
Weed Science Society of America

Presenter: Dr. David Shaw
USDA-CSREES Stakeholders' Workshop
November 16, 2005



The Weed Science Society of America (WSSA) would like to emphasize our support for NRI funding of mission-based, application-driven research that directly addresses critical issues in agriculture and invasive weed management. We believe that this viewpoint is in perfect harmony with the NRI Reviewing Guidelines stating that research should be relevant 'to improvements in and sustainability of U.S. agriculture'.

The WSSA would like to express its deep concern with the direction of the NRI Competitive Grants Program 51.9, The Biology of Weedy and Invasive Species in Agroecosystems.

- Program 51.9 now targets not only weedy and invasive plants, but all other invasive species without an increase in funding. The WSSA would like to point out that NRI Programs 51.2, 51.3 and 51.8 that deal with the biology of arthropods, nematodes, and microorganisms were not opened up to invasion biology for their representative organisms. The WSSA would like to see invasion biology for different species placed in their respective NRI Programs.
- The current request for application (RFA) for Program 51.9 appears to be focused on ecological studies on invasive species at the population level and above with no emphasis on weed biology at the suborganismal level on physiology, biochemical, genetic, and molecular aspects. This is surprising with recent initiatives on weed genomics. The WSSA would like to see a balance in research priorities that consider both suborganismal and population level weed biology. Furthermore, this balance in research should address current problems using economically relevant species. There has been a recent trend towards funding NRI projects that seem to focus on model systems and invasive species with limited geographic range and little economic relevance in agroecosystems.
- Only the RFA for Program 51.9 now requires a letter of intent by December 16 after which a committee will decide on invitations by January 1, 2006. This process will not provide much flexibility to consider other programs and limits the grant preparation period to less than 1.5 months.

The WSSA would also like to see more funding opportunities in the following areas:

Weed Biology and Ecology- Better understanding of weed biology and weed ecology is needed for development of more effective integrated weed management systems which utilize all tools available including cultural, mechanical, biological and chemical control strategies. Weed biology and weed ecology research is also needed to accelerate progress in several areas of weed management such as GPS/GIS based variable rate herbicide applications, herbicide resistant crops (HRC) and knowledge based decision support systems. The value of these management tools depends greatly on better understanding of the mechanisms of weed, crop and cropping system interactions. This includes research in weed genetics and physiology.

Invasive Weeds- Predictive tools are needed to identify species of concern and potential for invasion into sensitive ecosystems. Systems for early detection and rapid response (EDRR) are also needed to combat potentially serious weed invasions caused by human activity, whether accidental or intentional. Development of tools to assess impacts of weeds on ecosystems, including threatened and endangered species, requires basic research on the mechanisms of plant invasion. Economic assessment tools are also needed to quantify the impacts of the problem and to help set management priorities.

Knowledge Based and Systems-Approach Based Decision Support Strategies- With the proliferation of computer technology there are good opportunities to build decision aids that integrate biology and control data, expert knowledge and grower wisdom with social, economic and environmental perspectives. To build these systems, more long- term and large-scale studies are necessary with growers and advisors included in their development. The variable response of crops and weeds according to species, growth stage and environmental conditions also needs further research.