis, held in Glasgow, see Foyer (2006). For a view of the 15th International Congress on Photosynthesis, held in Beijing, see [http://english.ib.cas.cn/News/Events/201008/t20100827\\_58019.html](http://english.ib.cas.cn/News/Events/201008/t20100827_58019.html). For the current 16th International Congress on Photosynthesis, see our website at <http://ps16stlouis.wustl.edu/>.

This year's meeting is organized into three track topics with plenary talks and symposium topics built around those topics. The tracks include Photosynthesis: “Solar Energy Capture and Conversion”; “Environment, Adaptation and Climate Change”; and “BioEnergy and Food”. See <http://biology4.wustl.edu/ps2013/index.html>.

In addition to the scientific topics, we have included an excursion trip on Wednesday afternoon, August 14, 2013. Excursion choices include: Gateway to the West Riverboat Cruise; Fabulous Forest Park Shuttle; Cahokia Mounds Tour; and St. Louis Highlights Tour.

Figure 1 shows a photograph of the Gateway Arch that tells you that you are in Saint Louis. The Conference will be held in a really grand hotel Hyatt Regency St. Louis at the Arch (Fig. 2).

Speakers from around the world are expected to present their recent results and provide overviews. In addition, 42 student fellowships were granted to graduate students from several countries to attend the Congress which will enhance their knowledge as the next generation of scientists with our dynamic environment. Poster sessions are open to all attendees to view and visit with a true cross-section of scientific policy and findings. See <http://biology4.wustl.edu/ps2013/scipro.html> or <http://ps16stlouis.wustl.edu/scipro.html>.

There will be opportunities to visit our great city. We recommend the Botanical Garden; Forest Park; City Garden Sculpture Park, and certainly the old courthouse (see Figs. 3 and 4).

Of course, one cannot visit St. Louis without recognizing the amount of love given to the Saint Louis Cardinal baseball team (see Fig. 5). During the Congress, the team is in town so you may purchase tickets through this website [http://stlouis.cardinals.mlb.com/ticketing/index.jsp?c\\_id=stl](http://stlouis.cardinals.mlb.com/ticketing/index.jsp?c_id=stl). The Stadium is a three block walk from the Hyatt Regency at the



**Fig. 1** The Gateway Arch was built as a monument to Thomas Jefferson and all those pioneers for whom St. Louis was the Gateway to the West. It is 630 ft tall (192 m) and the span is 630 ft (192 m) at ground level between the outer sides of the legs. It was completed in October 1965. Photo by Dale Musick. Source <http://www.gatewayarch.com/experience/arch-facts-faq/>



**Fig. 2** The Hyatt Regency St. Louis at the Arch is the conference headquarters. Deluxe guest rooms, all scientific sessions, the Congress receptions and dinners will be held here. It is directly across from the St. Louis Arch. Photo by Dale Musick. Source <http://www.stlouisarch.hyatt.com/en/hotel/home.html>

Arch, the Congress hotel. We hope that you will also visit our Mississippi River (see Fig. 6).

The congress will include many commercial exhibits from leading vendors in the industry.





**Fig. 3** Experience a significant part of United States history during a visit to the Old Courthouse, the site where the famous Dred Scott case took place. In this courthouse in 1857 slaves sued for their freedom. This is a two-block walk from the Hyatt Hotel and Arch. Photo by Dale Musick. Source <http://www.gatewayarch.com/experience/old-courthouse/>



**Fig. 4** City Garden Sculpture Park is located only five blocks from the meeting conference center, the Hyatt Regency at the Arch. Built in 2009, it showcases 24 pieces of sculpture and is truly a magnificent park in the middle of downtown St. Louis. Photo by Dale Musick. Source <http://www.citygardenstl.org/>

This Congress is designed to engage you in scientific discussions, perhaps future collaborations, and presentations from around the world. We hope the scientific program with the outreach activities (both scientific and community tours) would allow you to truly enjoy the 16th Photosynthesis Congress. In the Appendix, we provide a list of our committee members. Without their help, we would not have had this conference.



**Fig. 5** A photograph of the Stadium. Photo by Dale Musick



**Fig. 6** A view of the Mississippi River from the Arch Grounds. Photo by Dale Musick

**Acknowledgments** This article was written on behalf of the *local arrangements and coordinating committee* (see Appendix for the complete list). We thank Dale Musick for providing us the photographs used in this *Announcement*. We are thankful to all the members of our local committee, especially Ursula Goodenough for her support. We are highly indebted to Don Ort and his program committee for the excellent program they have brought before us.

## Appendix

### Congress co-chairs

Robert E. Blankenship (Washington University in Saint Louis) and Donald R. Ort (University of Illinois, Urbana-Champaign & USDA/ARS).

### Program committee

Donald Ort (chair; University of Illinois—Urbana-Champaign & USDA/ARS), Lisa Ainsworth (University of Illinois—Urbana-Champaign), Carl Bernacchi (University of Illinois—Urbana-Champaign), Thomas Brutnell (Donald Danforth Plant Science Center), Evan De Lucia (University of Illinois—Urbana-Champaign), Andrew Leakey (University of Illinois—Urbana-Champaign), Stephen Long

(University of Illinois—Urbana-Champaign), Himadri Pakrasi (Washington University in Saint Louis), Klaus Schulten (University of Illinois—Urbana-Champaign), Michael Wasielewski (Northwestern University, Evanston), and Colin Wraight (University of Illinois—Urbana-Champaign).

#### Local arrangements and coordinating committee

Robert Blankenship (chair; Washington University in St. Louis), Jason Cooley (University of Missouri, Columbia), Susan Dutcher (Washington University School of Medicine), Ursula Goodenough (Washington University in St. Louis), Govindjee (University of Illinois—Urbana-

Champaign), Chad Henry (Washington University in St. Louis), Susan Martino-Catt (Monsanto Corporation), Kaslina Love-Mosely (Washington University in St. Louis), Elizabeth Dorland (Washington University in St. Louis), Erin Plut (Washington University in St. Louis), and Judy Musick (Washington University in St. Louis).

#### Reference

- Foyer CH (2006) Photosynthesis coming of age to meet the needs of the 21st century: an invitation to the 14th international congress on photosynthesis research in 2007. *Photosynth Res* 89:3–6