



United States  
Department of  
Agriculture

National Institute  
of Food and  
Agriculture



# The Leadership Management Dashboard (LMD) User Guide:

## My Snapshots

**SYSTEM VERSION: 5.0**

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## Contact Us:

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For general questions about this application, or support for the Reporting Portal and Logging in: [electronic@nifa.usda.gov](mailto:electronic@nifa.usda.gov) (Tier 1 support for all users)

### Document Comments:

We value your feedback on this document. Please email your comments to [LMDsupport@nifa.usda.gov](mailto:LMDsupport@nifa.usda.gov). (Tier 2 support for Internal Staff)

Hours: M-F 7AM – 3:30PM

### Troubleshooting for second tier IT Support:

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**This document was created by users for users. We value your feedback! The Planning, Accountability and Reporting Staff (PARS) at NIFA has super-users that may be able to help if you encounter problems:**

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*Please remember, the data shown in this guide may not be available to the public. This guide is intended for internal use only.*

## User Guide Organization:

Guides are available under the “Help” link. The Basic Navigation Guide shows you the basics of LMD. Every other guide is specific to one “Tab” in LMD, which are listed below. To download the complete Guide, please visit the Intranet site: <http://intranet.nifa.usda.gov/groups/OfficesUnits/OA/PA/Reporting>

Tab	User Guide
General Introduction Guide	1 - Basic Navigation in LMD – User Start Guide v1.0
Acronyms	Acronym List v1.0
Activities	Activities User Guide v1.0
Analyze	Analyze User Guide v1.0
AREERA POW	AREERA POW User Guide v1.0
Awards	Budget and Awards User Guide v1.0
Search	Enterprise Search User Guide – Faceted Search Overview v1.0
Search	Enterprise Search User Guide v1.0
Goals	Goals and Portfolios User Guide v1.0
Portfolios	Goals and Portfolios User Guide v1.0
My Snapshots	My Snapshots User Guide v1.0
State Snapshots	State Snapshots User Guide v1.0
Workload	Workload User Guide v1.0
CRIS Classification Reference	My Snapshots User Guide v1.0

## My Snapshots

This tab is used for reporting for capacity and non-capacity projects. Figures available include total project counts, funding amounts, scientist FTEs, and percent of total funding for any or all States under specific Knowledge Areas (KA), Subjects of Investigation (SOI) or Field of Science (FOS) during a chosen time period, by Fiscal Year, for any USDA agency projects that are in the Current Research Information System (CRIS). Information is currently entered into REEport and moves through CRIS to LMD.

The screenshot shows the USDA REEIS interface. At the top left is the USDA logo. To its right is a navigation menu with items: Budget, Awards, Activities, My Snapshots (highlighted), State Snapshots, AREERA POW, Workload, Goals, Portfolios, Analyze, and Search. On the top right is the REEIS logo with the tagline 'MEASURING RESULTS'. Below the navigation menu is a sub-menu with 'Knowledge Area', 'Subject of Investigation', and 'Field of Science'. The main content area is titled 'My Snapshots: Knowledge Area' and contains four dropdown menus: 'Fiscal Year: Choose the Fiscal Year...', 'State: Choose the State...', 'Sponsoring Agency: Choose the Sponsoring Agency...', and 'Knowledge Area:'. A 'Show Result' button is located at the bottom left of the form.

**Data Sources:** These numbers are “Actuals” or reporting data used to report to the Budget Office.

Funding information is imported to CRIS (REEport updates CRIS too) from CREEMS and represents data which has been reported as closed out (already reported to OMB after going through subject matter expert analysis such as the crosscuts and is unchangeable). Only years that NIFA has reported on are included because expenditure data is collected in the Annual Reports/AD-419 process after the fiscal year is complete. **This data does not include Extension program reporting data (Smith-Lever 3b&3c and 1890 Extension), which is only reported out of the Plan of Work (POW) application since capacity-funded extension programs do not fill out technical reports in the REEport/CRIS applications.**

Full Time Equivalent (FTE) represents the number of full time scientific employees the project funds. This information is collected on the AD-419 for Capacity projects only and is calculated for the NIFA portions of project funding. This data is reported annually after the reporting period is complete. For Hatch and Evans Allen projects at a particular institution, this may not be the same as the data reported in the POW application, since that data is reported mostly by Administrators at a program level (e.g. “total FTEs for the Hatch program” at a Land Grant University) versus the project level that is reported through REEport.

The Percent Total Funding is an LMD calculation for the percentage of the total funding going toward the Knowledge Area (KA), Subject of Investigation (SOI) or Field of Science (FOS) that you choose.

For information about KAs, SOIs, or FOS please see [Appendix 1, 2, or 3 respectively](#).

**Navigation:** “My Snapshots” tab has three sub-tabs, one for each level of classification in CRIS:



“**Knowledge Area**” sub-tab  
for searching by KA

“**Subject of Investigation**” sub-tab  
for searching by SOI

“**Field of Science**” sub-tab  
for searching by FOS

Clicking on the Subject of Investigation sub-tab automatically starts a “New Page” for your analysis. This activates the factors and buttons on the page that are available, allowing you to choose the limits (factors or variables) of your question. You may limit your search by Fiscal Year (Federal Fiscal Year starting Oct 1 and ending Sept 30 each year), State, and Sponsoring Agency to display the results that relate to your chosen CRIS classification (KA, SOI, or FOS). Agencies included are all USDA research agencies. For an explanation of Agencies and acronyms see the [Acronym Appendix](#). You may choose one option for each of these limitations, or choose the “All” option.

The results are a numerical and graphical display of the total number of projects, total amount of funding of those projects and a percentage of the total funding that was applied to your chosen subject of investigation (or KA on that sub-tab) within the limits of your search.

Limits are chosen using the drop-down boxes shown as an arrow on the right inside of the box:

My Snapshots > Subject of Investigation > **New Page**

**Fiscal Year:** Choose the Fiscal Year... ▾

**State:** Choose the State... ▾

**Sponsoring Agency:** Choose the Sponsoring Agency... ▾

**Subject of Investigation:**

x 0001: Administration

You can only choose one factor at a time in these drop down boxes, so choose either one specific year or the “all” year option. To choose multiple years, you have to run a second analysis for the second year. Choose the State and Agency the same way.

The CRIS classifications you choose must be selected one at a time, but you can select as many as you need. They will show with a red **x** and the name, under the selection box.

After choosing your limits click the “Show Results” button. You must make a selection for each variable in order for the “Show Results” button to be active. An example of the result page is shown below.

After you show your results, the “Save as New Page” button appears allowing you to save your query.

The screenshot displays a web interface for data analysis. At the top, there is a breadcrumb trail: "My Snapshots > Subject of Investigation > New Page". Below this, there are several filter sections: "Fiscal Year" (set to "All"), "State" (set to "All"), "Sponsoring Agency" (set to "All"), and "Subject of Investigation" (with a search input field). Below the filters, there are two buttons: "Show Results" and "Save as New Page". A red arrow points from the "Save as New Page" button to the "Search Saved Pages" button at the top of the page. Below the filters, there is a table with the following data:

Subject of Investigation	Projects	Funding	Scientist FTE	% of Total Funding
0001: Administration	21	\$19,047,526	22.5	93%
9900: Unclassified	14	\$1,503,440	0.5	7%
Total		\$20,550,966	23.0	100%

Below the table, there are three donut charts. The first chart, titled "Projects", shows 60% for "0001: Administration" (blue) and 40% for "9900: Unclassified" (orange). The second chart, titled "Funding", shows 93% for "0001: Administration" (blue) and 7% for "9900: Unclassified" (orange). The third chart, titled "Scientist FTE", shows 100% for "0001: Administration" (blue). A red arrow points from the "Save as New Page" button to the "Search Saved Pages" button at the top of the page.

You can retrieve the search by clicking the name you choose for it using the “Search Saved Pages” (pull down tab) at the top of the query window.

When you click “Save as New Page”, a pop up box opens for you to give the search a name, and to add an optional description and keywords. After you save the search, new options will be available on the page as shown in the next screenshot. These are new options that allow you to make a default page for when you open this tab, reset the search, change the search and resave it, or rename the search. If you change a limit you are changing the search and must save it again to see all the options.

You can choose to “Share With Public” so others may also view your search results by looking on the “Search Saved Pages” pull down menu, or keep it private to yourself by not clicking the box.

This new feature allows you to “Delete Page” or “Make Default” the saved search on the current page.

The screenshot shows a search interface with the following elements:

- Header: My Snapshots > Subject of Investigation > Example Snapshot by unclassified SOI
- Search Saved Pages dropdown menu (orange button)
- Keywords: unclassified
- Fiscal Year: All (dropdown)
- State: All (dropdown)
- Sponsoring Agency: NIFA (dropdown)
- Subject of Investigation: (text input)
- Classification tags: x 0001: Administration, x 9900: Unclassified
- Buttons at the bottom: Create New Page (red), Show Results (dark blue), Save (green), Save as New Page (yellow)

The 'Search Saved Pages' dropdown menu is open, showing the following options:

- Created by: Laurie Fortis
- Share With Public
- Make Default (purple button)
- Delete Page (red button)

Red arrows point from the text above to the 'Share With Public' checkbox, the 'Make Default' button, and the 'Delete Page' button.

Other commands available using the buttons at the bottom of the window are discussed below:

“**Create New Page**” click to reset your search and start a new analysis page

“**Show Results**” if you want to change a limit or add another SOI, you can do that and then click this to refresh the results in the table and graphs below the search.

“**Save**” is used if you change your search and want to resave the page as the same name. This will replace the original search limits for the saved search.

“**Save as New Page**” is so you can save your changed search to a new saved search page with a new name. This will not replace the original saved search, which is left untouched, so both will appear under the Search Saved Pages drop town tab.

**For your convenience, a copy of the CRIS Classification and current Manual link is provided with a linked Table of Contents on the pages that follow.**

## CRIS Reference ([For more information click here to open the current CRIS Manual](#))

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## Appendix 1: Knowledge Area Descriptions with Definitions

[\(Click here to return to instructions\)](#)

### 001 Administration

(This is not an official CRIS classification, but a catch all for administrative funds)

## TOPIC I. NATURAL RESOURCES AND ENVIRONMENT

### SOIL

#### *KA 101. Appraisal of Soil Resources*

Work in support of soil mapping is concerned with identifying the important soil parameters for use in crop production, site-specific management, forest and range resource evaluation, housing developments, zoning, waste management, environmental urban planning, and other land uses. Soil surveys can also be used to show soil characteristics such as spatial and temporal variability, susceptibility to frost heave or slippage, depth to water table, depth to rock or other impermeable barriers, bearing strength, flood hazard, and soil erosion potential that affect suitability of a site for specific uses.

### ***KA 102. Soil, Plant, Water, and Nutrient Relationships***

This knowledge area is concerned with the chemical and physical nature of interrelationships among soils, plants, water, and nutrients. The objective is to improve, maintain, or restore the inherent production capability of soils.

### ***KA 103. Management of Saline and Sodic Soils and Salinity***

This area is concerned with injurious accumulations of salts that may occur in the root zone of soil because salts move upward in the soil with water and are left behind as the water evaporates. Work in this area also concerns salts that can be leached downward to the groundwater or to a drainage system as the result of heavy rainfall or irrigation, as well as salinity and brackish water problems that may occur in seaboard areas.

### ***KA 104. Protect Soil from Harmful Effects of Natural Elements***

This work focuses on protection of soils from impairment as a result of natural events.

## **WATER**

### ***KA 111. Conservation and Efficient Use of Water***

Work in this area attempts to increase efficiency in collecting, storing, conveying, using, and reusing available water resources.

### ***KA 112. Watershed Protection and Management***

This area is intended to focus on soil and water management problems at whole watershed scales, as opposed to problems of more localized scale. These watersheds include the cropland of the U.S. as well as range and forest lands. Work in this area can encompass one or more of the following: flood prevention systems, sediment control, wind and water erosion control, and management strategies oriented toward water yield and quality.

## **FOREST AND RANGE RESOURCES**

### ***KA 121. Management of Range Resources***

This area includes work on biological processes and ecological relationships, improved range management techniques, and better appraisals of range conditions for production of livestock forage, water yield, and wildlife habitat.

### ***KA 122. Management and Control of Forest and Range Fires***

Work in this area focuses on both wildfire and prescribed fire. It includes the development of new wildfire prevention methods, new technology for fuel hazard reduction, improved systems for wildfire prediction, detection, and effective attack and suppression technologies. Prescribed fire is used to maintain fire-dependent ecosystems without endangering resources and facilities. Work in this area focuses on where, when, and how to utilize prescribed fire.

### ***KA 123. Management and Sustainability of Forest Resources***

Work in this area focuses on the biology of forest plants and trees; ecology of forest ecosystems; tree breeding; forest nursery practices; silvicultural techniques to improve and regenerate forest stands; and assessing, modeling, monitoring, and forecasting forest ecosystems. Forest resources include both wood and non-wood products, often referred to as non-timber forest products or special forest products. Sustainable forest management criteria and indicators are outlined in international protocols.

### ***KA 124. Urban Forestry***

This work concentrates on the use of trees to improve or maintain the quality of urban and suburban environments and to enhance natural beauty through tree plantings. Tree plantings for special purposes include: visual screening, noise suppression, air quality improvement, shade, and beautification. Identification and development of species capable of living under adverse conditions such as smoke, air pollution, compacted soils, deficient or excessive moisture, and other unfavorable conditions associated with urban environments is included in this category.

### ***KA 125. Agroforestry***

Work in this area focuses on agroforestry practices that intentionally combine trees or shrubs with crop or livestock operations, or use trees at the agriculture/community interface to help create more integrated, diverse, and sustainable farms, non-industrial forests, ranches, and rural communities. Agroforestry practices are designed to incorporate the use of trees into agricultural settings to accomplish social, economic, and environmental objectives. The main types of agroforestry include alley cropping, riparian buffers, forest farming, windbreaks/shelterbelts, and silvopasture. Agroforestry practices often yield non-traditional tree and forest products such as mushrooms, boughs, medicinal plants, vines, and nuts.

## **NATURAL RESOURCES, GENERAL**

### ***KA 131. Alternative Uses of Land***

This area is concerned with evaluation of alternative uses of land to determine short- and long term benefits. Changes in land use in response to population growth, urban and suburban growth, recreational needs, agricultural and other factors affecting the fixed supply of land are included in this area.

### ***KA 132. Weather and Climate***

Work on the impact of weather and climate on agriculture and natural resources focuses on three tasks: (1) characterize existing climatic patterns and propose more effective ways of adjusting to these patterns, (2) specify modifications in management approaches that are desirable to farm, forest, and rangeland managers, and (3) learn how potential modifications affect agriculture or natural ecology.

### ***KA 133 Pollution Prevention and Mitigation***

Work in this area is concerned with preventing, alleviating, and mitigating pollution initiated by agricultural and forestry practices and its detrimental effects on agricultural plants, animals, soil, air, water, and humans. Potential pollutants include: organic pesticides, radio-nuclides, fertilizer chemicals, growth regulating chemicals, animal and crop wastes, mulching materials, pathogenic microorganisms, heavy metals, salts used on roads for de-icing, and allergens. This work focuses on agricultural production, not on health hazards to humans, which are covered in KA 723, Hazards to Human Health and Safety.

### ***KA 134. Outdoor Recreation***

Work on outdoor recreation focuses on the management of lands for recreation and the coordination of this use with other land resources. It involves problems in management of physical resources, as well as socioeconomic relationships of users of the resources.

### ***KA 135. Aquatic and Terrestrial Wildlife***

This area focuses on invertebrate and vertebrate animal species that occur naturally in forest, range, and agricultural lands and waters, and marine environments. Work includes determining biological and ecological requirements of species, factors influencing population dynamics, interspecific relationships, methods for

maintaining and enhancing habitats, and management approaches for sustaining wildlife harvests while maintaining population, species, and community viability.

#### ***KA 136. Conservation of Biological Diversity***

In a natural resources context, work on biological diversity (biodiversity) conservation focuses on the description, measurement, assessment, and management of plant and animal variation in nature. It includes diversity at the genetic, species, and ecosystem levels in forest, range, and agriculturally-influenced ecosystems. The objective is to preserve, enhance, and restore natural biodiversity to levels compatible with societal uses of natural resources.

### **AIR**

#### ***KA 141. Air Resource Protection and Management***

This knowledge area focuses on investigations that quantify emissions, fate and transport, and practices to mitigate emissions of particulate matter and gases from agriculture and forestry practices. Work includes emissions from animal feeding operations, controlled burning, and tillage, and volatilization/transport to the atmosphere of naturally occurring or anthropogenic chemical compounds.

## **TOPIC II. PLANTS AND THEIR SYSTEMS**

### **PLANT PRODUCTION**

#### ***KA 201. Plant Genome, Genetics, and Genetic Mechanisms***

This area focuses on development and dissemination of fundamental information in plant genetics and plant breeding technology with the purpose of making plant breeding more efficient and productive, and includes related technologies such as genomic database management.

#### ***KA 202. Plant Genetic Resources***

This area focuses on discovery, acquisition, preservation, characterization, and development of plant genetic resources for plant production or protection. Both in-situ and ex-situ preservation methods are included, as well as preservation of species and within-species variation.

#### ***KA 203. Plant Biological Efficiency and Abiotic Stresses Affecting Plants***

This area focuses on understanding and improving plant productivity and quality affected by reduced inputs or abiotic stresses such as water, temperature, or nutrients.

#### ***KA 204. Plant Product Quality and Utility (Preharvest)***

This area focuses on maintaining or improving specific quality or utility parameters within biological material before harvest.

#### ***KA 205. Plant Management Systems***

This area focuses on integration of production practices into an integrated system for managing annual and perennial plant population densities, fertility, irrigation, precision agriculture, and other cultural practices in an efficient and effective manner.

### ***KA 206. Basic Plant Biology***

This area focuses on inquiry into fundamental processes and mechanisms in plants and model organisms basic to the life of the plant.

## **PLANT PROTECTION**

### ***KA 211. Insects, Mites, and Other Arthropods Affecting Plants***

This area focuses on yield and quality affected by indigenous and exotic insects, mites, and other arthropods (including bees and other pollinators).

### ***KA 212. Pathogens and Nematodes Affecting Plants***

This area focuses on yield and quality affected by indigenous and exotic bacteria, fungi, nematodes, viruses, and other pathogens.

### ***KA 213. Weeds Affecting Plants***

This area focuses on yield and quality affected by competition from indigenous and exotic weeds, including aquatic weeds and parasitic plants.

### ***KA 214. Vertebrates, Mollusks, and Other Pests Affecting Plants***

This area focuses on yield and quality affected by indigenous and exotic vertebrate pests (including birds and mammals), mollusks (including slugs and snails), and other plant pests.

### ***KA 215. Biological Control of Pests Affecting Plants***

This area focuses on classical, augmentative, or inundative use of natural enemies (including microbial biological control agents) to manage plant pests (pathogens, insects, mites, nematodes, weeds, vertebrates, etc.).

### ***KA 216. Integrated Pest Management Systems***

This area focuses on the integration of one or more control tactics into a system for managing single plant pests or pest complexes in an economically, socially, and environmentally sound manner.

## **TOPIC III. ANIMALS AND THEIR SYSTEMS**

### **ANIMAL PRODUCTION**

#### ***KA 301. Reproductive Performance of Animals***

Work to enhance reproductive performance of agriculturally important animals involves factors that control reproduction or provide methodologies to improve reproductive efficiency, including efforts to control puberty, ovarian function and cycles, gamete formation and maturation, fertilization, establishment and maintenance of pregnancy, placental function, fetal development and growth, and parturition.

#### ***KA 302. Nutrient Utilization in Animals***

Work in this area focuses on efforts to enhance the efficiency of nutrient utilization for improving animal productivity, including molecular and cellular biology of nutrient utilization, digestion, metabolic processes, and feed processing technology.

### ***KA 303. Genetic Improvement of Animals***

Work in this area focuses on improving production efficiency of agriculturally important animal species through more effective genetic improvement programs utilizing the development and application of expanded genetic information and technology encompassing molecular, quantitative, and statistical genetics.

### ***KA 304. Animal Genome***

Work in this area involves the application of new developments in molecular biology to map and understand the genome of agriculturally important animal species.

### ***KA 305. Animal Physiological Processes***

This area includes work on the fundamental physiological processes within the animal at the organismal, organ system, cellular, and molecular level.

### ***KA 306. Environmental Stress in Animals***

Work in this area involves stresses from the effects of climate, handling, and other environmental factors that decrease productivity, including extremes in temperature, humidity, air movement, and noise that may lead to lower reproduction, reduced feed efficiency, anorexia, reduced disease resistance, and increased mortality.

### ***KA 307. Animal Management Systems***

Work in this area focuses on the development and application of management systems, including computer technology/models and analytic methods, to improve management decisions and enhance animal production systems.

### ***KA 308. Improved Animal Products (Before Harvest)***

This area includes work to improve the composition and quality of animal products to reflect consumer preferences.

## **ANIMAL PROTECTION**

### ***KA 311. Animal Diseases***

This area includes work on animal diseases that represent a threat to the production of an adequate and wholesome supply of animal products from livestock, poultry, and fish.

### ***KA 312. External Parasites and Pests of Animals***

This area includes work on pests and external parasites, including insects, ticks, mites, and other parasitic organisms that reduce animal productivity. This area also includes work on more cost effective methods of control.

### ***KA 313. Internal Parasites in Animals***

This area includes work on internal parasites such as various kinds of worms, flukes, and protozoa. Emphasis is on reducing losses, including those due to mortality, reduced yield and condemnation of meat, feed wastage, and cost of drugs.

### ***KA 314. Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals***

This area focuses on reduction of losses in productivity in livestock, poultry, and fish operations due to toxic chemicals, pesticides, poisonous plants, predators, ingestion of metal and other foreign bodies, and other hazards.

### ***KA 315. Animal Welfare/Well-Being and Protection***

Work in this area focuses on developing effective animal care and use programs, and information related to and contributing to the welfare, well-being, and proper stewardship of food animals.

## **TOPIC IV. AGRICULTURAL, NATURAL RESOURCE, AND BIOLOGICAL**

### **ENGINEERING**

#### ***KA 401. Structures, Facilities, and General Purpose Farm Supplies***

Work includes the design, construction, and cost of facilities for animals, agricultural products, agricultural inputs, equipment, and other materials. The properties and behavior of animals, products, equipment, and materials while in various facilities and during transport or processing is a part of this work.

#### ***KA 402. Engineering Systems and Equipment***

This work includes mechanization to increase efficiency and decrease labor requirements in agricultural and forestry production such as: grain, fruit and vegetable crops, timber, livestock, poultry, fish, and other animals. This includes machinery and power units for the pre- and post-harvest of various animal and plant products.

#### ***KA 403. Waste Disposal, Recycling, and Reuse***

Work in this area includes all aspects of collecting, storing, transporting, treating, recycling, and utilizing waste products from agriculture, forestry, and other origins. The development of value-added or alternative products from waste products is included.

#### ***KA 404. Instrumentation and Control Systems***

This work includes instrumentation and information systems that are important elements in all aspects of pre- and post-production agriculture. Sensors for detecting, monitoring, and processing of collected data and those that can provide improved control of the production and processing of biological materials, non-biological materials, and biohazards are included in this area.

#### ***KA 405. Drainage and Irrigation Systems and Facilities***

Water management, to include surface and subsurface drainage and all irrigation systems, is part of this work. Equipment, system design, theory, modeling, installation, operation, and maintenance of drainage and irrigation systems for more efficient use of land, water, and capital resources are included.

## **TOPIC V. FOOD AND NON-FOOD PRODUCTS: DEVELOPMENT, PROCESSING, QUALITY, AND DELIVERY**

### **FOOD**

#### ***KA 501. New and Improved Food Processing Technologies***

Work in this area focuses on development or improvement of methods, techniques, or processes to maintain or improve quality or functionality, stabilize or preserve foods, or prepare foods for further processing.

### ***KA 502. New and Improved Food Products***

This area includes work to improve or develop new food products. Work also includes development of knowledge to influence quality and functionality of foods in complex food systems.

### ***KA 503. Quality Maintenance in Storing and Marketing Food Products***

Work in this area includes understanding and minimizing food quality losses during preservation, storage, distribution, and marketing to enhance the quantity and quality of foods delivered to consumers, minimize food costs, and enhance profitability for food producers and marketers.

### ***KA 504. Home and Commercial Food Service***

This area of work focuses on development of guidelines to ensure the wholesomeness, nutritional value, taste, and appearance of commercially and home prepared foods. Work also includes development of approaches to improve preparation, handling, and storage of food that reduce waste, assure quality, and increase consumer appeal.

## **NON-FOOD**

### ***KA 511. New and Improved Non-Food Products and Processes***

Work in this area includes agricultural commodities used in consumer products such as paper, textiles, biofuels, adhesives, paints, and other biobased products. This area also includes work on animal byproducts as raw materials for the textile, leather, soap, feed, pharmaceutical, and other industries. Work also includes alternate, non-food uses for agricultural commodities and timber products to expand markets for these products, yielding new, improved, or less expensive consumer products and providing additional sources of income to producers, processors, and marketers.

### ***KA 512. Quality Maintenance in Storing and Marketing Non-Food Products***

This area of work focuses on maintenance of quality of feeds, seeds, and other non-food agricultural and forest products during handling, storage, and marketing.

## **TOPIC VI. ECONOMICS, MARKETS, AND POLICY**

### ***KA 601. Economics of Agricultural Production and Farm Management***

This work focuses on economic choices farmers and ranchers make to access and allocate resources for the production of commodities, services, and products. These resources help farmers and ranchers to minimize production risk and optimize farm income.

### ***KA 602. Business Management, Finance, and Taxation***

This work focuses on the management and administrative techniques applied to farming, agricultural business, and other businesses and enterprises to enhance planning, decision making, and resource use. These techniques help businesses make effective financial decisions, stay in the marketplace over the long term, and increase profitability. It includes the analysis of effects of taxation on profitability.

### ***KA 603. Market Economics***

This work focuses on activities that foster understanding of markets, productivity, agricultural competitiveness, and interregional trade, and give insight to the role and function of markets and their regulation primarily from the macroeconomic (industry) perspective.

#### ***KA 604. Marketing and Distribution Practices***

This work concerns the distribution of products, goods, and services, the practices of buying and selling, and the development and improvement of markets primarily from the microeconomic (firm) perspective.

#### ***KA 605. Natural Resource and Environmental Economics***

This work focuses on understanding economic relationships, decisions, and impacts relating to the management and use of public and private natural resources, and the environment. Work in this area also focuses on the economics of improving the efficiency of agricultural, forest, and rangeland use while minimizing negative impacts on the environment.

#### ***KA 606. International Trade and Development***

This work focuses on the economic components of international trade and development, trade performance of sectors of the U.S. economy and that of other countries, globalization, barriers to trade, and trade and development impacts, especially as it relates to policy decisions. There is a strong focus on the global market economy, specifically the interaction between domestic and international market economies.

#### ***KA 607. Consumer Economics***

This work provides insight and understanding into the demands, preferences, behavioral responses, and needs of individuals and consumers. This work provides insight and understanding about how consumer choice drives market economies, and how consumer policy, advertising, and other market forces influence consumer demand.

#### ***KA 608. Community Resource Planning and Development***

This work provides understanding about community needs and preferences by providing local leaders and organizations the information, skills, and decision-making tools to help understand problems, identify opportunities, and plan for renewal and growth.

#### ***KA 609. Economic Theory and Methods***

This work includes the development of economic theory and methodology to improve the knowledge base in a variety of topics.

#### ***KA 610. Domestic Policy Analysis***

This work focuses on the economic and social impacts of domestic programs and policies, including the effect of government actions on the U.S. The work in this area analyzes the long term effects of government actions, which influences how the U.S. develops and implements policies.

#### ***KA 611. Foreign Policy and Programs***

This work focuses on U.S. foreign policy goals, assessing the effectiveness and impacts of implemented policies and the interactions between foreign and domestic policies, and global implications.

## **TOPIC VII. HUMAN NUTRITION, FOOD SAFETY, AND HUMAN HEALTH AND WELL-BEING**

### **HUMAN NUTRITION**

#### ***KA 701. Nutrient Composition of Food***

This area is concerned with the determination of the quantities of nutrients and other food components in food; development of analytical methods; development and maintenance of data banks of information on food composition; development of software and other systems to facilitate use of data on food composition, including recipe calculations; development and evaluation of educational materials and strategies on food composition; and dissemination of information on food composition for professionals, students, and the public.

#### ***KA 702. Requirements and Function of Nutrients and Other Food Components***

This area concerns fundamental knowledge about relationships of food eaten by people to their physical development, physical activity, and mental status, and to the maintenance of optimal health. It is concerned with defining nutrient requirements and functions throughout the life span and in response to the environment. Functions include cellular and molecular regulation of gene expression by specific nutrients. This area is also concerned with development of methods to quantify relationships of nutritional status to well-being to provide a scientific basis for establishing Dietary Reference Intakes and Dietary Guidelines. Programs on nutrient requirements and function are concerned with the development and evaluation of education activities, strategies, and materials, and with the dissemination of related information for professionals, students, and the public.

#### ***KA 703. Nutrition Education and Behavior***

This area is concerned with assessment of food intake and dietary patterns, the factors that influence food intake and dietary patterns, the interrelationships among these factors, and with the assessment of food and nutrient intake in relation to nutrient requirements, dietary guidance, and food plans. The focus is frequently on population groups at nutritional risk and on the factors that promote or hinder healthful food choices in these groups. Programs on dietary standards, guidance, food guides, and behavior change are concerned with the development, evaluation, and dissemination of education activities and strategies for professionals, students, and the public.

#### ***KA 704. Nutrition and Hunger in the Population***

This area is concerned with food insecurity, insufficiency, and hunger in the population. Included are the development of analytical methods and pro-active attempts at hunger reduction through food banks, communities organizing to gain farmers markets, community gardens, gardening, food buying clubs, food recovery, and gleaning.

### **FOOD SAFETY**

#### ***KA 711. Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources***

Work on toxic residues of agricultural origin is conducted to determine the levels and circumstances under which chemicals may be safely used in production of plant and animal food products. There is widespread public concern over the potential hazards created by the use or introduction of chemicals in the production of farm products. The focus of work under this KA is on human health.

### ***KA 712. Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins***

This area includes work on pathogenic foodborne microorganisms and parasites in raw, minimally processed, or inadequately processed and preserved foods. Work on mycotoxins and natural and induced toxicants in foods--including allergens and seafood toxins--is also included. The focus of work under this KA is on human health.

## **HUMAN HEALTH**

### ***KA 721. Insects and Other Pests Affecting Humans***

This area includes work on insects, ticks, mites, and other pests that are an annoyance to humans. The emphasis is on developing safe, effective, and economical ways of controlling these pests.

### ***KA 722. Zoonotic Diseases and Parasites Affecting Humans***

Work in this area concerns animal diseases and parasites such as anthrax, encephalitis, leptospirosis, and rabies that pose potential threats to human health. Included are studies on epidemiology, risk assessment, biosecurity, and evaluation of efficacy of control programs for disease vectors.

### ***KA 723. Hazards to Human Health and Safety***

Work in this area is concerned with reducing hazards to the health, safety, and biosecurity of people involved in the production, processing, and distribution of agricultural and forest products. This area includes safety aspects of agricultural injuries and illnesses and methods for effective intervention. The emphasis is on immediate hazards to humans.

### ***KA 724. Healthy Lifestyle***

This area concerns activities related to healthy lifestyles, including maintenance of social, emotional, and physical health. The focus is on physical activity, exercise, stress management, and health-related practices including screening, immunization, and preventive care. The work in this area frequently involves population groups at risk and the factors that promote or hinder healthy lifestyles in these groups. Work is also concerned with development of a theoretical basis for behavior related to healthy lifestyles. Education and extension programs on healthy lifestyles and behavior change are concerned with the development, evaluation, and dissemination of education programs and strategies for professionals, students, and the public.

## **TOPIC VIII. FAMILIES, YOUTH, AND COMMUNITIES**

### ***KA 801. Individual and Family Resource Management***

Work in this area provides an understanding of how individuals and families obtain and use resources of time, money, and human capital to achieve their standard of living and overall quality of life. This area is also concerned with factors affecting the decision-making process, such as availability of resources, life events, living patterns, values, goals, interests, and attitudes of families, and external forces such as public issues, policies, and programs.

### ***KA 802. Human Development and Family Well-Being***

Work on family and human development provides an understanding of the social, cognitive, emotional, and physical development of individuals and families over the human lifespan. The focus is on family and life cycle studies. Work in this area also provides a better understanding of family systems, family performance, and well-being.

### ***KA 803. Sociological and Technological Change Affecting Individuals, Families, and Communities***

Work in this area provides an understanding of the technological, demographic, and social changes occurring in society. Work also provides an understanding of the current and historic ways in which individuals, families, and communities cope with sociological and technological change, and includes activities that extend this knowledge to the population.

### ***KA 804. Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures***

Work on social, aesthetic, and functional aspects of apparel and textiles provides a better understanding of the interface among producers, retailers, and consumers. This area also provides knowledge about the products of agriculture used in apparel and textiles and on factors that affect consumer choice. Work includes the social, economic, and design aspects of housing and other structures.

### ***KA 805. Community Institutions, Health, and Social Services***

This work addresses the development, quality, and functioning of community institutions and social services. Work in this area enhances the scope, scale, and effectiveness of public and private community institutions and services, including emergency preparedness and response, and public safety.

### ***KA 806. Youth Development***

Work in this area includes programs and activities that promote positive youth development, including 4-H. These activities extend knowledge to youth and convey a sense of belonging, teach life skills, and provide opportunities for mastery, competence, and independence. This work also includes a focus on the social and emotional development of program participants.

## **TOPIC IX. PROGRAM AND PROJECT SUPPORT AND ADMINISTRATION, EDUCATION AND COMMUNICATION**

### ***KA 901. Project and Program Design, and Statistics***

This work focuses on program and project design and evaluation, experimental design, surveys, sampling, and statistical analysis.

### ***KA 902. Administration of Projects and Programs***

This work is focused on efficiency and effectiveness of research, education, and extension methods and proposals. Included in this is work on maximizing researcher, educator, and facility productivity, and on coordinating teaching, research, and extension efforts among scientists and educators throughout the nation.

### ***KA 903. Communication, Education, and Information Delivery***

This area of work focuses on educational processes, needs, and methods to achieve educational goals. Work includes development, use, and assessment of communication, information delivery, and technology transfer methods and systems. List topic- or discipline specific education under the appropriate KA.

### ***KA 990 Unclassified***

This is not an official CRIS classification, but a designation in LMD of a 'catch all' KA for projects not classified)

## **Appendix 2: Subject of Investigation Codes**

[\(Click here to return to instructions\)](#)

### *ADMINISTRATION*

0001 Unofficial designation in LMD signifying funds are classified as Admin funding by the FDC used for the project.

## **NATURAL RESOURCES AND THEIR PRODUCTS**

### **Soil and Land**

0110 Soil

0120 Land

0199 Soil and land, general

### **Water**

0210 Water resources

### **Watersheds and River Basins**

0310 River basins

0320 Watersheds

0330 Wetland and riparian systems

0399 Watersheds and river basins, general

### **Atmosphere**

0410 Air

0420 Weather

0430 Climate

0440 Solar radiation

0499 Atmosphere, general/other

### **Recreational Resources**

0510 Wilderness

0520 Campgrounds and picnic areas

0530 Parks and urban green space

0599 Recreational resources, general/other

### **Trees, Forests, and Forest Products (excluding edible tree nut crops)**

0610 Conifer forests of the North

0611 Conifer forests of the South

0612 Conifer forests of the West

0613 Mixed conifer-broadleaf forests

0620 Broadleaf forests of the North

0621 Broadleaf forests of the South

0622 Broadleaf forests of the West

0630 Chaparral and shrub lands

0640 Tropical forests

0650 Wood and wood products

0660 Paper and pulp derived products

0670 Short rotation woody crops, including holiday trees

0680 Other products of the forest

0699 Trees, forests, and forest products, general

## **Rangelands and Grasslands**

- 0710 Desert and semidesert shrub land and shinnery
- 0720 Pinyon-juniper
- 0730 Mountain grasslands, meadow, and alpine
- 0780 Grasslands, other
- 0790 Rangelands, other
- 0799 Rangelands and grasslands, general

## **Wildlife and Natural Fisheries Management, Endangered Species**

- 0810 Finfish
- 0811 Shellfish
- 0812 Fish habitats
- 0819 Natural fisheries, other
- 0820 Wild birds
- 0830 Wild animals
- 0840 Fur-bearing animals
- 0850 Wildlife habitats
- 0860 Endangered species
- 0899 Wildlife and natural fisheries, general/other

## **PLANTS AND THEIR PRODUCTS**

### **Citrus**

- 0910 Grapefruit
- 0920 Orange
- 0930 Lemon
- 0999 Citrus, general/other

### **Tropical/Subtropical Fruit**

- 1010 Banana
- 1020 Pineapple
- 1030 Papaya
- 1040 Mango
- 1050 Date
- 1060 Kiwi
- 1099 Tropical/subtropical fruit, general/other

### **Deciduous and Small Fruits**

- 1110 Apple
- 1111 Apricot
- 1112 Cherry
- 1113 Nectarine
- 1114 Peach
- 1115 Pear
- 1116 Plum
- 1119 Deciduous tree fruits, general/other
- 1120 Blueberry
- 1121 Cranberry
- 1122 Strawberry
- 1123 Raspberry
- 1129 Berries and cane fruits, general/other
- 1130 Table grapes

- 1131 Wine grapes
- 1132 Raisin grapes
- 1139 Grapes, general/other
- 1199 Deciduous and small fruits, general/other

### Edible Tree Nuts

- 1210 Filbert
- 1211 Pecan
- 1212 Almond
- 1213 Walnut
- 1219 Edible tree nuts, general/other
- 1310 **Potato**

### Vegetables

- 1410 Beans (dry)
- 1411 Beans (fresh, fresh-processed)
- 1412 Peas (dry)
- 1413 Peas (fresh, fresh-processed)
- 1414 Lentil
- 1419 Leguminous vegetables, general/other
- 1420 Melons (includes cantaloupe, muskmelon, watermelon)
- 1421 Cucumber
- 1429 Cucurbits, other (includes pumpkin, squash, gourd)
- 1430 Greens and leafy vegetables (includes endive, lettuce, spinach, turnip greens, celery, rhubarb, parsley, asparagus)
- 1440 Cole crops (includes cabbage, kale, broccoli, brussels sprouts, cauliflower, kohlrabi)
- 1450 Sweet potato
- 1451 Onion, garlic, leek, shallot
- 1452 Carrot
- 1453 Yam
- 1454 Taro
- 1455 Cassava (or manioc)
- 1459 Rhizomes, tubers, bulbs, and root crops, general/other (for potato use 1310)
- 1460 Tomato
- 1461 Peppers
- 1462 Eggplant
- 1469 Solanaceous and related crops, general/other (for potato use 1310)
- 1470 Mushrooms and other edible fungi
- 1480 Sweetcorn
- 1499 Vegetables, general/other

### Grain Crops

- 1510 Corn (for sweetcorn use 1480)
- 1511 Popcorn
- 1520 Grain sorghum
- 1530 Rice
- 1540 Hard red winter wheat
- 1541 Hard red spring wheat
- 1542 Soft red wheat
- 1543 Soft white wheat (includes club, western)
- 1544 Hard white wheat
- 1545 Durum wheat

1549 Wheat, general/other  
1550 Barley  
1560 Oats  
1570 Rye  
1599 Grain crops, general/other (includes buckwheat, millet, triticale)

### **Pasture and Forage Crops**

1610 Pasture  
1620 Warm season perennial grasses (includes dallisgrass, bluestems, bermudagrass)  
1621 Cool season perennial grasses (includes bluegrass, bromegrass, fescue, orchardgrass, perennial ryegrass, timothy, wheatgrass)  
1629 Perennial grasses, other  
1630 Summer annual grasses (includes forage sorghums, sudangrass, sorghumsudangrass hybrids)  
1631 Winter annual grasses (includes annual ryegrass)  
1639 Annual grasses, other  
1640 Alfalfa  
1641 Trefoil  
1642 Red clover  
1643 Crownvetch  
1644 Winter annual legumes (includes subterranean clover, arrowleaf clover)  
1649 Forage legumes, general/other  
1699 Pasture and forage crops, general/other

### **Fiber Crops**

1710 Upland cotton  
1711 Long fiber cotton  
1719 Cotton, other  
1720 Kenaf  
1730 Hemp  
1740 Ramie  
1750 Agave  
1799 Fiber crops, general/other

### **Oilseed and Oil Crops**

1810 Cottonseed (for meal, oil, etc.)  
1820 Soybean  
1830 Peanut  
1840 Castor  
1841 Crambe  
1842 Flax  
1843 Safflower  
1844 Sunflower  
1845 Jojoba  
1846 Coconut  
1847 Palm  
1848 Canola  
1849 Cuphea  
1850 Lesquerella  
1851 Meadowfoam  
1852 Rape  
1853 Sesame  
1854 Chinese tallow

1855 Tung  
1899 Oilseed and oil crops, general/other

### **Tobacco**

1910 Flue-cured tobacco  
1920 Burley tobacco  
1930 Cigar-type tobacco  
1999 Tobacco, general/other

### **Sugar Crops**

2010 Sugar beet  
2020 Sugar cane  
2030 Sweet sorghum  
2099 Sugar crops, general/other

### **Ornamentals and Turf**

2110 Ornamental trees and shrubs  
2120 Herbaceous perennials and decorative greens  
2121 Cut flowers, foliage, and greens  
2122 Potted plants  
2123 Bedding/garden plants  
2129 Florist crops, other  
2130 Turf (includes bentgrass, bermudagrass, bluegrass, dichondra, fescue, ryegrass, zoysia)  
2140 Ground covers  
2150 Aquatic plants  
2160 Arboreta and botanical gardens  
2199 Ornamentals and turf, general/other (includes cacti)

### **Miscellaneous and New Crops**

2210 Chemurgic crops  
2220 Medicinal crops, non-narcotic  
2221 Narcotic plants  
2230 Hops  
2231 Mint  
2232 Coffee  
2233 Cocoa  
2234 Tea  
2235 Herbs and spices  
2239 Flavoring and beverage plants, general/other  
2240 Guayule  
2241 Hevea  
2242 Gums  
2249 Rubber, gum, and resin plants, general/other  
2299 Miscellaneous and new crops, general/other  
2300 **Weeds**

### **Plants**

2410 Cross-commodity research--multiple crops  
2420 Noncrop plant research  
2499 Plant research, general

## **ANIMALS, INCLUDING INVERTEBRATES, AND THEIR PRODUCTS**

### **Bees, Honey, and Other Pollinators**

- 3010 Honey bees
- 3020 Honey and honey products
- 3030 Non-honey apiary products
- 3090 Other Pollinators
- 3099 Bees, honey, and other pollinators, general

### **Invertebrates**

- 3110 Insects
- 3120 Spiders, mites, ticks, and other arthropods
- 3130 Nematodes
- 3199 Invertebrates, general/other

### **Poultry**

- 3210 Egg-type chicken, live animal
- 3220 Meat-type chicken, live animal
- 3230 Turkey, live animal
- 3240 Duck and goose, live animal
- 3250 Ratites (e.g., ostrich, emu, rhea), live animal
- 3260 Poultry meat
- 3270 Eggs
- 3280 Other poultry products
- 3299 Poultry, general/other

### **Beef Cattle**

- 3310 Beef cattle, live animal
- 3320 Meat, beef cattle
- 3330 Other beef cattle products
- 3399 Beef cattle, general/other

### **Dairy Cattle**

- 3410 Dairy cattle, live animal
- 3420 Butter
- 3430 Cheese
- 3440 Meat, dairy cattle
- 3450 Milk
- 3460 Ice cream
- 3470 Other dairy cattle products
- 3499 Dairy cattle, general/other

### **Swine**

- 3510 Swine, live animal
- 3520 Meat, swine
- 3530 Other swine products
- 3599 Swine, general/other

### **Sheep and Wool**

- 3610 Sheep, live animal
- 3620 Meat, sheep
- 3630 Wool fiber

3699 Sheep and wool, general/other

### **Cultured Aquatic Animals**

3710 Catfish  
3711 Trout  
3712 Salmon  
3713 Striped bass  
3714 Tilapia  
3715 Baitfish (minnows and shiners)  
3716 Ornamental finfish  
3719 Other cultured finfish  
3720 Crawfish  
3721 Marine shrimp  
3722 Freshwater shrimp  
3723 Oysters  
3724 Clams and mussels  
3725 Ornamental shellfish  
3729 Other cultured shellfish  
3799 Cultured aquatic animals, general/other

### **Other Animals**

3810 Horses, ponies, and mules  
3820 Goats, meat and mohair  
3830 Pets (companion animals)  
3840 Laboratory animals  
3899 Other animals, general

### **Animals**

3910 Cross-commodity research--multiple animal species  
3999 Animal research, general

## **MICROORGANISMS**

4010 Bacteria  
4020 Fungi (includes yeast)  
4030 Viruses  
4040 Viroids, mycoplasmas, spiroplasmas, etc.  
4050 Protozoa  
4099 Microorganisms, general/other

## **FOOD AND MANUFACTURED RESOURCES**

5010 **Food** (not readily associated with specific plant and animal products)

### **Clothing and Textiles**

5110 Clothing/apparel  
5120 Textiles  
5199 Clothing and textiles, general

### **Agricultural Supplies**

5210 Fertilizers  
5220 Pesticides (includes herbicides, insecticides, fungicides, etc.)

5230 Feed and feed additives  
5240 Seeds and other plant propagules  
5299 Agricultural supplies, general/other

### **Structures, Facilities, and Equipment**

5310 Machinery and equipment  
5320 Houses (human residences), furniture, household equipment, non-textile furnishings  
5330 Farm structures and related facilities  
5340 Nonfarm structures and related facilities, including those used in marketing, storing, processing, and distributing functions, and for recreational uses  
5350 Domestic and community water supply facilities and systems  
5360 Drainage and irrigation facilities and systems  
5370 Sewage and waste disposal facilities and systems  
5399 Structures, facilities, and equipment, general/other

## **HUMAN RESOURCES, ORGANIZATIONS, AND INSTITUTIONS**

### **People and Communities**

6010 Individuals (as workers, consumers, members of society)  
6020 The family and its members  
6030 The farm as an enterprise  
6040 Real estate  
6050 Communities, areas, and regions, including states and their institutions and organizations  
6099 People and communities, general/other

### **Economy**

6110 Economy of the United States and sectors thereof  
6120 International economy and sectors thereof  
6199 Economy, general/other

### **Marketing**

6210 Farmer cooperatives  
6220 Marketing, processing, and supply firms other than cooperatives  
6230 Marketing systems and sectors thereof  
6299 Marketing, general/other

## **OTHER TECHNOLOGIES**

(Use the following classifications only if the research is not targeted at one or more previously listed specific subjects of investigation)

7010 Biological Cell Systems  
7110 Research on research management (not research management per se)

### **Research Equipment and Methods**

7210 Remote sensing equipment and technology  
7220 Sensory evaluation/analysis methods (human senses)  
7299 Research equipment and methods, general/other  
7310 Experimental design and statistical methods  
7410 General technology

9900 Unofficial designation in LMD for research without an SOI designation

## Appendix 3: Field of Science Codes

[\(Click here to return to instructions\)](#)

### Biological

1000 Biochemistry and biophysics  
1010 Nutrition and metabolism  
1020 Physiology  
1030 Cellular biology  
1040 Molecular biology  
1050 Developmental biology  
1060 Biology (whole systems)  
1070 Ecology  
1080 Genetics  
1081 Breeding (updated 2013, previously contained in 1080)  
1090 Immunology  
1100 Bacteriology  
1101 Virology  
1102 Mycology  
1103 Other microbiology (includes protozoology, phycology, etc.)  
1110 Parasitology  
1120 Nematology  
1130 Entomology and acarology  
1140 Weed science (noxious, invasive, and introduced)  
1150 Toxicology  
1160 Pathology  
1170 Epidemiology  
1180 Pharmacology  
1190 Limnology

### Physical

2000 Chemistry  
2010 Physics  
2020 Engineering  
2030 Geology  
2040 Mineralogy  
2050 Hydrology  
2060 Geography  
2061 Pedology  
2070 Meteorology and climatology  
2080 Mathematics and computer sciences  
2090 Statistics, econometrics, and biometrics

### Social and Behavioral

3000 Anthropology  
3010 Economics  
3020 Education  
3030 Information and communication  
3040 History  
3050 Law  
3060 Political science  
3070 Psychology  
3080 Sociology  
3090 Sensory science (human senses)  
3100 Management  
3110 Art and architecture  
3111 Landscape architecture

## **Acronym Appendix:**