American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America (ASA/CSSA/SSSA)
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The primary missions of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America (ASA/CSSA/SSSA) are to promote effective research and teaching, foster high educational standards, disseminate agronomic, crop, and soil sciences information, encourage professional growth, and to interact with organizations sharing similar goals. With 11,353 members, ASA/CSSA/SSSA are the largest life science professional societies in the United States dedicated to the agronomic, crop and soil sciences. The programs and activities of ASA/CSSA/SSSA are tailored not only to our members' interests and scientific advancement, but also serve the public interest. ASA/CSSA/SSSA publishes six peer-reviewed journals in which over 1100 scientific articles are published yearly.

Recommended Research Priorities from ASA/CSSA/SSSA:

Interdisciplinary Long-Term Systems Level Research: Ensuring a safe and plentiful food supply, developing new and creative uses for renewable agricultural resources, and sustaining of our natural resource base are cornerstones of agricultural research. Acquiring the new knowledge and understanding needed to address these critical areas, and effective deployment of this knowledge requires both interdisciplinary and systems level approaches to research and technology transfer. Such integrative research approaches require higher levels of funding and longer-term funding commitments. Funding interdisciplinary teams for a 5-year period would be more effective than funding smaller groups for 2-3 years. With problems like potato blight or soybean rust, which affect many parts of the US, the most progress can be made by pooling regional studies utilizing interdisciplinary research teams working on these problems at different locations. Field scientists should be included to facilitate extension of lab research results to field tests and determination of practical applications for farmers. Integrative long-tern research approaches could also provide a more effective mechanism for ensuring US citizens and policy makers are prepared for global climate change, and the risks of bioterrorism, ecological concerns, and recovery from natural disasters.

Integrative-Genome Enabled Research: Rapid advances in structural and functional genomics as well as the sequencing of whole genomes have made it possible to investigate, understand, and alter many complex biological traits for beneficial purposes. To a great extent, these advances have been made in single-celled organisms (e.g. bacteria or algae), and in model plant systems (Arabidopsis). The research community is now poised to apply these advances in genomics to traits of economic value in our important agricultural plant species. Funding is needed on several fronts to achieve this goal: continued support is needed for development and utilization of genomics databases for the major crops; support is needed to encourage the integration of functional genomics research at multiple levels of biological complexity; and it is critical to provide increased support for training the next generation of scientist who must be capable of integrating fundamental new knowledge about plants at the genome level with applied research needs at the systems level.

Advanced Use of Digital Technologies for Integrative Research and Teaching Initiatives: A more precise integration of knowledge from multiple disciplines into a comprehensive management system to maximize productivity costs is needed. Future research should coordinate computer- and/or equipment-based systems in decision processes that make these technologies usable in commercial plant production systems. Epidemiological predictive models should integrate one or more disease control practices with agronomic or horticultural crop production schedules. Remote sensing equipment, such as but not exclusive to hyper- or multi-spectral aerial imagery, should improve early detection of plant stresses. Coordinating sensing equipment with meteorological data as part of a computer-based logic system to match types of plant stresses with events, periods of increased water demand, peak of an insect population cycle, or conditions favorable for infection of a pathogen are needed for predicting plant stress. An array of digital capabilities, such as static images, video, sound, zoom, and multi-field display functions, should be investigated to expand competency of technology transfer to students in traditional and distance learning classroom settings. Evaluation of distance learning strategies should encompass the use of supplemental training methods that complement and enhance the use of digital technologies.