



New Member Profile: Doug Bielenberg

*By Ellen Strother, Environmental
Landscape Specialist*

Doug Bielenberg was born in Honolulu, Hawaii. His father was a serviceman in the US Navy so the family moved around quite a bit during his first 15 years. Bielenberg's dad was actually stationed at Charleston in the late 80s, during his last tour, and the family lived in Summerville, SC for four years. "In a way I am not really new to the state!" After his father retired from the Navy the family returned to Iowa, where the majority of his family remains. "I attended high school in Iowa and then went on to the University of Northern Iowa, where, incidentally, Constantine Curris was president. He moved to Clemson after I graduated."

"I have always been fascinated by plants, they are everything! It's impossible not to be in wonder at them, because where would we be without them?" Out West, in mining country, Bielenberg recalls a bumper sticker that stated, "If its not grown, its mined." He believes this very simple statement to be true and that it sums up how dependent we are on our natural environment.

Bielenberg's Midwest experience further supported his plant passion. "To see the tremendous burst of growth that can happen in a single year is to get a glimpse of the energy and power of plants, whether it be a farmer's field or a stand of trees."

Doug Bielenberg received his BS in biology and a minor in Chemistry from University of Northern Iowa. His PhD in Plant Physiology was earned at Penn State with his dissertation titled "Interactions Between Nitrogen Availability and O₃-Induced Accelerated Leaf Senescence." Postdoctoral work was performed at University of Nevada, Reno.

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Bielenberg specializes in how plants respond to and deal with their physical (abiotic) environment. "Plants are at the mercy of the elements and environment because they are not mobile. Once a plant begins to grow somewhere, it has to deal with that place and those conditions. And, if it is a perennial, it has to do so through all the weather of the seasons of the year for many years. It is one reason I am so fascinated by plants. Animals can move around and find a nice environment, or modify their environment, like migrating birds or beaver dams, but a plant cannot. Imagine if you were forced to sit in one place for a week, let alone your whole life!"

Bielenberg describes himself as a plant ecophysiologicalist. This is someone who is interested in the physiological reasons that plants are able to live where they do. He is intrigued by plants' physiological and biochemical complexity. "For example, what is it about one tree that lets it survive freezing temperatures when another doesn't? If we understand why a plant can grow in salty water, or survive summer heat, we could then try to breed plants that have those characteristics." Bielenberg credits Dr. Virginia Berg of University of Northern Iowa with his decision to be a researcher. "She got me involved in research and opened my eyes to the field."

Bielenberg's title is Research Assistant Professor for the Horticulture Department. He is currently working on a project with Clemson horticulturist Greg Reighard, looking at the control of dormancy in peach. "It is mainly a genetics project at this point and involves some very interesting biology." He is also writing grants to fund leaf senescence (ageing) research. "Leaf ageing is another interest of mine that comes out of my thesis work. I am interested in how stress causes leaves to age physiologically and what that will mean to the rest of the plant."

Bielenberg feels the peach research has obvious industry benefits. In addition, "My general interests apply to helping understand environmental responses of plants and in the long run be able to improve plant growth and performance during stressful conditions."

Clemson University made an excellent first impression upon Doug Bielenberg. "It is a good sized school, with a great mix of teaching and nationally-recognized research. From my interactions with faculty here I am really impressed with the level of knowledge that the faculty have about the students in their department. There is a great opportunity for students to get involved with projects and professors and widen their educational experience."

The city of Clemson impressed him as well. "The natural beauty of this area is phenomenal. And yet, despite being so tranquil and beautiful, there is so much nearby. It's a short trip to so many different cities and locations. This part of the country has so much to offer."

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