



Turfgrass and Environmental Research

2010 Call for Research Proposals

Vision: *Use science to benefit golf in the areas of turfgrass and resource management, sustainable development and environmental protection.*

Goal: *Develop turfgrasses and cultural systems with enhanced stress tolerance and reduced supplemental water requirements, pesticide use and costs.*

- Integrated Turfgrass Management
- Physiology, Genetics and Breeding
- Product Testing

Integrated Turfgrass Management

Improved turfgrasses developed for use on golf courses require management practices that provide quality playing surfaces while conserving natural resources and protecting the environment. A series of research projects will be funded with the aim of conserving natural resources by reducing the use of water, pesticides, and fertilizers. The objectives of these studies will focus on the following:

- Develop cultural practices that allow efficient turfgrass management under unique conditions, such as poor quality soils, shade, and marginal quality water
- Determine the range of adaptability and stress tolerance of turfgrasses
- Evaluate direct and interacting effects of two or three cultural practices, like mowing, irrigation, fertilization, cultivation, compost utilization; and programs to control pests and organic matter accumulation (thatch)
- Investigate pest management practices such as biological, cultural, and mechanical controls, application of turf management practices utilizing IPM and reduced inputs, and pest modeling and forecasting.

The results of these studies should lead to the development of turfgrass management programs that conserve our natural resources and reduce costs, with minimal impairment of playing quality conditions or aesthetic appeal. We encourage regional cooperation among researchers where similar climatic and soil conditions exist.

Physiology, Genetics and Breeding

The quality and stress tolerance of turf is a product of the environment, management practices and genetic potential of the grass plant. In many cases, major limitations to turf quality are stress effects, many of which can be modified or controlled through plant improvement. Projects will

be directed toward the development of turf cultivars that conserve natural resources by requiring less water, pesticides and fertilizers. Research projects that apply new biotechnological methods toward turfgrass improvement will be considered. Among the characteristics most desirable in the new turfgrasses are:

- Reduced need for pesticides by increasing resistance to disease, insects, nematodes, and weed encroachment
- Increased shade tolerance
- Reduced requirements for mowing, irrigation, and fertilization
- Tolerance of non-potable water
- Ability to survive high and low temperature extremes
- Increased drought tolerance
- Tolerance of intensive traffic
- Tolerance of poor quality soils.

Research in the fields of biotechnology, genetics, cytogenetics, cytology, entomology, genetics, microbiology, nematology, pathology, physiology, and other sciences that support the project objectives and provide improved techniques for improving golf turf species will be considered.

Product Testing

The goal of the product testing is to support and direct independent research designed to provide consumers unbiased information regarding product efficacy. This information will help consumers make financially and environmentally sound product purchasing and usage decisions. The program also will provide USGA Green Section agronomists scientific information to support recommendations about products that have limited scientific information about agronomic benefits. Product testing projects could include:

- Organic vs. conventional agronomic products for turfgrass nutrition
- Alternatives to pesticides for disease or insect problems
- Biostimulants
- New technology with limited information on turfgrass applications
- Recycled materials
- Alternative construction methods and materials
- Soil amendments

Product testing projects should be performed over two years for a maximum of \$10,000 per year with no overhead or indirect costs included. The number of products tested, the turfgrass performance characteristics measured, and amount of research information collected will be used to determine if the full funding amount is awarded.

2010 Guidelines for Funding Research Projects

To facilitate the development of research proposals, the Turfgrass and Environmental Research Committee have prepared guidelines for your information and consideration. Full proposals will be evaluated on their relevance to established goals, obtainable objectives, experimental design and methods, qualifications of the investigator(s), availability of adequate research facilities, and acceptability of the budget. There may be up to \$200,000 available for funding research projects starting in February 2011. Selected proposals will be submitted in the 2011 Green Section Budget for final approval by the USGA Executive Committee. *Selection of your proposal **does not** guarantee funding in 2011 until approval by the Executive Committee.*

Research Proposal Format and Timetable

1. Please submit one copy of the full proposal (8 to 10 pages) to the USGA Green Section Research office by July 21, 2010. **PLEASE SEND E-MAIL COPIES USING ONLY MICROSOFT WORD TO mkenna@usga.org. The file size should be less than 5Mb!**

Research Proposal Format

Page 1: An 'Executive Summary' form should be completed and accompany the full proposal. **Please consider this one page summary as the cover sheet of your proposal. Include the university/institution name, proposal title and principal investigator's name, address, telephone email on this page.**

Pages 2 through 8: Up to seven (7) single-spaced pages with one (1) inch margins, **and minimum font size of 10 points**. Proposals should outline the objectives of the project; research methodology; available research and field facilities; and results reasonably expected at the project conclusion. Include a Literature Cited section for previous research pertaining to your project proposal.

Page 9 (or next page): A project budget, which **does not** include funding for equipment, construction costs, faculty salaries, and **not more** than 16% indirect costs (see the 'Funding' section below).

Page 10 (or last page): Brief one paragraph biographical description of the Principal Investigator and cooperating researchers.

2. Evaluation and selection of full proposals will be made in August 2010 and notification of proposal selection will be made the third week of September 2010.
3. Selected proposals will be submitted in the 2011 Green Section Budget for final approval by the USGA Executive Committee. *Selection of your proposal **does not** guarantee funding in 2011.*
4. After USGA Executive Committee budget approval and signed Agreement, funding will begin in the project year of February 1, 2011 through January 31, 2012.
5. When a proposal is accepted for funding, this document (including the project budget) will become EXHIBIT A of the formal Agreement between the university or institution and the USGA (sample Agreements are available upon request).
6. Agreements for approved projects will be written for one to three years; however, continuation of the project shall be determined annually and written notice shall be given. The decision to continue will be subject to performance and progress toward meeting the stated project objectives.

Funding

1. The USGA will fund research projects up to \$20,000 per year for one to three years. These grants are intended to provide seed money or partial funding of the project. The USGA realizes that \$20,000 per year may not be sufficient to cover all project costs for most areas of research. A total of \$200,000 of new funding may become available in 2011.
2. USGA project funding shall not be used for capital expenditures, construction costs or faculty salaries. It may, however, be used for graduate student research support, graduate student tuition, technician salaries, and labor costs.

3. Overhead or administrative costs shall be held to an absolute minimum, but will not exceed 16 percent. Generally, the USGA will not support overhead or administrative costs for grants less than \$10,000. The USGA is a not-for-profit, [501(c) 3] association. As such, it is vitally interested in providing the maximum direct support to research from available funds.
4. Please indicate if other agencies are committed to or are funding the same project. A letter from a local or regional funding agency is appreciated. The USGA responds favorably to project proposals where university, local or regional funding is contributed to the project. Please estimate what the total cost of the project will be if other agencies are funding the research effort.

Proprietary Rights

5. The general policy of the USGA is that all technology, inventions, and writings developed or first made in the performance of the research project and any patents, plant variety protection and copyrights thereon shall become the property of the university. However, the USGA, in effect, shall have the right of first refusal if the university elects not to file a patent or plant variety protection application on any invention conceived or reduced to practice in the course of the research project.
6. It is the policy that the USGA receives 50 percent of all royalties (less patenting and licensing costs) or the monetary equivalent of any other consideration received by the university or the USGA from the sale, licensing or sub-licensing of proprietary rights. It should be noted that all royalties received by the USGA shall be deposited in the USGA Foundation for the perpetuation of turfgrass and environmental research.

Reports and Articles

7. The university or research institution shall submit two reports annually to the USGA. Please note that failure to provide the USGA the following reports and articles as described below and by the dates indicated will result in the withholding of funding.
 - a. Annual review through USGA Live Meeting.
 - b. A brief report (2 to 3 pages) describing in reasonable detail the research initiated, progress, and results will be due in the USGA Research office by October 1 of each project year. The information in this report will be used in the USGA’s “Turfgrass and Environmental Research Summary” that is published each year and distributed at the Golf Industries Show. All reports will be available online as part of the Turfgrass Information File.
 - c. A detailed report setting forth the research initiated, progress, results, and the proposed research schedule and anticipated results for the coming project year will be due on December 1 of each year.
 - d. At the conclusion of the project, a final report that summarizes the entire project is required. If a graduate student thesis or dissertation is a result of the funded research, a copy will be submitted to the Turfgrass Information Center at Michigan State University.
8. At the conclusion of the project, a peer-reviewed article (or equivalent) should be submitted to a scientific journal. A copy of the article submitted to the scientific journal should be sent to the Research Office.
9. Note: The USGA has the first right of refusal to trade publications published on USGA-funded research. During the project or at the conclusion of the project, at least one 2,000-word article for the Green Section Record or the web magazine Turfgrass and Environmental Research Online is required.

If more information or clarification is required, please contact:

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Telephone: (405) 743-3900 E-mail: mkenna@usga.org	

EXECUTIVE SUMMARY INSTRUCTIONS

The *Executive Summary* is the **First Page** of your research proposal. The very top of the form should contain the project title, principal investigators, university, and address of the contact person for the proposal. Also, please include your work phone, FAX number and e-mail address.

Project Description: An introduction of the research problem, rationale and summary of the research objectives addressed in the proposal should be included in this section.

How ours is Different: How does this research effort differ from previous work? How is your approach unique? How will the results change the way golf courses are managed?

Potential Benefits: What will the research project produce in terms of scientific knowledge? How do you think the research will be applied to the management of golf courses? Who is the audience your research project is directed toward?

Deliverables: Plant varieties, improved germplasm, new research or management techniques, interesting genes, peer-reviewed journal articles, trade magazine articles, educational materials, etc.

Budget Summary: Fill in the annual funding request and the total amount for the research project. Each project may receive up to \$30,000 per year for a period of one to three years. Remember this total must include the maximum 16 percent overhead allowed.

An Executive Summary prepared in your own word processing software is acceptable as long as it fits on one page and is similar in appearance to the form provided. The border or box around the text for each section is optional. You can download a MS Word or PDF copy from the USGA Green Section's web page (www.usga.org).

EXECUTIVE SUMMARY

Project Title:

Principal Investigator(s):

University:

Address:

Telephone:

e-mail:

Project Description:

How Ours is Different:

Potential Benefits:

Deliverables:

Budget: Year	Funding Amount
Year 1	\$
Year 2	\$
Year 3	\$
3-Year Total	\$