**Charles Pignon**

1206 West Gregory Dr., Urbana, IL 61801 ● (217) 417-1328 ● pignon2@illinois.edu

# SUMMARY

## Years of experience in independent, collaborative and cross-disciplinary research

## Strong leadership, coaching, and teamwork skills

## Able to adapt various technologies to perform innovative research

## Effective communicator, fluent in English, French and Spanish

# EDUCATION

## PhD candidate in Crop Sciences, Long lab

### UNIVERSITY OF ILLINOIS Urbana-Champaign December 2017

## M.S. in Crop Sciences, Long lab

### UNIVERSITY OF ILLINOIS Urbana-Champaign May 2013

## Engineer in Agricultural Sciences

### ECOLE D’INGENIEURS DE PURPAN Toulouse, France May 2013

## B.S. in Agricultural Sciences

### ECOLE D’INGENIEURS DE PURPAN Toulouse, France May 2011

# RESEARCH AND WORK EXPERIENCE

#### Postdoctoral Research Associate, University of Illinois 2018-present

## Managing field water-use efficiency trials of sorghum

## Collaborating with modeling and microscopy experts to expand scope of plant physiology measurements and achieve broadly relevant results

#### Graduate Research Assistant, University of Illinois 2011-2013; 2014-2017

## Discovered inefficiencies in shaded C4 leaves which cause a 10% loss in crop photosynthesis

## Demonstrated that chloroplast volume does not restrict low-temperature C4 photosynthesis

## Identified *Miscanthus* germplasm with potential for breeding chilling-tolerant biomass crops

## Identified opportunities to improve water-use in C4 crops under elevated [CO2]

## Established high-throughput infrared imaging screen to identify genetic variation associated with accelerated stomatal movement in sorghum

## Using Golden Gate assembly, designed transgenic sorghum for reduced stomatal density

## Experienced in plant phenotyping & biochemistry, ecophysiology, microscopy, molecular biology & marker analysis, SAS & R programming, experimental design

#### Graduate Teaching Assistant, University of Illinois January-May 2016

* Coached students to design websites discussing global crop networks. Students acquired basic website design skills and in-depth knowledge of their chosen crop
* Lectured on the worldwide significance of rice to a 200-student class

#### Intern, IFREMER marine resources laboratory, France June-August 2010

* Developed a report of the environmental impacts of offshore wind farms on fish populations
* Contributed to the construction of the first offshore wind farm in France

#### Intern, INTA agricultural laboratory, Argentina July-October 2009

* Assisted laboratory technicians and PhD students in their soil fertility analyses
* Reported on agriculture in the Buenos Aires province of Argentina

**Intern, mixed-production farm, France** June-October 2008

* Managed farm practices, including birthing, feeding and milking calves, preparing and maintaining a chicken coop, and irrigating and harvesting crops

# LEADERSHIP EXPERIENCE

**Chair of Student Sustainability Committee water working group** 2015-2016

* Managed $1.1 million in yearly funding, allocated to selected campus sustainability projects
* Chaired a team in one of the largest student-led sustainability programs in the US

**Graduate student networking and event organizer** 2015-2017

* Core member of UIUC Pioneer Symposium planning committee
* Organized graduate student facility tour and networking events at Monsanto headquarters and Danforth Plant Science Center

#### President of HODACE student fair-trade organization 2008-2009

## Organized outreach events, such as concerts and fair-trade product sales

## Raised and managed funds to support students pursuing development internships

# SCIENCE ADVOCACY

#### Volunteer for World of Genomics, Chicago Field Museum 2017

* Promoted the benefits of agricultural science and genetic engineering to a wide audience

#### Volunteer for Plants iView, Jefferson Middle School 2016

* Designed experiment for students to grow and phenotype Arabidopsis plants using Raspberry Pi computers and cameras
* Presented an interactive lecture on photosynthesis to several classes

#### Volunteer for Genome Day, Orpheum Children’s Science Museum 2015

* Managed a booth displaying advanced microscopy images to engage children in science

# AWARDS AND HONORS

* Winner of the 16th international congress of photosynthesis poster contest
* Press release of research results circulated on numerous websites (sciencedaily.com, phys.org, etc.)
* Presented research in:
  + The 2017 Gordon Research Conference for CO2 Assimilation in Plants from Genome to Biome in Barga, Italy
  + The 2016 UIUC Pioneer Symposium
  + The 2016 C4 Photosynthesis Congress in Canberra, Australia
  + The 2013 16th International Congress of Photosynthesis
  + The 2013 International Symposium on C4 and CAM Plant Biology
  + The 2013 American Society of Plant Biologists (ASPB) Midwest section meeting
  + The 2013 Energy Biosciences Institute (EBI) retreat

# PUBLICATIONS

**Pignon, C.P.**, Jaiswal, D., McGrath, J.M. and Long, S.P., 2017. Loss of photosynthetic efficiency in the shade. An Achilles heel for the dense modern stands of our most productive C4 crops?. *Journal of experimental botany*, *68*(2), p.335.

**Pignon, C.P.**, 2010. Effet des champs électromagnétiques émis par un câble d’éolienne offshore et des bruits et vibrations dus au fonctionnement d’éoliennes offshore sur les poissons : résumé des expériences. *IFREMER*, Document n°14202.

**Pignon, C.P.**, Sacks, E. Jørgensen, U. and Long, S.P., 2017. Siberian *Miscanthus sacchariflorus* surpass the chilling tolerance of *Miscanthus* x *giganteus*. *In preparation*

**Pignon, C.P.**, Lundgren, M. R., Osborne, C. P., and Long, S.P., 2017. Bundle sheath chloroplast volume does not restrict photosynthesis during chilling across four diverse C4 species. *In preparation*

**Pignon, C.P.**, Srinivasan, V., Leakey, A., and Long, S.P., 2017. A widening gap between achieved and optimal photosynthesis: C4 plants are still adapted to pre-industrial atmospheric [CO2].  *In preparation*

**Pignon, C.P.**, Bonfim, S., Bandillo, N., Leakey, A., Brown, P., Buckler, E., Gore, M., and Long, S.P. Genome-wide association study of dynamic stomatal conductance traits in the model species, sorghum. *In preparation*

**Pignon, C.P.**, Leakey, A., Brown, P., and Long, S.P. Photosynthesis and stomatal conductance under fluctuating light show potential for the improvement of water-use efficiency in sorghum. *In preparation*

Srinivasan, V., **Pignon, C.P.**, Long, S.P., Leakey, A., 2017. Trade-offs in decreasing stomatal conductance in C4 plants: 4% loss in photosynthesis for a 40% saving in water use. *In preparation*