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Final Proposal for the Reorganization of the USWBSI Research Areas

Original RA[1]	New RAs	Objective/Comments (i.e. subject matter)
BIO	Host Genetics & Genomics	Genetics/Genomics of host plant resistance, and associated technologies which accelerate use of such genes in farm fields. Mechanisms of resistance at the host gene level including pathways of molecular defense responses. Practical outcomes are breeder-enabling technologies and information associated with natural host resistance genes.
	Genetic Engineering and Transformation	Science and affiliated technologies focused on GMO approaches to host plant resistance. Practical outcomes are FHB resistant transgenic plants and technologies for rapid deployment of the engineered resistance gene(s) by breeders.
EDM and BIO	Pathogen Genetics & Genomics	Fusarium genetics (including population genetics/taxonomy) and genomics. Primary aim is to understand at a molecular level the pathogen's processes (and diversity therein) which enable pathogenesis and mycotoxin production. Resolution of interactions of different host and pathogen genes in altering disease and mycotoxin development (i.e., mechanisms of resistance/virulence) as viewed from molecular levels is also an objective. Practical outcome is identification of intervention strategies through resistant varieties or chemical/biological controls.
EDM	Etiology, Epidemiology and Disease Forecasting	Investigations on the etiology of FHB: where does infectious inoculum come from, when will it cause disease, how does it colonize and spread within wheat/barley, when and where does it synthesize DON. How do different host resistance genes function in altering disease and DON development (i.e., mechanisms of resistance) as viewed from non-molecular levels (e.g., histologically and physiologically)? Also, refinement and deployment of Disease forecasting tools. Practical outcomes encompass disease management decision tools and advanced knowledge pertaining to increased disease development resulting from microbial/environment interactions. The term 'etiology' is meant here to encompass (non-molecular) studies that attempt to elucidate the cause of disease. With a little imagination this would include host, pathogen, and environment interactions, components of resistance, role of DON in disease development, impact of environmental factors on disease development and (non-molecular) studies on the biology of the pathogen.
CBC	Chemical, Biological and Cultural Control	Same concept as Chemical and Biological Control RAC (see FY05 Program Description and Research Priorities) with addition of the cultural practices objectives formerly in the EDM committee
GIE	Host Genetic Resources	Discovery of novel sources of host plant resistance genes in barley and common/durum wheat or their relatives. Pre-breeding activities which generate adapted breeding parents carrying one or more host plant resistance genes.
FSTU	Food Safety, Toxicology, & Utilization of Mycotoxin-contaminated Grain	Proposed title change only. Same concepts as for same committee under the name Food Safety, Toxicology, and utilization.
VDUN	Variety Development & Uniform Nurseries	No proposed changes to title or subject area.

[1] BIO – Biotechnology
CBC – Chemical & Biological Control
EDM – Epidemiology & Disease Management
FSTU – Food Safety, Toxicology, & Utilization
GIE – Germplasm Introduction & Enhancement
VDUN – Variety Development & Uniform Nurseries

To see FY05 Program Descriptions and Research Priorities for various research areas, click on link below:

http://www.scabusa.org/pdfs/fy05_ra_pd-rp.pdf