



2006

JOHN Z. DULING GRANT WINNERS

Information provided by Gary Majeskie

Improving oak transplant success by investigating the effects of caliper size on establishment

Dr. Nina Bassuk, Cornell University – \$6,625
Determine the relationship between caliper size and establishment of four oak species, and compare the physiological characteristics that influence transplant success.

Identification of signaling molecules in the systemic induced resistance phenomenon in Austrian pine

Perluigi Bonello, Ohio State University – \$7,500
Identification of the signaling molecules involved in SIR to Diplodia tip blight of Austrian pine for possible use to induce disease resistance.

Effects of soil type, cultural practices, and mycorrhizal inoculation on native mycorrhizal, carbon allocation, and stress tolerance in paper birch

Perluigi Bonello, Ohio State University – \$7,500
Determine the effects of fertilizer amendment and treatment with a commercial inoculant on the mycorrhizal associations of paper birch in two soil types.

Mature tree response to hurricane-related flooding in northern Gulf Coast communities

Hallie Dozer, Louisiana State University – \$7,448
Initial data collection on mature canopy tree response to hurricane-caused floods in coastal Mississippi, Louisiana and Texas.

Evaluating staking systems effectiveness in wind storms

Ed Gilman, University of Florida – \$7,500
Quantify the effectiveness of various tree stabilization products when newly planted trees are subjected to wind loading.

Street tree decline and construction damage: Long-term impacts of infrastructure repair on the survivability and condition of trees

Dr. Richard Hauer, University of Wisconsin, Stevens Point – \$7,500
Measure the long-term effects (20-25 years) of construction damage to street trees. Follow up study by revisiting construction sites from the 1980s.

Impact of magnesium chloride solutions on rhizosphere of four tree species

William Jacobi, Colorado State University – \$7,500
Analyze the growing medium in which trees from an earlier study were subjected

to repeated applications containing four concentrations of $MgCl_2$ (a chemical used as a de-icing salt) for 12 weeks.

Tree loss due to urban infrastructure improvement

Gary Johnson, University of Minnesota – \$7,500
Document the effects of infrastructure improvements on the condition and structural integrity of street trees in 5-7 Midwestern cities.

Optimization of sulfur fertilization for improved tree growth and health

Michael Mickelbart, Purdue University – \$7,500
Confirm the beneficial effects of S on N uptake and storage, N contribution to following season's growth, and stress tolerance.

Improving winter and salt hardiness of evergreen trees

Dr. Glynn Percival, R.A. Bartlett Tree Research Lab – \$7,500
Determine the effectiveness and feasibility of commercially available Ca fertilizers in combination with film-forming polymers to improve the freezing and salt tolerance of evergreen trees.

Identifying genes involved in resistance to white pine blister rust in eastern white pine

Jason Smith, University of Minnesota – \$6,586
Identify genes and molecular markers associated with resistance to white pine blister rust.

Is transplanted tree mortality due to mechanical damage or to desiccation during transport?

J. Ryan Stewart, University of Illinois – \$7,500
Determine to what degree shipping conditions affect the survival and re-growth after transplanting of river birch and pin oak.

Earthworm ecology and applied technology in landscape tree soils

Eric Wiseman, Virginia Tech – \$7,500
Determine if earthworm populations can be augmented through introduction, if earthworms alter soil properties, and if earthworm introduction benefits landscape trees.

Total Funding Amount Requested – \$95,659