

Agronomic Science Foundation

Award Continues Ag System Modeling Legacy of Dr. Lajput Ahuja

Working on the front range of the Rocky Mountains at the USDA-ARS unit in Fort Collins, CO, Dr. Lajput (Laj) R. Ahuja might almost think he's back home on the fertile plains of Panjab, India, where yellow fields nestle against the backdrop of blue mountains in the shadow of the Himalayas. The name Panjab means land of five rivers, and so it is only fitting that Dr. Ahuja, Supervisory Soil Scientist and Research Leader, was elected as a SSSA Fellow in 1994 for his notable accomplishments in soil-water physics.

Ahuja received his bachelor of science degree with honors in agriculture from the University of Delhi in 1954 and master of science degree in agronomy in soil and water management from the Indian Agricultural Research Institute, New Delhi, in 1961. Before coming to the United States



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for his doctorate, Ahuja had worked with the Department of Agriculture, the State of Himachal Pradesh, from 1954 to 1959 as a research assistant and as an assistant professor in the new College of Agriculture from 1961 to 1964. As research assistant, he established a new seed and fertilizer demonstration farm in a remote valley of the Himalayas, which spearheaded development in the area.

As he pursued his doctoral studies at the University of California–Davis, Ahuja was inspired by Dr. Donald R. Nielsen to pursue a specialization in soil physics and to strengthen his training in applied mathematics. He attributes the useful contributions he has been able to make to science and society to Nielsen's mentorship and help. After receiving his Ph.D., Ahuja worked as a post-doctoral research associate at Purdue University from 1968 to 1971 with Dr. Dale Swartzendruber where he made significant original contributions to the experimental and theoretical understanding of soil water movement during infiltration into crusted soil.

Taking that knowledge with him to the University of Hawaii where he worked as an assistant soil scientist at the Manoa campus from 1972 to 1976 and as associate professor at the Hilo campus in 1977 and 1978, he worked with Dr. Samir El-Swaify to initiate a new program for measuring hydrologic characteristics of forest watershed soils by using infiltrometers to monitor rainfall, runoff, and soil water pressures. Working with Dr. Richard Green, he also developed three new methods for determining hydraulic properties from soil cores.

Moving on to the USDA-ARS, National Agricultural Water Quality Laboratory, at Durant, OK in 1979, he initiated and led fundamental experimental work on the processes of soluble chemical transfer from soil to runoff and also conducted innovative work on subsurface lateral flow. While he was at Durant, Ahuja continued his work on developing simpler methods of estimating soil hydrologic properties.

Since 1991, Ahuja has been a research leader of the USDA-ARS Great Plains Research Unit at Fort Collins where he continues to make major original research contributions to the physics of soil-water processes, water quality, and modeling of agricultural systems. According to



Laj Ahuja (**right**), along with fellow USDA-ARS agricultural researchers Tim Green (**left**) and Walter Bausch (**center**), adjust the height of solar radiation instruments. *Photo by Stephen Ausmus.*

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Business & People

In this section, members appear in bold type.

United States Botanic Garden

Dr. **Ari Novy** was recently named Executive Director of the United States Botanic Garden (USBG).

"Dr. Novy is a plant biologist with a wide range of expertise in plant science and an amazing passion to educate people about the importance of plants," says Stephen T. Ayers, Architect of the Capitol and Acting Director of the U.S. Botanic Garden. "His vision and leadership will move the Garden's mission forward in exciting ways."

Novy first came to the USBG as Public Programs Manager and was promoted to Deputy Executive Director in 2013. Prior to joining the USBG, he worked as an estate gardener in Italy, a sustainable agriculture researcher in the Philippines, and an environmental consultant on infrastructure projects in the United States.

He holds a bachelor of arts from New York University and a doctorate in plant biology from Rutgers University. Novy also remains an active researcher, holding an appointment as research collaborator with the Smithsonian Institution, National Museum of Natural History, Botany Department.



Ari Novy

University of Maryland

On 14 Mar. 2014, the graduate students, faculty, and staff of the Department of Environmental Science and Technology at the University of Maryland gathered to celebrate the 50th anniversary of **Delvin S. Fanning** joining the faculty. Fanning arrived in College Park after finishing his Ph.D. in soil mineralogy under M.L. Jackson at the University of Wisconsin. He retired and became Emeritus Professor in 1999.

After presentation of a plaque from the department and a round of cake and toasts, Fanning regaled the audience with tales of early life on campus—the inception and emergence of the Geology Department from within the former Agronomy Department, the liming of acid sulfate soils on the then new varsity baseball field, the football coach whose on-campus house was formerly H.J. Patterson Hall's nearest neighbor and whose kids were frequent visitors to the soda vending machine in our hallway. For Fanning, soil mineralogy and pedology remain a focal point of interest, and he continues to teach a course on acid sulfate soils and to curate the department's extensive monolith collection.

We salute Fanning for his 50 years of service and look forward to a future of continued activity in the department.



Del Fanning

Modeling Legacy of Dr. Lajput Ahuja

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Ahuja, using a system model maximizes water use management by scheduling limited irrigation that is site specific with respect to the amounts and timings of rainfall, critical growth stages of crop, soil fertility, weather conditions, and allocation of limited water among crops as well as an optimal selection of alternate crops during droughts.

L.R. Ahuja Ag Systems Modeling Award

Now through SSSA, this leader and recognized authority in the field has established the L.R. Ahuja Ag Systems Modeling Award to continue the agricultural system model legacy he has begun. The award is presented to a soil scientist, agronomist, or crop scientist in recognition of recent contributions in one or more of the following areas:

- integration of agricultural system models with field research to enhance, extend, and transfer experimental results;
- transdisciplinary research to fill knowledge gaps critical to improving system models;
- synthesis and quantification of the trans- and interdisciplinary knowledge with new concepts and theories for improving models; and
- helping field experimental scientists use the models as well as training and advising graduate students to use the models in their field research.

Dr. Robert Malone, agricultural engineer with the National Laboratory for Agriculture and the Environment at the USDA-ARS in Ames, IA, won the award in 2013. He has attracted the attention of several scientists and engineers from around the world and has made presentations in the U.S. and abroad, served on advisory panels for the USEPA, and developed collaborative research with U.S., Chinese, and French scientists because of his understanding of and ability to effectively use agricultural systems models.

If you would like to be part of this legacy, which will help to ensure sustainable agriculture through the 21st century and beyond, you can support the L.R. Ahuja Ag Systems Modeling Award or one of the many other volunteer or giving opportunities offered by the Agronomic Science Foundation. To find out more about options that might interest you, call me at 608-273-8095 or email me at abarton@sciencesocieties.org. To make a monetary donation online, visit www.a-s-f.org.



Robert Malone