

## IPNI Scholar Award Recipients - 2018

IPNI has selected the winners of its annual Scholar Award Program. In 2018, 31 graduate students representing 11 countries, were chosen. Each winner receives the equivalent of US\$2,000.

“Every year we assemble a very impressive group of scholars from across the globe,” said Dr. Terry L. Roberts, IPNI President. “Each individual selected should be very proud of this accomplishment. They are already contributing greatly to the field of plant nutrition,” added Roberts.

Graduate students attending a degree-granting institution located in any country within an IPNI Program are eligible. The award is available to graduate students in science programs relevant to plant nutrition science and the management of crop nutrients including: agronomy, horticulture, ecology, soil fertility, soil chemistry, crop physiology, environmental science, and others.

Regional committees of IPNI scientific staff select the recipients of the IPNI Scholar Award. The awards are presented directly to the students at a preferred location and no specific duties are required of them.

The winners are listed below with their university/institution affiliations and are organized by IPNI Program. **BC**

### NORTH & WEST AFRICA



**Ms. Boughanem**  
Algeria



**Mr. Agbodan**  
Togo

**Ms. Wassila Boughanem, Djilali Bounaama University, Khemiss Meliana, Algeria,** is earning her Ph.D. in crop improvement. Her dissertation title is “*Improving nutrients use efficiency for pulses in symbiotic associations with rhizospheric microorganisms.*” Ms. Boughanem’s goal is to complete her Ph.D. and then join her university as a scientist/professor to continue to improve her knowledge and skills in the agricultural field.

**Mr. Kodjovi Mawuégnigan Léonard Agbodan, University of Lomé, Lomé, Togo,** is working towards his Ph.D. in plant conservation biology. His dissertation title is “*Characterization of soil fertility by bio-indicator plants in southern Togo.*” Mr. Agbodan’s research will enable farmers to identify through bio-indicator plants the initial fertility of the soil, which will help guide their choice of fertilizer to assist in boosting food production. After his Ph.D., he would like to pursue post-doctoral research in agronomy with the aim of identifying the fertilizer doses to be applied to each type of soil and crops.

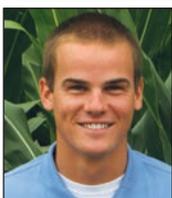
### EAST & SOUTHERN AFRICA

**Ms. Moreblessing Chimweta, Bindura University of Science Education, Bindura, Zimbabwe,** is earning her Ph.D. in flood-recession cropping. Her dissertation title is “*Optimizing maize yield under flood-recession cropping in the Zambezi valley floodplains, northern Zimbabwe.*” One of her research objectives is to study plant available nitrogen dynamics during the flood-recession cropping season. Following her Ph.D., Ms. Chimweta looks forward to being a renowned scientist in sustainable agriculture for ensured prolonged food security.



**Ms. Chimweta**  
Zimbabwe

### NORTH AMERICA



**Mr. Bernhard**  
United States



**Ms. Croat**  
United States



**Ms. de Oliveira Silva**  
United States



**Ms. Olmedo Pico**  
United States



**Mr. Ortez**  
United States

**Mr. Brad Bernhard, University of Illinois at Urbana-Champaign, United States,** is working towards his Ph.D. in crop sciences. His dissertation title is “*Nitrogen and phosphorus management to increase nutrient use efficiency and corn grain yield.*” Mr. Bernhard’s work focuses on nitrogen and phosphorus management in corn (maize) using the best

management practices approach to obtain the greatest yields. Following his Ph.D., he wants to pursue and promote the best

## NORTH AMERICA continued

management practices to producers, equipment manufacturers, and fertilizer companies so they can persist in their quest to feed the world sustainably.

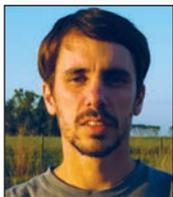
**Ms. Samantha Croat, North Dakota State University, United States**, is earning her M.Sc. in soil science. Her thesis title is *“Phosphorus dynamics and crop productivity in Bakken crude-oil remediated soils.”* Ms. Croat’s research centers around phosphorus behavior in soils treated by the remediation method known as thermal desorption. Following her M.Sc., she plans to pursue a career in soil science consulting.

**Ms. Amanda de Oliveira Silva, Kansas State University, United States**, is earning her Ph.D. in Agronomy with emphasis on crop physiology, plant nutrition, and soil fertility. Her dissertation title is *“Impacts of management practices on yield and nutrient use efficiency in modern winter wheat genotypes.”* Ms. de Oliveira Silva’s research provides detailed plant nutrient evaluation throughout the entire season in various environments at various inputs, and investigated ways to increase nutrient use efficiency while alleviating environmental pollution through appropriate fertilizer management. After her Ph.D., her goal is to continue developing research investigating environmental and biological factors impacting yield and nutrient use efficiency.

**Ms. Lia Belen Olmedo Pico, Purdue University, United States**, is working towards her Ph.D. in crop physiology. Her dissertation title is *“Nitrogen management effects on potential kernel weight determination in maize: underlying mechanisms of yield responses.”* Ms. Olmedo Pico’s research focuses on studying the physiological mechanisms behind potential kernel weight determination in maize as affected by nitrogen availability. After finishing her Ph.D., she plans to return to northern Argentina to work for the National Institute of Agricultural Technology (INTA) where she would like to become a crop physiology researcher focused on abiotic stresses.

**Mr. Osler Ortez, University of Nebraska-Lincoln, United States**, completed his Master’s degree in agronomy at Kansas State University where his thesis title was *“Study of nitrogen limitation and seed nitrogen sources for historical and modern genotypes in soybean.”* Afterward, he started his Ph.D. in agronomy and crop production at the University of Nebraska-Lincoln where his research focuses on identifying and isolating factors responsible for ear formation issues and yield losses in corn, which became a regional concern in recent years. After completing his Ph.D., Mr. Ortez plans to work in close collaboration with the academy, industry, and community in general, for continuing the study of ways to improve agriculture.

## SOUTH AMERICA



**Mr. Arata**  
Argentina



**Ms. Girón**  
Argentina



**Mr. Romero**  
Argentina



**Mr. Bortoletto-Santos**  
Brazil



**Mr. Sarfaraz**  
Brazil



**Mr. Saturnino-Pinto**  
Brazil



**Mr. Sattolo**  
Brazil



**Mr. González-Osario**  
Colombia

**Mr. Agustín Francisco Arata, National University of the Center of Buenos Aires Province, Argentina**, is working towards his Ph.D. in agricultural sciences at the University of Buenos Aires. His dissertation, *“Changes in the source-sink relationship in post-flowering: effects on composition and grain quality in contrasting wheat genotypes in their allelic profile for prolamins,”* analyzes the effect of variations in assimilate availability during grain filling and their interaction with nitrogen-sulfur fertilization on the industrial quality of Argentine wheat varieties belonging to different quality groups. Results would provide knowledge for the design of fertilization strategies and the selection of genotypes adapted to specific environments, improving the sustainability of production and adding value in the wheat crop. The goals of Mr. Arata are to work in teams related to science, technology, and education in the discipline of crop production for balanced, responsible, and inclusive development.

**Ms. Paula Girón, University of Buenos Aires, Argentina**, is working towards her M.Sc. in soil science. Her thesis looks at site-specific management of nitrogen in maize at northwestern Buenos Aires province. Ms. Girón’s research would contribute to characterize spatial variability effects on nitrogen response and to develop criteria to determine economically

## SOUTH AMERICA continued

optimum nitrogen rates for maize according to management zones. Her goal is to assist farmers and professionals in improving nutrient use efficiency in cropping systems of the Pampas to provide for better profits and reduce environmental impact.

**Mr. Juan Ignacio Romero, University of Tucuman, Argentina**, is working towards his M.Sc. in agricultural sciences. His thesis title is *“Absorption, partition and extraction of nutrients in rainfed sugarcane and with drip irrigation in Tucumán-Argentina.”* Sugarcane is a regional crop of great economic, social, and environmental impact in the provinces of Tucumán, Salta, and Jujuy (Argentina), and this work would evaluate the absorption dynamics and the extraction of macronutrients from the new varieties of sugarcane providing for the definition of 4R nutrient management, specifically right rate and time, for sugarcane. Mr. Romero would like to contribute, through teaching and research, with appropriate recommendations and technologies for improving farmer’s profits and environmental protection.

**Mr. Ricardo Bortoletto-Santos, University of São Paulo, Brazil**, is working towards his Ph.D. in chemistry with the Brazilian Agricultural Research Corporation (Embrapa Instrumentation). His dissertation title is *“Role of Polymeric Coating on the Nitrogen and Phosphate from Fertilizers: Insight from Nitrogen and Phosphate Release by Castor Polyurethane Coatings.”* His research will provide valuable information to understand how different materials used for coating affect the diffusional dynamics of nitrogen and phosphorus in fertilizer granules and their agronomic effectiveness. Mr. Bortoletto-Santos’ future goals include completing his Ph.D. and becoming a leading researcher in fertilizer chemistry in an academic position. He plans to be a researcher in the soil fertility and plant nutrition field.

**Mr. Qamar Sarfaraz, Federal University of Santa Maria, Santa Maria, Rio Grande do Sul, Brazil**, is working towards his Ph.D. in soil fertility and plant nutrition. His dissertation title is *“Examining the carbon and nitrogen turnover from different biochars types.”* Mr. Sarfaraz’s proposed research will improve the knowledge of the transformation of soil carbon and nitrogen when it is applied in the form of biochar, instead of the traditional application of animal manures and plant residues that are causing environmental pollution and increasing concentration of greenhouse gases in the atmosphere in Southern Brazil. Following his doctoral completion, Mr. Sarfaraz plans to return to his home country (Pakistan) and pursue a career as a researcher at a research institute to contribute to the improvement of nutrient management practices for sustainable agriculture or wants to teach at a university to explore knowledge about plant nutrients management.

**Mr. Webert Saturnino-Pinto, the Federal University of Viçosa, Brazil**, is working towards his D.Sc. in soils and plant nutrition. His dissertation title is *“Soil availability, accumulation, and kinetics of zinc uptake in corn.”* Mr. Saturnino-Pinto hopes his project will help with reducing zinc hidden hunger due to corn being the model plant and its use as an important global staple food crop. Following his dissertation, he plans to become a researcher and hopes to be able to make a significant contribution to science for the well-being of society.

**Mr. Thales Sattolo, University of São Paulo, Brazil**, is working on a Ph.D. in soil fertility. Mr. Sattolo obtained his M.Sc. at the College of Agriculture “Luiz de Queiroz”, University of São Paulo (ESALQ/USP). His dissertation, under supervision of Professor Rafael Otto, is on soil carbon and nitrogen dynamics. His work examines the effects of nitrogen fertilization and crop rotation on soil carbon and nitrogen transformations and stocks in soils cropped to soybean, maize, and sugarcane.

**Mr. Hernán González-Osario, Universidad Nacional de Colombia, Colombia**, is working on a Ph.D. in biotechnology. His dissertation, *“Biotechnological alternatives to improve phosphorus supply in coffee”*, focuses on the use of native microbes and flora to increase the efficiency of phosphorus uptake for coffee in multiple regions of Colombia. Mr. González-Osario has keen interest in advancing more research on the role of mycorrhizae in phosphorus uptake and to combine this knowledge with the best recommendations of fertilizers to boost yields and quality of coffee.

Funding for the scholar award program is provided through support of IPNI member companies, primary producers of nitrogen, phosphate, potash, and other fertilizers.

More information is available from IPNI staff, individual universities, or from the IPNI website:  
[www.ipni.net/awards](http://www.ipni.net/awards).

## CHINA



Mr. Cai  
China



Mr. Guo  
China



Mr. Ma  
China



Mr. Riaz  
China



Mr. Tang  
China



Mr. Yang  
China



Mr. Yao  
China



Ms. Zhang  
China

**Mr. Zejiang Cai, Chinese Academy of Agricultural Sciences, China,** is earning his Ph.D. in soil science. His dissertation title is “*Effectiveness and mechanisms of organic materials in ameliorating red soil acidification from chemical nitrogen fertilizer.*” Mr. Cai’s research focus is based on the need for a better understanding of the process, mechanisms, and the quantity needed for animal manure and crops straws to be effective to alleviate soil acidification process. Following his Ph.D., he plans to become a leading professional to make important contributions to developing sustainable agricultural productions systems.

**Mr. Junjie Guo, Nanjing Agricultural University, China,** is earning his Ph.D. in plant nutrition. His dissertation title is “*Studies on microbiological mechanisms of the effects of fertilization regimes on crop productivity and soil fertility.*” Mr. Guo’s research mainly focuses on the potential and related mechanisms of increasing soil fertility and crop yield with organic amendments. His career goal is to become an agricultural scientist to maintain soil fertility and improve crop yield.

**Mr. Qingxu Ma, Zhejiang University, China,** is completing his Ph.D. in plant nutrition. His dissertation title is “*Environment factors regulate soil organic nitrogen bioavailability and its mechanism.*” Mr. Ma’s research examined the effects of environmental factors such as pH and elevated carbon dioxide concentration on the relative uptake of ammonium, nitrate and amino acids, and the mechanisms associated with the uptake and metabolism of amino acids. Following his graduation, he plans to do a postdoc in the United Kingdom or United States.

**Mr. Muhammad Riaz, Huazhong Agricultural University, China,** is working towards his Ph.D. in plant nutrition. His dissertation title is “*Boron supply develop tolerance to aluminum-induced inhibition of root growth in trifoliolate orange.*” Mr. Riaz’s research will explain how boron (micronutrient) is useful for plant growth, its related mechanisms and the role of boron in the alleviation of aluminum-induced inhibition of root growth. After his Ph.D., he would like to continue his postdoctoral research.

**Mr. Zheren Tang, Fudan University, China,** is earning his Ph.D. in environmental engineering. Mr. Tang’s M.Sc. thesis involved an application study using a bio-mineral composite material in agricultural waste composting. Following his Ph.D., Mr. Tang plans to join the public welfare department in an international organization to help solve the problems of hunger, poverty, health, and education in less developed countries or regions.

**Mr. Xiao Yang, Shanghai Jiao Tong University, China,** is working towards his Ph.D. in horticulture. His dissertation title is “*Effect of glycine nitrogen on polyphenol biosynthesis and antioxidant activity in lettuce.*” In this research study, glycine was used as a model nutrient of organic nitrogen and different concentrations of exogenous glycine nitrogen were added to examine the metabolic and physiological responses in lettuce’s perspective. Mr. Yang’s career goal is to become an agricultural scientist in the near future.

**Mr. Zhiyuan Yao, Northwest Agriculture and Forestry University, China,** is earning his Ph.D. in plant nutrition. The title of his dissertation is “*Effects of legume green manure incorporation on the environment of dryland wheat field in the Loess Plateau.*” Mr. Yao chose this topic because it focuses not only on the challenge of closing the yield gap, but how the environmental impact of crop production should also be mitigated to propel the sustainable development of agriculture. After completing his Ph.D., he hopes to continue his research topic and further study possible ways for sustainable agriculture.

**Ms. Jiajia Zhang, Chinese Academy of Agricultural Sciences, China,** is working towards her Ph.D. in plant nutrition. Her dissertation title is “*Study on the recommended fertilization based on yield response and agronomy efficiency and limitation standards for root vegetables.*” Her project included published literature and field experiments conducted with her research team that were used to determine yield response, agronomic efficiency, and soil indigenous nutrient supply in the main radish production areas in China and analyze the interrelationships among them. Ms. Zhang plans to contribute to agricultural development in China and become an expert agriculturist.

## SOUTH ASIA

**Mr. Vijay Kumar Didal, the Professor Jayashankar Telangana State Agricultural University, Hyderabad, Telangana, India,**



**Mr. Didal**  
India



**Mr. Praharaj**  
India



**Ms. Rani**  
India



**Mr. Sarkar**  
India



**Ms. Thakur**  
India



**Mr. Ishfaq**  
Pakistan

is working towards his Ph.D. in agronomy. His

dissertation title is “*Enhancing nitrogen use efficiency in different establishment methods of rice (Oryza sativa L.)*.” Mr. Didal’s research work focused on the application of the right dose of nutrients, as per the guidance of Nutrient Expert and recommended dose of fertilizer, with neem-coated urea and vermicompost in different establishment methods of rice (normal transplanting and mechanized system of rice intensification). Following his Ph.D., he wants to pursue postdoctoral research and continue research in the areas of enhancing nutrient use efficiency and biofortification for producing nutrient-enriched crops through the adoption of 4R practices.

**Mr. Subhashisa Praharaj, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttarakhnad, India,** is working towards his Ph.D. in agronomy. His dissertation title is “*Agronomic biofortification of bread wheat (Triticum aestivum L.) with zinc*.” His research is focused on alleviating the malnutrition problem (induced by zinc deficiency) through the agronomic biofortification approach. Mr. Praharaj would like to be actively engaged in research to further find solutions for addressing micronutrient malnutrition problems, especially in developing countries.

**Ms. Sarita Rani, CCS Haryana Agricultural University, Hisar, Haryana, India,** is earning her Ph.D. in agronomy. Her dissertation title is “*Integrated nutrient management for pearl millet-wheat cropping system under saline conditions*.” One of the objectives of her research is to study the effect of different integrated nutrient management treatments on growth, yield attributes, yield, and quality parameters of pearl millet-wheat cropping system under saline conditions. After completing her Ph.D., she would like to join Agriculture Research Services and assist her country in developing new technologies.

**Mr. Sukamal Sarkar, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, West Bengal, India,** is working towards his Ph.D. in crop husbandry. His dissertation title is “*Cropping system intensification through inclusion of pulses in rice-based system in the salt-affected coastal zone of West Bengal*.” One of the major themes of his Ph.D. is optimizing the sowing date of rice for escaping inundation during initial growth. Mr. Sarkar’s continued interest is in developing climate resistant rice based cropping systems, through the reorientation of the crop calendar and inclusion of pulses in coastal saline zone of West Bengal.

**Ms. Jagriti Thakur, Dr. YS Parmar University of Horticulture & Forestry, Solan, Himachal Pradesh, India,** is earning her Ph.D. in soil science. Her dissertation title is “*Standardization of irrigation and fertigation schedules for apple under high density plantation*.” One of the objectives of Ms. Thakur’s research is to determine the optimum irrigation schedule and fertilizer level for fertigation of high-density apple. Following her Ph.D., she would like to render her services as a global competent soil conservationist and help people to think about environmental stewardship and ecosystem sustainability.

**Mr. Muhammad Ishfaq, Institute of Soil and Environmental Sciences, University of Agriculture, Faisalabad, Pakistan,** is earning his Ph.D. in soil science. His dissertation title is “*Soil-potassium dynamics-based fertilizer recommendations in three alluvial soils differing in clay content*.” One of Mr. Ishfaq’s research objectives is to develop precise and site-specific potassium recommendation for different regions of Pakistan. He plans to develop himself as a productive researcher, who can contribute to soil sustainability and food security related challenges.

## EASTERN EUROPE & CENTRAL ASIA



**Mr. Timokhin**  
Russia

**Mr. Artyom Timokhin, Omsk State Agrarian University, Russia,** is working on his M.Sc. at the Faculty of Agrochemistry, Soil Science, Ecology and Environmental Engineering. His research centers around the “*Influence of Various Nutritional Conditions on Productivity and Quality of Leguminous Seeds*.” Artyom is an author and co-author of more than 35 publications. He has participated in many seminars, international conferences and competitions on legume and oilseed crops and soil fertility management. He is looking forward to earn his M.Sc. and to continue research activities on the maintenance of soil fertility, crop nutrition, and protein concentrations in food and forage crops.