Four Graduate Students Receive "J. Fielding Reed PPI Fellowships"

FOUR outstanding graduate students have been announced as 1992 winners of the "J. Fielding Reed PPI Fellowships" by the Potash & Phosphate Institute (PPI). Grants of $2,000 each are presented to the individuals. All are candidates for either the Master of Science (M.S.) or the Doctor of Philosophy (Ph.D.) degree in soil fertility and related sciences.

The 1992 recipients were chosen from nearly 40 applicants who sought the Fellowships. The four are:

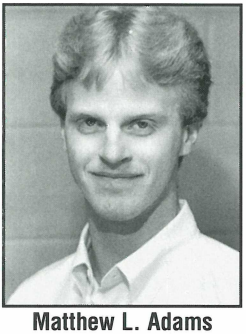
- **Matthew L. Adams, Cornell University**, Ithaca, New York;
- **Matthew G. Hanson, University of Arkansas**, Fayetteville;
- **T. Scott Murrell, Texas A&M University**, College Station;
- **William Bart Stevens, Brigham Young University**, Provo, Utah;

Funding for the Fellowships is provided through support by potash and phosphate producers who are member companies of PPI.

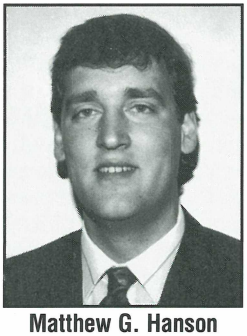
"Each year, we have the privilege of presenting this recognition. All of the applicants for the Fellowships have excellent credentials," noted Dr. David W. Dibb, President, PPI. "These individuals and their educational institutions can take pride in the level of achievement represented."

Scholastic record, excellence in original research, and leadership are among the important criteria evaluated for the Fellowships. Following is a brief summary of information for each of the winners:

Matthew L. Adams, born in Fresno, CA, was awarded a B.S. degree in Agricultural Science, summa cum laude, at California State University, Fresno, in May of 1990. He is currently completing his M.S. degree at Cornell University and plans to continue studies toward the Ph.D. His master's research deals with the use of remote sensing techniques to detect manganese (Mn) stress in soybeans (*Glycine max* cv 'Bragg'). Soybeans were grown under controlled conditions in chelate-buffered hydroponic solutions to regulate the supply of Mn. Reflectance and fluorescence emission spectra, as well as specific characteristics of induced fluorescence of leaves, were evaluated to identify Mn stress. Later experiments will identify nutritional and spectral changes associated with copper (Cu), iron (Fe), and zinc (Zn) stress. Following graduate school, Mr. Adams hopes to work in a research position.

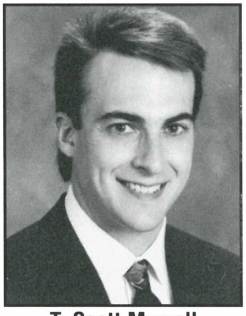

Matthew L. Adams

Matthew G. Hanson is working toward his M.S. degree at the University of Arkansas. Born in Hudson, WI, he received his B.S. degree in agriculture from the University of Wisconsin-River Falls in June of 1990, graduating with honors. His M.S. thesis title is "Identification of Soils with Chemical Properties that May Inhibit Deep Root Growth." Working with 16 soils representing more than a million

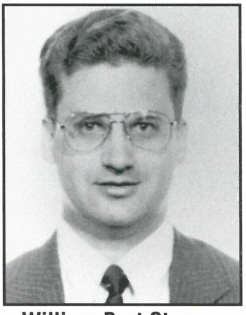

Matthew G. Hanson

acres of croplands in eastern Arkansas, he has run analyses to depths as great as three feet to determine levels of elements that are essential or detrimental to plant growth. Nearly all the soils were found to be deficient in phosphorus (P) and potassium (K), even in the top foot of soil. Several soils were found to have very acid pHs and high levels of exchangeable aluminum (Al) in the upper foot. An inverse relationship was found between root length and Al concentrations. After completing his M.S. degree, Mr. Hanson plans to work for a private firm in Wisconsin. His long-term goal is to obtain a Ph.D. degree in soil fertility and teach or work in Extension.

T. Scott Murrell was born in Winchester, IN. He earned a B.A. degree, with distinction, in general history at Purdue University in 1986. He did graduate work at Yale University before returning to Purdue, where he was awarded the M.S. degree in agronomy in December, 1991. He is currently pursuing a Ph.D. degree in soil chemistry at Texas A&M University. His dissertation title is "Gradient Diffusion of Nutrients for Crop Production." His research will focus on the incorporation of a concentration gradient into an ion diffusion model, to more accurately reflect natural systems. Estimated nutrient uptake calculated from his model will then be compared to that predicted by models where concentration has been assumed to be constant. Crop uptake observed in the field and greenhouse will be compared to model estimates, along with an evaluation of the model's ability to predict nutrient requirements in best management practice (BMP) crop production. Mr. Murrell's career goal is to conduct research that will bridge the gap between basic and applied research.


T. Scott Murrell

William Bart Stevens is a native of Cowley, WY. He attended Ricks College in Rexburg, ID, earning an Associate Degree in crop and soil science in 1988. He entered Brigham Young University (BYU) in the fall of 1988 and was awarded his B.S. degree, summa cum laude, in crop science in the spring of 1991. He is currently studying for his M.S. degree in agronomy at BYU. Mr. Stevens' research is focused on the screening of soybean cultivars grown in nutrient solution to identify those which can utilize oxidized soil iron (Fe^{+3}), the insoluble, plant-unavailable form common to high pH soils. The basis of his screening method is to quantify cultivar ability to reduce Fe^{+3} to Fe^{+2} at the root plasma membrane. If successful, Mr. Stevens' research will result in more rapid, less expensive screening procedures for establishing Fe-efficient crops. He plans to continue his studies through the Ph.D. level.


William Bart Stevens

The Fellowship winners are selected by a committee of individuals from PPI staff and the PPI Advisory Council. The Fellowships are named in honor of Dr. J. Fielding Reed, retired President of the Institute, who now lives in Athens, Georgia.

Dr. W.R. Thompson, Jr., PPI Midsouth Director, served as chairman of the selection committee for the 1992 Fellowships. "The knowledge, dedication and high ideals of the 1992 applicants were quite evident. It is reassuring to note the achievement and goals of these young people, not only in academic work, but also in other aspects of their lives," he stated. ■