

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. Due to a leadership change, the College of Engineering will submit its report in September 2014 and this report will be updated at that time.

| Criteria 1 Addresses current or emerging state, regional, national, and/or global needs | |
|--|---|
| College | Area of Strength |
| 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 |
| 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 |

| Criteria 2 High impact (societal, economy, productivity) | |
|---|--|
| 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 ▪ 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 |

| Criteria 2 | |
|--|--|
| High impact (societal, economy, productivity) | |
| College | Area of Strength |
| Business | ▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure |
| 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 |

| Criteria 3 | |
|---|--|
| High return on investment (ROI) | |
| College | Area of Strength |
| 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. |
| 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 |

| Criteria 4 | |
|--|--|
| Current extramural funding success and/or strong potential for future/sustainable funding | |
| College | Area of Strength |
| 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 |

| Criteria 4 | |
|--|--|
| Current extramural funding success and/or strong potential for future/sustainable funding | |
| College | Area of Strength |
| 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. |
| 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 |

| Criteria 5 | |
|---|--|
| National centers, clusters of excellence e.g., NIH, USDA, NSF, USAID, etc. | |
| College | Area of Strength |
| 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 |
| 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 |

| Criteria 6 | |
|---|---|
| High potential for corporate and/or industry engagement/investment | |
| College | Area of Strength |
| 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 |
| 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 |

| Criteria 6 High potential for corporate and/or industry engagement/investment | |
|--|---|
| College | Area of Strength |
| Veterinary Medicine | <ul style="list-style-type: none"> ▪ 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 7 Attracts a high number of graduate students who complete a terminal degree (e.g. Masters, Doctorates, Professional) | |
|---|--|
| College | Area of Strength |
| Agriculture and Agricultural Experiment Station | <ul style="list-style-type: none"> ▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Food and Feed Safety |
| Arts & Sciences | <ul style="list-style-type: none"> ▪ 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 | <ul style="list-style-type: none"> ▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics |
| Education | <ul style="list-style-type: none"> ▪ Research and practice in teacher preparation for English language learners. |
| Human Ecology | <ul style="list-style-type: none"> ▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Healthy Relationships ▪ Obesity |
| Technology & Aviation | <ul style="list-style-type: none"> ▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Innovative Manufacturing ▪ Bulk Solids ▪ Unmanned Aircraft Systems Photogrammetry ▪ Unmanned Systems Manufacturing, Controls, Systems Integration |
| Veterinary Medicine | <ul style="list-style-type: none"> ▪ 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 8 Attracts and retains a critical mass of expertise in RSCAD area (faculty, post-docs, and graduate students) | |
|---|---|
| College | Area of Strength |
| Agriculture and Agricultural Experiment Station | <ul style="list-style-type: none"> ▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Water Resources ▪ Food and Feed Safety |
| Arts & Sciences | <ul style="list-style-type: none"> ▪ 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 | <ul style="list-style-type: none"> ▪ Corporate governance and citizenship ▪ Investments and Market Microstructure |
| Human Ecology | <ul style="list-style-type: none"> ▪ Healthy Relationships ▪ Obesity |

| Criteria 8 | |
|--|---|
| Attracts and retains a critical mass of expertise in RSCAD area (faculty, post-docs, and graduate students) | |
| College | Area of Strength |
| Technology & Aviation | <ul style="list-style-type: none"> ▪ 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 | <ul style="list-style-type: none"> ▪ 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 9 | |
|--|---|
| National and international reputation and award-winning recognition | |
| College | Area of Strength |
| Agriculture and Agricultural Experiment Station | <ul style="list-style-type: none"> ▪ Food and Feed Safety |
| Arts & Sciences | <ul style="list-style-type: none"> ▪ 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 | <ul style="list-style-type: none"> ▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Strategic selling ▪ Investments and Market Microstructure |
| Education | <ul style="list-style-type: none"> ▪ Research and practice in teacher preparation for English language learners. ▪ Academic Advising |
| Human Ecology | <ul style="list-style-type: none"> ▪ Aging – Lifespan Development ▪ Healthy Relationships ▪ Food Safety |
| Technology & Aviation | <ul style="list-style-type: none"> ▪ Unmanned Aircraft System Airspace and Vehicle System Integration ▪ Unmanned Systems Manufacturing, Controls, Systems Integration |
| Veterinary Medicine | <ul style="list-style-type: none"> ▪ 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 10 | |
|--|--|
| High citation rate compared to peers in discipline or areas of strength | |
| College | Area of Strength |
| Agriculture and Agricultural Experiment Station | <ul style="list-style-type: none"> ▪ Wheat ▪ Sorghum |
| Arts & Sciences | <ul style="list-style-type: none"> ▪ Genomics/Lipidomics/Proteomics ▪ Grassland ecology ▪ 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 ▪ Mirror symmetry and tropical geometry ▪ Big Data analysis and applied mathematics ▪ Cognitive/ human factors/social psychology ▪ Public administration ▪ Economics ▪ Children’s literature ▪ Philosophy |
| Business | <ul style="list-style-type: none"> ▪ Corporate governance and citizenship ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure |
| Human Ecology | <ul style="list-style-type: none"> ▪ Obesity |

| Criteria 10 | |
|--|---|
| High citation rate compared to peers in discipline or areas of strength | |
| College | Area of Strength |
| Technology & Aviation | ▪ Innovative Manufacturing |
| Veterinary Medicine | ▪ 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 11 | |
|--|---|
| Knowledge/expertise in discipline/areas of strength are sought by others beyond KSU | |
| College | Area of Strength |
| Agriculture and Agricultural Experiment Station | ▪ Beef Cattle ▪ Wheat ▪ Sorghum ▪ Swine ▪ Insects/other pests ▪ 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 ▪ 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 ▪ Rural history/ sociology ▪ Public administration ▪ Strategic and crisis communications ▪ Communications and community development ▪ Economics ▪ Linguistics and second language acquisition ▪ Cultural studies ▪ Digital humanities and arts ▪ Children's literature ▪ Philosophy ▪ Photography and printmaking ▪ School of Music, Theatre, and Dance |
| Business | ▪ Corporate governance and citizenship ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure |
| Education | ▪ Research and practice in teacher preparation for English language learners. ▪ Academic Advising ▪ School Leadership |
| 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 12 | |
|--|---|
| Quality infrastructure and facilities considered assets | |
| College | Area of Strength |
| Agriculture and Agricultural Experiment Station | ▪ Food and Feed Safety |
| Arts & Sciences | ▪ Grassland ecology ▪ Atomic, molecular, optical physics ▪ Condensed, soft, and biological matter physics ▪ High energy physics/cosmology ▪ GIS, remote sensing, and geospatial modeling ▪ Novel statistical modeling ▪ School of Music, Theatre, and Dance |
| Business | ▪ Entrepreneurship and technological innovation and commercialization ▪ Strategic selling |
| Human Ecology | ▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ Healthy Relationships ▪ Obesity |

| Criteria 12 | |
|--|--|
| Quality infrastructure and facilities considered assets | |
| College | Area of Strength |
| Technology & Aviation | ▪ Bulk Solids ▪ 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 |

| 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 | ▪ Atomic, molecular, optical physics ▪ 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 ▪ Rural history/ sociology ▪ Public administration ▪ Strategic and crisis communications ▪ Cultural studies ▪ Digital humanities and arts |
| Education | ▪ Research and practice in teacher preparation for English language learners. ▪ Research in mathematics education and practice in mathematics teacher education. |
| Human Ecology | ▪ Aging – Lifespan Development ▪ Consumer Behavior ▪ 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 |

| Criteria 14 | |
|--|--|
| Visionary and forward thinking - innovative (on the cutting edge) | |
| College | Area of Strength |
| Arts & Sciences | ▪ Genomics/Lipidomics/Proteomics ▪ Bio-organic synthesis, theory and spectroscopy ▪ 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 |
| Business | ▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure |
| Education | ▪ School Leadership |
| Human Ecology | ▪ Aging – Lifespan Development ▪ 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 |

Criteria 15

Strategically positions the university or college for the future

| College | Area of Strength |
|---|--|
| Agriculture and Agricultural Experiment Station | ▪ Insects/other pests ▪ Water Resources ▪ Food and Feed Safety |
| Arts & Sciences | ▪ 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 |
| Business | ▪ Corporate governance and citizenship ▪ Entrepreneurship and technological innovation and commercialization ▪ Business analytics ▪ Customer insights ▪ Strategic selling ▪ Investments and Market Microstructure |
| Education | ▪ Research and practice in teacher preparation for English language learners. ▪ Academic Advising ▪ School Leadership |
| Human Ecology | ▪ 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 |

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 |
| 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 |
| 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 |
| 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. |
| 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 |

Criteria 20

**Other – as determined by the College
(for more detail, please see the College RSCAD Reports)**

| College | Area of Strength |
|---|--|
| 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 |