

## Summary of Research, Scholarly and Creative Activities, and Discovery (RSCAD) Strengths (By Criteria of Strength)

Criteria of Strength refer to characteristics or defining features that can be used as a basis for identifying college areas of RSCAD strength. For more detail, please see the College RSCAD Reports (<http://www.k-state.edu/2025/initiatives/rscad/>). Strengths are listed in the order as they were submitted by each college.

<b>Criteria 1</b>	
<b>Addresses current or emerging state, regional, national, and/or global needs</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Insects/other pests ▪ Water Resources
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Insect biochemistry/molecular biology/vector biology ▪ Grassland ecology ▪ Evolutionary biology ▪ Infectious disease/innate immunity ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Atomic, molecular, optical physics ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ Science/mathematics education research ▪ Energy sector research ▪ Water quality and quantity ▪ GIS, remote sensing, and geospatial modeling ▪ Novel statistical modeling ▪ I/O psychology ▪ Security studies ▪ Rural history/ sociology ▪ Public administration ▪ Strategic and crisis communications ▪ Communications and community development ▪ Economics
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling
Education	▪ Investments and Market Microstructure ▪ Research and practice in teacher preparation for English language learners ▪ Research in mathematics education and practice in mathematics teacher education. ▪ Academic Advising ▪ School Leadership
Engineering	▪ Water ▪ Big Data/High Performance Computing ▪ Cybersecurity ▪ Nuclear Engineering ▪ Advanced Materials, Manufacturing and Processes ▪ Energy and Power ▪ Transportation ▪ Environmental Applications ▪ Sensors, Systems and Networks ▪ Biomedical Applications ▪ STEM Education
Human Ecology	▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Healthy Relationships ▪ Food Safety ▪ Food, Global Health, and Security ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Unmanned Aircraft System Airworthiness Certification ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

<b>Criteria 2</b>	
<b>High impact (societal, economy, productivity)</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Insects/other pests ▪ Water Resources ▪ Food and Feed Safety
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Insect biochemistry/molecular biology/vector biology ▪ Grassland ecology ▪ Evolutionary biology ▪ Infectious disease/innate immunity ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Atomic, molecular, optical physics ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ Science/mathematics education research ▪ Energy sector research ▪ Water quality and quantity ▪ GIS, remote sensing, and geospatial modeling ▪ Novel statistical modeling ▪ Behavioral neuroscience ▪ Cognitive/ human factors/social psychology ▪ I/O psychology ▪ Security studies ▪ Rural history/ sociology ▪ Public administration ▪ Strategic and crisis communications ▪ Communications and community development ▪ Economics ▪ Linguistics and second language acquisition
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure
Engineering	▪ Water ▪ Big Data/High Performance Computing ▪ Cybersecurity ▪ Nuclear Engineering ▪ Advanced Materials, Manufacturing and Processes ▪ Energy and Power ▪ Transportation ▪ Environmental Applications ▪ Sensors, Systems and Networks ▪ STEM Education
Human Ecology	▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Healthy Relationships ▪ Food Safety ▪ Food, Global Health, and Security ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

<b>Criteria 3</b>	
<b>High return on investment (ROI)</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Water Resources ▪ Food and Feed Safety
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Insect biochemistry/molecular biology/vector biology ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ GIS, remote sensing, and geospatial modeling ▪ Public administration ▪ Strategic and crisis communications ▪ Communications and community development ▪ Linguistics and second language acquisition
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling
Education	▪ Research and practice in teacher preparation for English language learners. ▪ Research in mathematics education and practice in mathematics teacher education.
Engineering	▪ Big Data/High Performance Computing ▪ STEM Education
Human Ecology	▪ Consumer Behavior ▪ Food Safety ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

<b>Criteria 4</b>	
<b>Current extramural funding success and/or strong potential for future/sustainable funding</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Water Resources ▪ Food and Feed Safety
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Insect biochemistry/molecular biology/vector biology ▪ Grassland ecology ▪ Evolutionary biology ▪ Infectious disease/innate immunity ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Atomic, molecular, optical physics ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ Science/mathematics education research ▪ Water quality and quantity ▪ GIS, remote sensing, and geospatial modeling ▪ Mirror symmetry and tropical geometry ▪ Big Data analysis and applied mathematics ▪ Behavioral neuroscience ▪ Cognitive/ human factors/social psychology ▪ I/O psychology ▪ Rural history/ sociology ▪ Economics
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling
Education	▪ Research in mathematics education and practice in mathematics teacher education.
Engineering	▪ Water ▪ Big Data/High Performance Computing ▪ Cybersecurity ▪ Nuclear Engineering ▪ Advanced Materials, Manufacturing and Processes ▪ Energy and Power ▪ Transportation ▪ Environmental Applications ▪ Sensors, Systems and Networks ▪ Biomedical Applications
Human Ecology	▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Healthy Relationships ▪ Food Safety ▪ Food, Global Health, and Security ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Unmanned Aircraft System Airworthiness Certification ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

<b>Criteria 5</b>	
<b>National centers, clusters of excellence e.g., NIH, USDA, NSF, USAID, etc.</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Insects/other pests ▪ Food and Feed Safety
Arts & Sciences	▪ Grassland ecology ▪ Atomic, molecular, optical physics ▪ GIS, remote sensing, and geospatial modeling ▪ Mirror symmetry and tropical geometry ▪ Big Data analysis and applied mathematics ▪ Communications and community development
Business	▪ Strategic selling
Engineering	▪ Cybersecurity
Human Ecology	▪ Food Safety ▪ Food, Global Health, and Security ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

<b>Criteria 6</b>	
<b>High potential for corporate and/or industry engagement/investment</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Insects/other pests
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ Energy sector research ▪ Water quality and quantity ▪ GIS, remote sensing, and geospatial modeling ▪ Novel statistical modeling ▪ I/O psychology
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure
Engineering	▪ Water ▪ Big Data/High Performance Computing ▪ Nuclear Engineering ▪ Advanced Materials, Manufacturing and Processes ▪ Energy and Power ▪ Biomedical Applications ▪ STEM Education
Human Ecology	▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Unmanned Aircraft System Airworthiness Certification ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

<b>Criteria 7</b>	
<b>Attracts a high number of graduate students who complete a terminal degree (e.g. Masters, Doctorates, Professional)</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Food and Feed Safety
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Insect biochemistry/molecular biology/vector biology ▪ Grassland ecology ▪ Evolutionary biology ▪ Infectious disease/innate immunity ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Atomic, molecular, optical physics ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ Water quality and quantity ▪ GIS, remote sensing, and geospatial modeling ▪ Novel statistical modeling ▪ Mirror symmetry and tropical geometry ▪ Big Data analysis and applied mathematics ▪ Behavioral neuroscience ▪ Cognitive/ human factors/social psychology ▪ I/O psychology ▪ Security studies ▪ Public administration ▪ Strategic and crisis communications ▪ Communications and community development ▪ Economics ▪ Cultural studies ▪ Digital humanities and arts ▪ Children’s literature ▪ Contemporary crafts
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics
Education	▪ Research and practice in teacher preparation for English language learners.
Engineering	▪ Water
Human Ecology	▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Healthy Relationships ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

<b>Criteria 8</b>	
<b>Attracts and retains a critical mass of expertise in RSCAD area (faculty, post-docs, and graduate students)</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Water Resources ▪ Food and Feed Safety
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Insect biochemistry/molecular biology/vector biology ▪ Grassland ecology ▪ Evolutionary biology ▪ Infectious disease/innate immunity ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Atomic, molecular, optical physics ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ Water quality and quantity ▪ GIS, remote sensing, and geospatial modeling ▪ Novel statistical modeling ▪ Mirror symmetry and tropical geometry ▪ Big Data analysis and applied mathematics ▪ Behavioral neuroscience ▪ Cognitive/ human factors/social psychology ▪ Security studies ▪ Rural history/ sociology ▪ Public administration ▪ Economics ▪ Children's literature
Business	▪ Corporate governance and citizenship ▪ Investments and Market Microstructure
Engineering	▪ Water ▪ Big Data/High Performance Computing ▪ Energy and Power ▪ Transportation
Human Ecology	▪ Healthy Relationships ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Unmanned Aircraft System Airworthiness Certification ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

<b>Criteria 9</b>	
<b>National and international reputation and award-winning recognition</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Food and Feed Safety
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Insect biochemistry/molecular biology/vector biology ▪ Grassland ecology ▪ Evolutionary biology ▪ Infectious disease/innate immunity ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Atomic, molecular, optical physics ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ GIS, remote sensing, and geospatial modeling ▪ Mirror symmetry and tropical geometry ▪ Big Data analysis and applied mathematics ▪ Behavioral neuroscience ▪ Cognitive/ human factors/social psychology ▪ Security studies ▪ Public administration ▪ Economics ▪ Digital humanities and arts ▪ Children's literature ▪ Contemporary crafts ▪ Photography and printmaking ▪ Community/ social engagement art ▪ School of Music, Theatre, and Dance
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Strategic selling ▪ Investments and Market Microstructure
Education	▪ Research and practice in teacher preparation for English language learners. ▪ Academic Advising
Engineering	▪ Water ▪ Big Data/High Performance Computing ▪ Cybersecurity ▪ Nuclear Engineering ▪ Advanced Materials, Manufacturing and Processes ▪ Energy and Power
Human Ecology	▪ Aging – Lifespan Development ▪ Healthy Relationships ▪ Food Safety
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Unmanned Systems Manufacturing, Controls, Systems Integration

<b>Criteria 9</b>	
<b>National and international reputation and award-winning recognition</b>	
<b>College</b>	<b>Area of Strength</b>
Veterinary Medicine	<ul style="list-style-type: none"> <li>▪ Infectious Disease – Select Agent Research</li> <li>▪ Viral Pathogenesis of Endemic and Emerging Diseases</li> <li>▪ Bacterial Pathogenesis of Endemic and Emerging Diseases</li> <li>▪ Vaccine Development and Field Efficacy</li> <li>▪ Mechanisms, Management and Consequences of Antimicrobial Resistance</li> <li>▪ Antiviral Development</li> <li>▪ Diagnostic Assay Development, Validation and Application</li> <li>▪ Epidemiology and Ecology of Disease</li> <li>▪ Therapeutic Interventions for Disease</li> <li>▪ Immune Mechanisms in Health and Disease</li> <li>▪ Vector-Borne Diseases and Vector Biology</li> <li>▪ Nanomedicine</li> </ul>

<b>Criteria 10</b>	
<b>High citation rate compared to peers in discipline or areas of strength</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	<ul style="list-style-type: none"> <li>▪ Wheat</li> <li>▪ Sorghum</li> </ul>
Arts & Sciences	<ul style="list-style-type: none"> <li>▪ Genomics/Lipidomics/Proteomics</li> <li>▪ Grassland ecology</li> <li>▪ Bio-organic synthesis, theory and spectroscopy</li> <li>▪ Nanomaterial and supramolecular synthesis</li> <li>▪ Atomic, molecular, optical physics</li> <li>▪ Condensed, soft, and biological matter physics</li> <li>▪ High energy physics/cosmology</li> <li>▪ Science/mathematics education research</li> <li>▪ Mirror symmetry and tropical geometry</li> <li>▪ Big Data analysis and applied mathematics</li> <li>▪ Cognitive/ human factors/social psychology</li> <li>▪ Public administration</li> <li>▪ Economics</li> <li>▪ Children’s literature</li> <li>▪ Philosophy</li> </ul>
Business	<ul style="list-style-type: none"> <li>▪ Corporate governance and citizenship</li> <li>▪ Customer insights</li> <li>▪ Strategic selling</li> <li>▪ Investments and Market Microstructure</li> </ul>
Human Ecology	<ul style="list-style-type: none"> <li>▪ Obesity</li> </ul>
Technology & Aviation	<ul style="list-style-type: none"> <li>▪ Innovative Manufacturing</li> </ul>
Veterinary Medicine	<ul style="list-style-type: none"> <li>▪ Viral Pathogenesis of Endemic and Emerging Diseases</li> <li>▪ Bacterial Pathogenesis of Endemic and Emerging Diseases</li> <li>▪ Vaccine Development and Field Efficacy</li> <li>▪ Mechanisms, Management and Consequences of Antimicrobial Resistance</li> <li>▪ Antiviral Development</li> <li>▪ Diagnostic Assay Development, Validation and Application</li> <li>▪ Epidemiology and Ecology of Disease</li> <li>▪ Therapeutic Interventions for Disease</li> <li>▪ Immune Mechanisms in Health and Disease</li> <li>▪ Vector-Borne Diseases and Vector Biology</li> <li>▪ Nanomedicine</li> </ul>

<b>Criteria 11</b>	
<b>Knowledge/expertise in discipline/areas of strength are sought by others beyond KSU</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	<ul style="list-style-type: none"> <li>▪ Beef Cattle</li> <li>▪ Wheat</li> <li>▪ Sorghum</li> <li>▪ Swine</li> <li>▪ Insects/other pests</li> <li>▪ Food and Feed Safety</li> </ul>
Arts & Sciences	<ul style="list-style-type: none"> <li>▪ Genomics/Lipidomics/Proteomics</li> <li>▪ Insect biochemistry/molecular biology/vector biology</li> <li>▪ Grassland ecology</li> <li>▪ Evolutionary biology</li> <li>▪ Infectious disease/innate immunity</li> <li>▪ Bio-organic synthesis, theory and spectroscopy</li> <li>▪ Nanomaterial and supramolecular synthesis</li> <li>▪ Atomic, molecular, optical physics</li> <li>▪ Condensed, soft, and biological matter physics</li> <li>▪ High energy physics/cosmology</li> <li>▪ Science/mathematics education research</li> <li>▪ Water quality and quantity</li> <li>▪ GIS, remote sensing, and geospatial modeling</li> <li>▪ Novel statistical modeling</li> <li>▪ Mirror symmetry and tropical geometry</li> <li>▪ Big Data analysis and applied mathematics</li> <li>▪ Behavioral neuroscience</li> <li>▪ Cognitive/ human factors/social psychology</li> <li>▪ I/O psychology</li> <li>▪ Security studies</li> <li>▪ Rural history/ sociology</li> <li>▪ Public administration</li> <li>▪ Strategic and crisis communications</li> <li>▪ Communications and community development</li> <li>▪ Economics</li> <li>▪ Linguistics and second language acquisition</li> <li>▪ Cultural studies</li> <li>▪ Digital humanities and arts</li> <li>▪ Children’s literature</li> <li>▪ Philosophy</li> <li>▪ Photography and printmaking</li> <li>▪ School of Music, Theatre, and Dance</li> </ul>
Business	<ul style="list-style-type: none"> <li>▪ Corporate governance and citizenship</li> <li>▪ Customer insights</li> <li>▪ Strategic selling</li> <li>▪ Investments and Market Microstructure</li> </ul>
Education	<ul style="list-style-type: none"> <li>▪ Research and practice in teacher preparation for English language learners.</li> <li>▪ Academic Advising</li> <li>▪ School Leadership</li> </ul>
Engineering	<ul style="list-style-type: none"> <li>▪ Water</li> <li>▪ Cybersecurity</li> <li>▪ Advanced Materials, Manufacturing and Processes</li> <li>▪ Environmental Applications</li> <li>▪ Sensors, Systems and Networks</li> </ul>
Human Ecology	<ul style="list-style-type: none"> <li>▪ Aging – Lifespan Development</li> <li>▪ Consumer Behavior</li> <li>▪ Healthy Relationships</li> <li>▪ Food Safety</li> <li>▪ Obesity</li> </ul>

**Criteria 11**

**Knowledge/expertise in discipline/areas of strength are sought by others beyond KSU**

College	Area of Strength
Technology & Aviation	<ul style="list-style-type: none"> <li>▪ Unmanned Aircraft System Airspace and Vehicle System Integration</li> <li>▪ Innovative Manufacturing</li> <li>▪ Unmanned Aircraft System Airworthiness Certification</li> <li>▪ Bulk Solids</li> <li>▪ Unmanned Aircraft Systems Photogrammetry</li> <li>▪ Unmanned Systems Manufacturing, Controls, Systems Integration</li> </ul>
Veterinary Medicine	<ul style="list-style-type: none"> <li>▪ Infectious Disease – Select Agent Research</li> <li>▪ Viral Pathogenesis of Endemic and Emerging Diseases</li> <li>▪ Bacterial Pathogenesis of Endemic and Emerging Diseases</li> <li>▪ Vaccine Development and Field Efficacy</li> <li>▪ Mechanisms, Management and Consequences of Antimicrobial Resistance</li> <li>▪ Antiviral Development</li> <li>▪ Diagnostic Assay Development, Validation and Application</li> <li>▪ Epidemiology and Ecology of Disease</li> <li>▪ Therapeutic Interventions for Disease</li> <li>▪ Immune Mechanisms in Health and Disease</li> <li>▪ Vector-Borne Diseases and Vector Biology</li> <li>▪ Nanomedicine</li> </ul>

**Criteria 12**

**Quality infrastructure and facilities considered assets**

College	Area of Strength
Agriculture and Agricultural Experiment Station	<ul style="list-style-type: none"> <li>▪ Food and Feed Safety</li> </ul>
Arts & Sciences	<ul style="list-style-type: none"> <li>▪ Grassland ecology</li> <li>▪ Atomic, molecular, optical physics</li> <li>▪ Condensed, soft, and biological matter physics</li> <li>▪ High energy physics/cosmology</li> <li>▪ GIS, remote sensing, and geospatial modeling</li> <li>▪ Novel statistical modeling</li> <li>▪ School of Music, Theatre, and Dance</li> </ul>
Business	<ul style="list-style-type: none"> <li>▪ Entrepreneurship and technological innovation and commercialization</li> <li>▪ Strategic selling</li> </ul>
Engineering	<ul style="list-style-type: none"> <li>▪ Big Data/High Performance Computing</li> <li>▪ Nuclear Engineering</li> <li>▪ Energy and Power</li> </ul>
Human Ecology	<ul style="list-style-type: none"> <li>▪ Aging – Lifespan Development</li> <li>▪ Consumer Behavior</li> <li>▪ Healthy Relationships</li> <li>▪ Obesity</li> </ul>
Technology & Aviation	<ul style="list-style-type: none"> <li>▪ Bulk Solids</li> <li>▪ Unmanned Systems Manufacturing, Controls, Systems Integration</li> </ul>
Veterinary Medicine	<ul style="list-style-type: none"> <li>▪ Infectious Disease – Select Agent Research</li> <li>▪ Viral Pathogenesis of Endemic and Emerging Diseases</li> <li>▪ Vaccine Development and Field Efficacy</li> <li>▪ Mechanisms, Management and Consequences of Antimicrobial Resistance</li> <li>▪ Antiviral Development</li> <li>▪ Diagnostic Assay Development, Validation and Application</li> <li>▪ Epidemiology and Ecology of Disease</li> <li>▪ Therapeutic Interventions for Disease</li> <li>▪ Immune Mechanisms in Health and Disease</li> <li>▪ Vector-Borne Diseases and Vector Biology</li> <li>▪ Nanomedicine</li> </ul>

**Criteria 13**

**“Adaptability and responsiveness”- capacity to adapt and respond to emerging needs or changes in the RSCAD area**

College	Area of Strength
Arts & Sciences	<ul style="list-style-type: none"> <li>▪ Atomic, molecular, optical physics</li> <li>▪ Condensed, soft, and biological matter physics</li> <li>▪ High energy physics/cosmology</li> <li>▪ Energy sector research</li> <li>▪ Water quality and quantity</li> <li>▪ GIS, remote sensing, and geospatial modeling</li> <li>▪ Novel statistical modeling</li> <li>▪ Rural history/ sociology</li> <li>▪ Public administration</li> <li>▪ Strategic and crisis communications</li> <li>▪ Cultural studies</li> <li>▪ Digital humanities and arts</li> </ul>
Education	<ul style="list-style-type: none"> <li>▪ Research and practice in teacher preparation for English language learners.</li> <li>▪ Research in mathematics education and practice in mathematics teacher education.</li> </ul>
Engineering	<ul style="list-style-type: none"> <li>▪ Water</li> <li>▪ Sensors, Systems and Networks</li> </ul>
Human Ecology	<ul style="list-style-type: none"> <li>▪ Aging – Lifespan Development</li> <li>▪ Consumer Behavior</li> <li>▪ Healthy Relationships</li> <li>▪ Obesity</li> </ul>
Technology & Aviation	<ul style="list-style-type: none"> <li>▪ Unmanned Aircraft System Airspace and Vehicle System Integration</li> <li>▪ Innovative Manufacturing</li> <li>▪ Unmanned Aircraft System Airworthiness Certification</li> <li>▪ Bulk Solids</li> <li>▪ Unmanned Aircraft Systems Photogrammetry</li> <li>▪ Unmanned Systems Manufacturing, Controls, Systems Integration</li> </ul>
Veterinary Medicine	<ul style="list-style-type: none"> <li>▪ Infectious Disease – Select Agent Research</li> <li>▪ Viral Pathogenesis of Endemic and Emerging Diseases</li> <li>▪ Bacterial Pathogenesis of Endemic and Emerging Diseases</li> <li>▪ Vaccine Development and Field Efficacy</li> <li>▪ Mechanisms, Management and Consequences of Antimicrobial Resistance</li> <li>▪ Antiviral Development</li> <li>▪ Diagnostic Assay Development, Validation and Application</li> <li>▪ Epidemiology and Ecology of Disease</li> <li>▪ Therapeutic Interventions for Disease</li> <li>▪ Immune Mechanisms in Health and Disease</li> <li>▪ Vector-Borne Diseases and Vector Biology</li> <li>▪ Nanomedicine</li> </ul>

**Criteria 14**

**Visionary and forward thinking - innovative (on the cutting edge)**

College	Area of Strength
Arts & Sciences	<ul style="list-style-type: none"> <li>▪ Genomics/Lipidomics/Proteomics ▪ Bio-organic synthesis, theory and spectroscopy</li> <li>▪ Nanomaterial and supramolecular synthesis ▪ Atomic, molecular, optical physics ▪ Science/mathematics education research ▪ Energy sector research ▪ Mirror symmetry and tropical geometry ▪ Big Data analysis and applied mathematics ▪ Security studies ▪ Digital humanities and arts ▪ School of Music, Theatre, and Dance</li> </ul>
Business	<ul style="list-style-type: none"> <li>▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure</li> </ul>
Education	<ul style="list-style-type: none"> <li>▪ School Leadership</li> </ul>
Engineering	<ul style="list-style-type: none"> <li>▪ Water</li> </ul>
Human Ecology	<ul style="list-style-type: none"> <li>▪ Aging – Lifespan Development ▪ Food Safety ▪ Food, Global Health, and Security ▪ Obesity</li> </ul>
Technology & Aviation	<ul style="list-style-type: none"> <li>▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration</li> </ul>
Veterinary Medicine	<ul style="list-style-type: none"> <li>▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine</li> </ul>

**Criteria 15**

**Strategically positions the university or college for the future**

College	Area of Strength
Agriculture and Agricultural Experiment Station	<ul style="list-style-type: none"> <li>▪ Insects/other pests ▪ Water Resources ▪ Food and Feed Safety</li> </ul>
Arts & Sciences	<ul style="list-style-type: none"> <li>▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Science/mathematics education research ▪ Novel statistical modeling ▪ Security studies ▪ Digital humanities and arts ▪ Children’s literature</li> </ul>
Business	<ul style="list-style-type: none"> <li>▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure</li> </ul>
Education	<ul style="list-style-type: none"> <li>▪ Research and practice in teacher preparation for English language learners. ▪ Academic Advising ▪ School Leadership</li> </ul>
Engineering	<ul style="list-style-type: none"> <li>▪ Water ▪ Big Data/High Performance Computing ▪ Nuclear Engineering ▪ Advanced Materials, Manufacturing and Processes ▪ Transportation ▪ Sensors, Systems and Networks ▪ Biomedical Applications</li> </ul>
Human Ecology	<ul style="list-style-type: none"> <li>▪ Consumer Behavior ▪ Healthy Relationships ▪ Food Safety ▪ Food, Global Health, and Security ▪ Obesity</li> </ul>
Technology & Aviation	<ul style="list-style-type: none"> <li>▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Unmanned Aircraft System Airworthiness Certification ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration</li> </ul>
Veterinary Medicine	<ul style="list-style-type: none"> <li>▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine</li> </ul>

**Criteria 16**

**Unique or a “niche” area for the university and/or college**

College	Area of Strength
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Insects/other pests ▪ Water Resources ▪ Food and Feed Safety
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Grassland ecology ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ Security studies ▪ Rural history/ sociology ▪ Linguistics and second language acquisition ▪ Cultural studies ▪ Digital humanities and arts ▪ Children’s literature ▪ Philosophy ▪ Contemporary crafts ▪ Photography and printmaking ▪ School of Music, Theatre, and Dance
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling
Education	▪ Academic Advising ▪ School Leadership
Engineering	▪ Water ▪ Big Data/High Performance Computing ▪ Cybersecurity ▪ Nuclear Engineering ▪ Energy and Power ▪ STEM Education
Human Ecology	▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Healthy Relationships ▪ Food Safety ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Unmanned Aircraft System Airworthiness Certification ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

**Criteria 17**

**Potential for commercialization and/or patents**

College	Area of Strength
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Insects/other pests ▪ Food and Feed Safety
Arts & Sciences	▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Energy sector research
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization
Engineering	▪ Cybersecurity ▪ Nuclear Engineering ▪ Advanced Materials, Manufacturing and Processes ▪ Transportation ▪ Environmental Applications ▪ Biomedical Applications
Human Ecology	▪ Consumer Behavior ▪ Food, Global Health, and Security
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Unmanned Aircraft System Airworthiness Certification ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

**Criteria 18**

**Multi-faceted collaboration (multidisciplinary, interdisciplinary, multi-institutional)**

College	Area of Strength
Agriculture and Agricultural Experiment Station	▪ Insects/other pests ▪ Water Resources ▪ Food and Feed Safety
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Atomic, molecular, optical physics ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ Energy sector research ▪ GIS, remote sensing, and geospatial modeling ▪ Novel statistical modeling ▪ Mirror symmetry and tropical geometry ▪ Big Data analysis and applied mathematics ▪ Security studies ▪ Strategic and crisis communications ▪ Communications and community development ▪ Economics ▪ Philosophy ▪ Community/ social engagement art ▪ School of Music, Theatre, and Dance
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure
Engineering	▪ Water ▪ Big Data/High Performance Computing ▪ Cybersecurity ▪ Advanced Materials, Manufacturing and Processes ▪ Energy and Power ▪ Transportation ▪ Environmental Applications ▪ Sensors, Systems and Networks ▪ Biomedical Applications ▪ STEM Education
Human Ecology	▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Healthy Relationships ▪ Food Safety ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

**Criteria 19**

**RSCAD area integrates research, education, and engagement (outreach) as part of the land grant mission**

College	Area of Strength
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Insects/other pests ▪ Water Resources ▪ Food and Feed Safety
Arts & Sciences	▪ Genomics/Lipidomics/Proteomics ▪ Grassland ecology ▪ Bio-organic synthesis, theory and spectroscopy ▪ Nanomaterial and supramolecular synthesis ▪ Science/mathematics education research ▪ GIS, remote sensing, and geospatial modeling ▪ Novel statistical modeling ▪ Behavioral neuroscience ▪ Cognitive/ human factors/social psychology ▪ Public administration ▪ Strategic and crisis communications ▪ Communications and community development ▪ Linguistics and second language acquisition ▪ Digital humanities and arts ▪ Philosophy ▪ Community/ social engagement art ▪ School of Music, Theatre, and Dance
Business	▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling
Education	▪ Research in mathematics education and practice in mathematics teacher education.
Engineering	▪ Water ▪ Advanced Materials, Manufacturing and Processes ▪ Energy and Power ▪ STEM Education
Human Ecology	▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Healthy Relationships ▪ Food Safety ▪ Obesity
Technology & Aviation	▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Bulk Solids ▪ Unmanned Systems Manufacturing, Controls, Systems Integration
Veterinary Medicine	▪ Infectious Disease – Select Agent Research ▪ Viral Pathogenesis of Endemic and Emerging Diseases ▪ Bacterial Pathogenesis of Endemic and Emerging Diseases ▪ Vaccine Development and Field Efficacy ▪ Mechanisms, Management and Consequences of Antimicrobial Resistance ▪ Antiviral Development ▪ Diagnostic Assay Development, Validation and Application ▪ Epidemiology and Ecology of Disease ▪ Therapeutic Interventions for Disease ▪ Immune Mechanisms in Health and Disease ▪ Vector-Borne Diseases and Vector Biology ▪ Nanomedicine

<b>Criteria 20</b>	
<b>Other – as determined by the College</b>	
<b>(for more detail, please see the College RSCAD Reports)</b>	
<b>College</b>	<b>Area of Strength</b>
Agriculture and Agricultural Experiment Station	▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Insects/other pests ▪ Water Resources ▪ Food and Feed Safety
Architecture, Planning and Design	▪ Virtual Interactive Design Education ▪ Great Plains Center for Urban Watersheds (GPCUW): Joining sustainable water science, planning and management ▪ Performance and Innovation in Building Envelopes ▪ Performance and Innovation in Building Envelopes ▪ Breaking the Barriers: Aging in Place ▪ Promoting Health through the Built Environment ▪ Investigating Place Using Digital Toolset
Engineering	▪ Water