Agriscience Research SAE Program

National FFA Organization

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Official Rules and Policies

for the Agriscience Research SAE Program.

Refer to the Agriscience Research SAE Program webpage at FFA.org/participate/awards/agriscience for the most up-to-date edition of the handbook.

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FFA Vision
Growing the next generation of leaders who will change the world.

FFA Mission
FFA makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education.

FFA Code of Conduct
FFA members participating in National FFA programs understand and agree to abide by the National FFA Code of Conduct at: https://ffa.app.box.com/s/x6l21kovv4x9tgiegy73mei30zvlip5i

Guiding Principles

National FFA believes that awards and competitive events should:

1. Be inclusive and engaging for all students and FFA members.
2. Provide awards and recognition opportunities for students at all levels.
3. Inspire members to explore, learn, and be prepared for future careers related to the AFNR career pathways and FFA AFNR Value Chain.
4. Recognize achievements in skill development and knowledge, including:
    a. leveraging relevant technologies
    b. utilizing creative problem-solving
    c. meeting developmentally appropriate learning objectives (Bloom's Taxonomy)
    d. utilizing employability skills (teamwork, communication, collaboration)
5. Work with other groups to utilize or partner with existing experiences.
6. Provide feedback that promotes personal and professional growth.

Agriculture, Food and Natural Resources (AFNR)

Career Cluster Content Standards

The National Council for Agricultural Education has provided permission to the National FFA Organization to use the National AFNR Career Cluster Content Standards in the development of their educational resource materials. The National Council for Agricultural Education is the owner and developer of the National AFNR Career Cluster Content Standards © 2016 and reserves all rights to the original material used here with permission. In addition, The National Association of State Directors of Career and Technical Education/National Career Technical Education Foundation (NASDCTE/NCTEF) has provided permission to use the Common Career and Technical Core (CCTC) Standards in support of this Program. NASDCTE/NCTEF are the owners and developers of the Common Career and Technical Core (CCTC) Standards © 2012 and reserve all rights to the original material used here with permission.

The National AFNR Career Cluster Content Standards are a guide to developing a well-planned curriculum in agriscience education to be delivered to students throughout the country. For a complete copy of the AFNR Career Cluster Content Standards, please visit FFA.org/thecouncil/afnr.

The National FFA Organization has adopted the AFNR Career Cluster Content Standards and integrated them into the national award and recognition programs for the benefit of members, school administration, and agriculture as a whole.

Introduction

Program Purpose

The National FFA Agriscience Research SAE Program provides recognition to students engaged in outstanding Research-Type Immersion SAEs. Students in this program area use scientific principles and emerging technologies to solve complex problems related to agriculture, food, and natural resource systems. The Agriscience Research SAE Program is for students in grades 7-12. Participation begins at the local level and progresses to state and national levels.

Developing a Research SAE

The Agriscience Research SAE Program is designed to recognize outstanding Research-Type Immersion SAEs. A Research SAE has a few variations you will select from once you identify what problem you would like to solve or question you want to pursue. There are three variations of Research-Type Immersion SAEs available that students may conduct:

i. An EXPERIMENTAL RESEARCH SAE involves the application of the scientific method to control certain variables while manipulating others to observe the outcome. You will define a **hypothesis**, determine an appropriate **experimental design**, **conduct the research**, **collect the data**, **draw conclusions** from the data and **recommend** further research that can be done.

   Examples:

   - Testing the Effectiveness of a New Fertilizer on a crop yield
   - Investigating the effects of new feed on Dairy cattle milk production

ii. An ANALYTICAL RESEARCH SAE often begins with a **question** that asks why or how something occurs, followed by a period of data collection using qualitative and/or quantitative methodologies. You will conduct an analysis of data, facts and other information to determine the answer to the question posed.

   Examples:

   - Analyzing Trends in Crop Disease Incidences Over the past Decade
   - Analyzing the impact of different grazing systems on cattle weight gain

iii. An INVENTION RESEARCH SAE applies the engineering design process to create a new product or service. This type of research often begins with the identification of a need and the development of a product followed by a design process of **prototyping** and testing that results in a product that meets the identified need.

   Examples:

   - Developing a new automated irrigation system
   - Developing a new wearable health monitoring device for livestock

Research SAE Quality Indicators:

The student:

- Engages in identifying an ongoing program of research following an approved Supervised Agricultural Experience (SAE) Research Plan
- Follows scientific process and/or accepted best practices for conducting research to ensure reliability, validity and replicability of research
- Conducts peer reviews with supervising agriculture instructor and other professionals during multiple stages of the research cycle (e.g., proposal, report of findings, publications, etc.)
- Delivers a summary presentation to a local committee organized by the agricultural education instructor.

Pathway Descriptions

Students with Research Immersion SAEs can compete in the national Agriscience Research SAE Program in one of six pathways:

- Animal Systems
- Environmental Service/Natural Resource Systems
- Food Products and Processing Systems
- Plant Systems
- Power, Structural and Technical Systems
- Social Science

Pathways are determined by which agricultural system would be most interested in the practical recommendations of the Research SAE. For instance, if a student tests the width of buffer strips adjacent to corn fields to filter out sediments, the SAE would be in Environmental Service/Natural Resource Systems because the largest impacts would be on the stream system and aquatic organisms living in the stream.

Biotechnology Systems is the study of using data and scientific techniques to solve problems concerning living organisms with an emphasis on applications to agriculture, food and natural resource systems. Because of this, biotechnology research is incorporated into all pathways listed depending on the study conducted. Biotechnology Systems is not its own pathway.

Animal Systems (AS)

The study of animal systems, including life processes, health, nutrition, genetics, management and processing, through the study of small animals, aquaculture, livestock, dairy, horses and/or poultry.

Examples

- Compare nutrient levels on animal growth
- Research new disease control mechanisms
- Effects of estrous synchronization on ovulation
- Compare effects of thawing temperatures on livestock semen
- Effects of growth hormone on meat/milk production

Environmental Services/Natural Resource Systems (ENR)

- Environmental Service Systems: The study of systems, instruments and technology used to monitor and minimize the impact of human activity on environmental systems.
- Natural Resource Systems: The study of the management, protection, enhancement and improvement of soil, water, wildlife, forests and air as natural resources.
- ENR research involves only non-invasive and non-intrusive methods that do not negatively affect a vertebrate animal's health or well-being. Studies that are designed or anticipated to cause vertebrate animal death are prohibited.

Examples

- Effect of agricultural chemicals on water quality
- Effects of cropping practices on wildlife populations
- Compare water movements through different soil types

Food Products and Processing Systems (FPP)

The study of product development, quality assurance, food safety, production, regulation and compliance and food service within the food science industry.

Examples

- Effects of packaging techniques on food spoilage rates
- Resistance of organic fruits to common diseases
- Determining if varieties of sweet corn have different chemical energy
- Control of molds on bakery products
- Effects of the amount of sucrose used in baked goods
- Use of a triangle test in sensory science

Plant Systems (PS)

The study of plant life cycles, classifications, functions, structures, reproduction, media and nutrients, as well as growth and cultural practices, through the study of crops, turf grass, trees and shrubs and/or ornamental plants.

Examples

- Compare the rates of transpiration of plants in different locations in a landscape

- Effects of heavy metals such as cadmium on the growth rate of plants
- Compare GMO and conventional seed/plant growth under various conditions
- Effects of lunar climate and soil condition on plant growth
- Compare plant growth of hydroponics and conventional methods

Power, Structural and Technical Systems (PST)

The study of agricultural equipment, power systems, alternative fuel sources and precision technology, as well as woodworking, metalworking, welding and project planning for agricultural structures.

Examples

- Compare the energy output of alternative fuel sources to traditional forms
- Create minimum energy use structures
- Compare properties of various alternative insulation products
- Examining the efficiency, the configurations of ventilation systems in a swine facility

Social Science (SS)

The study of agricultural areas including agricultural education, agribusiness, agricultural communication, agricultural leadership and sales in agriculture, food and natural resources.

Examples

- Investigate perceptions of community members toward alternative agricultural practices
- Determine the impact of local/state/national safety programs upon accident rates in agricultural/natural resource occupations
- Comparison of profitability of various agricultural/natural resource practices
- Investigate the impact of significant historical figures on a local community
- Determine the economic effects of local/state/national legislation impacting agricultural/natural resources
- Consumer confidence and understanding of food labels
- Economic effect of employment rate and meat consumption

Understanding the Agriscience Research SAE Program

Eligibility of Participants

Membership

Each participant must be a current dues-paying FFA member in good standing with the local chapter, state FFA association and National FFA Organization during the school year in which the participant qualified to participate at the national level.

The participant, at the time of their selection as a national participant, must be

- A FFA member in grades 7-12 during the school year in which the participant qualified to participate at the national level. A graduating senior is considered eligible to compete at the state and national level up to and including their second national convention following graduation.
- Enrolled in at least one agricultural education course during the school year in which the participant qualified to participate at the national level and/or follow a planned course of study. Either course must include a supervised agricultural experience program, the objective of which is preparation for an agricultural career.

If a student moves to a different chapter or a different state once they have qualified as a state representative in the Agriscience Research SAE Program, that student may be allowed to compete in the national event with the school they qualified with during the qualifying year.

Once a student places in the top six of a division and pathway, they can no longer compete in that division and pathway in future years.

> ***Example:*** *If a student wins Animal Systems Experimental Research division as a 7th grader, they can no longer participate in that Division. They can compete in Animal Systems Analytical Research or Invention Research division as an 8th grader or even Animal Systems Experimental Research Division as an 11th grader.*

- Students may not participate in more than one pathway and division of the Agriscience Research SAE Program each year.

Divisions

The National FFA Constitution provides flexibility to meet the needs of all students. Competition is open to all FFA members in grades 7–12. There are six divisions:

1. Experimental Research SAE (7-9 grades)
2. Experimental Research SAE (10-12 grades)
3. Analytical Research SAE (7-9 grades)
4. Analytical Research SAE (10-12 grades)
5. Invention Research SAE (7-9 grades)
6. Invention Research SAE (10-12 grades)

Grade is determined by the grade level of the member at the time of qualification at the state level.

National Qualifiers

National Qualifiers must be certified by the state. State Associations with qualifying competitions may submit up to 36 National Qualifiers, one in each pathway and each division. State FFA associations may not have more than one entry in a pathway/division.

Rules

Program Rules

If there are any questions regarding policies and procedures, contact the National FFA Agriscience Research SAE Program specialist prior to beginning the research: agriscience@ffa.org.

General

1. All SAEs not meeting the criteria of the National FFA Agriscience Research SAE Program, but are otherwise permissible, must be conducted in a Regulated Research Institution (RRI). A Regulated Research Institution is defined as a professional research/teaching institution that is regularly inspected by the USDA and is licensed to use animals covered by the Animal Welfare Act and may also be subject to U.S. Public Health Service Policy. Also included are federal laboratories such as National Institutes of Health and Centers for Disease Control. In addition, pharmaceutical and biotechnology companies and research institutes that utilize research animals that are not covered by the Animal Welfare Act but have been an operational Institutional Animal Care and Use Committee and are in compliance with U.S. federal laws are included in this definition.
2. A Research SAE may be part of a larger study performed by professional scientists, but the work presented in the application, by the student, must be only their own portion of the complete study.
3. Data may not be added to the Agriscience Research SAE Program application after state-level selection.

Human Vertebrate

The following policies will govern the use of human beings in Research SAEs:

1. No Research SAEs involving human cultures of any type (mouth, throat, skin or otherwise) are allowed. However, tissue cultures purchased from reputable biological supply houses or research facilities are suitable for student use. A student should not use animals (including insects, birds, fish etc.) to represent human tissue. Research in health systems related to humans is beyond the scope of the Research SAEs.
2. Research SAEs that involve taste, color, texture or any other choice are allowed but are limited to preference only. Quantities of normal food and non-alcoholic beverages are limited to normal serving amounts or less. No Research SAEs may use drugs, food or beverages in order to measure their effect on a person.
3. The only human blood that may be used is that which is either obtained through a blood bank, hospital or laboratory. No blood may be drawn by any person or from any person specifically for a Research SAE. This rule does not preclude the student making use of the data collected from blood tests not made exclusively for a Research SAE.
4. Psychological, educational and opinion studies are allowed. Research SAEs that involve learning, ESP, motivation, hearing and vision are also permitted (examples might include surveys, questionnaires, tests, etc.).
5. Data/record review studies in which the data is taken from preexisting data sets that are publicly available and/or published and do not involve any interaction with humans or the collection of any data from a human participant for the purpose of Research SAE are allowed.
6. No Research SAE will be allowed that is in violation of these rules. No person may perform any experiment for student that violates any of the rules.

Non-Human Vertebrate
The following policies will govern the use of non-human vertebrates in Research SAEs:

1. The use of vertebrate animals in Research SAEs is allowable under the conditions and rules below. Vertebrate animals are defined as
    a. Live, nonhuman vertebrate mammalian embryos or fetuses.
    b. Tadpoles.
    c. Bird and reptile eggs within three days (72 hours) of hatching.
    d. All other non-human vertebrates (including fish) at hatching or birth.
2. Vertebrate animal studies may be conducted at a home, school, farm, ranch, in the field, etc. This includes
    a. Studies of animals in their natural environment.
    b. Studies of animals in zoological parks.
    c. Studies of livestock that use standard agricultural practices.
    d. Studies of fish that use standard aquaculture practices.
3. Intrusive techniques used cannot exceed momentary pain and must comply with commonly accepted agriculture and livestock management procedures.
4. The student is prohibited from designing or participating in an experiment associated with the following types of studies on vertebrate animals:
    a. Induced toxicity studies with known toxic substances that could cause pain, distress or death, including but not limited to alcohol, acid rain, harmful chemicals or heavy metals.
    b. Behavioral experiments using conditioning with aversive stimuli, mother/infant separation or induced helplessness.
    c. Studies of pain.
    d. Predator/vertebrate prey experiments.
5. Food and water cannot be used or withheld for more than 24 hours for maze running and other learning or conditioning activities.
6. The student and advisor have the responsibility to see that animals are properly cared for in a well-ventilated, lighted and warm location with adequate food, water and sanitary conditions. Care must be taken to see that organisms are properly cared for during weekends and vacation periods.
7. Livestock or fish raised for food using standard agricultural/aquacultural production practices may be euthanized by a qualified adult for carcass evaluation.
8. No vertebrate animal deaths due to the experimental procedures, including hunting or harvesting animals are permitted in any group or subgroup.
    a. Studies that are designed or anticipated to cause vertebrate animal death are prohibited.
    b. Any death that occurs must be investigated by a veterinarian or another professional qualified to determine if the cause of death was incidental or due to the experimental procedures. The Research SAE must be suspended until the cause is determined and then the results must be documented in writing.
    c. If death was the result of the experimental procedure, the study must be terminated, and the study will not qualify for the National FFA Agriscience Research SAE Program.
9. Research SAEs that involve behavioral studies or newly hatched chickens or other birds will be allowed, provided no change has been made in the normal incubation and hatching of the organism and all vertebrate rules are followed.

Hazardous Material

1. Material Safety Data Sheets (MSD Sheets) are required and must be included for all substances other than Water (H_2O) and Table Salt (NaCl).

2. All Hazardous substances used in the current year's research must be listed in the Hazardous Materials Form of the application.

Performance Review
1. Provide clear and concise information so that judges can understand the research SAE project(s) on which the Agriscience Research SAE Program application is based.
2. Only include information on the specific SAE project(s) that qualify in the selected Pathway. Information about plant growth of hydroponics in an Animal Systems Pathway is irrelevant and penalizes the application score.
3. The performance review section must be supported by details provided in the remainder of the application.

4. Teams of students can conduct Research SAEs, but this section of the Agriscience Research SAE Program application will only include an individual student's share of the work.
5. Suggested information to provide:
    a. What are your Research SAE project(s)? The most important piece of information to provide here is a clear, concise overview of the Research SAE project(s) for the judges. This helps the judges better understand the rest of the application. Remember that judges have only the information provided in the application. Be clear!
    b. Explain unusual Research SAE project aspects that helped start or sustain the Research SAE project(s).
    c. What interested you in this career area and motivated you to develop Research SAE project(s)?

Hours invested

1. Only enter details about the Research SAE project(s) on which this application is based.
2. Only include information on the specific SAE project(s) that qualify in the selected Pathway.
3. Teams of students can conduct Research SAEs, but this section of the Agriscience Research SAE Program application will only include an individual student's share of the work.
4. You can make multiple entries in each year. For example, if you work for two different research projects that fit into the same pathway, you can enter information for both in the year(s) you work for them.
5. Sections
    a. Year – This drop-down menu will include only the years you designated on the Basic Setup screen/page of the application. The earliest year available will be the year of the "Beginning Date" you entered. The latest year will be the year of the "Ending Date" you entered. Change these dates to make additional years available if appropriate.
    b. Select the year from the drop-down menu you wish to enter records for.
    c. Project Name – Enter the name of the Research project.
    d. Project Description/Research purpose or objectives – Provide the judges with a succinct but clear description of your Research SAE project, specifically including your responsibilities and purpose and objectives. Do not include duties or responsibilities from other SAE projects that do not fit the Agriscience Research SAE Program or other types of SAEs (Entrepreneurship, Placement, School-Based Enterprises, or Service Learning SAEs).
    e. TIP: Judges are looking for growth in responsibilities and duties over the years. Be sure your descriptions give details about any increased responsibilities, duties and skill growth.
    f. Hours Invested SAE—Enter the number of hours you invested in the Research SAE project(s) the application is based on. Only include information on the specific SAE project(s) that qualify in the selected Pathway.
    g. Tasks performed – This information should come from notes in your lab notebook.
    h. Knowledge and Skills Gained – Enter the specific knowledge and skills gained from this specific Research SAE project.

Collaboration

Research SAEs often involve collaboration with other students, teachers, and adult sponsors. Teams of students can conduct Research SAEs, but only an individual student's share of the work will be included in the Agriscience Research SAE Program application. The student should list the collaborators and their roles/responsibilities/description/ contributions to the project in the Collaboration section of the application. If the Research SAE involves other collaborators, contributors, and owners, especially for family-owned or school-based Research SAE programs, include only the student's share in all other sections of the Agriscience Research SAE Program application.

Financial Records

1. The income and expense summary is a yearly summary of annual income and expenses from the Research SAE project(s) that qualify in the selected Pathway.
2. The dates entered in the application on the Basic Setup screen/page set your application years.
3. Your records should be organized by calendar year. If your SAE records have a short year (example: four months) and then a complete year (12 months), you will need to separate the records into two calendar years.
4. Information in Expenses should be separated by year and project.
5. Additionally, students should show the total cost, as well as the student share and other party share.

Skills, Competencies and Knowledge

This section of the application is linked to the Agriculture, Food and Natural Resources Standards (AFNR Standards) established by the National Council for Agricultural Education. This section of the application requires applicants to show how the included SAE project(s) meets AFNR Standards.

The application provides the opportunity to select 10 standards: five from the primary pathway you selected, two from any AFNR pathway and three from Cluster Skills and/or Career Ready Practices.

1. **A. Select up to 5 primary pathway standards/performance indicators you have gained skills, competencies, or knowledge in through your SAE project.–** This table in the application is controlled by the primary pathway selected on the application's Basic Setup page. If you decide the offered standards do not match your SAE project well, consider returning to the Basic Setup page and choosing a more appropriate primary pathway.

   If you find that no AFNR Standards match your SAE project well, you should consider whether your SAE project is actually within any agriculture, food or natural resource pathway. SAE projects determined to not fit within these standards are rated Participant in the judging process.

   a) **AFNR Performance Indicator from Primary Pathway –** Select up to five indicators which match your SAE and activities from the drop-down menus.

   b) **Specifically describe the SAE activities performed to learn or demonstrate the performance indicator selected. –** Concisely and clearly explain what you did that directly and clearly relates to the selected standard. Describe how the activity contributed to the success of the included SAE project(s) and how it demonstrates performing the selected standard.

TIP: The written description needs to match the selected standard directly and closely.

2. **B. Select up to 2 pathway standards/performance indicators from any pathway you have gained skills, competencies, or knowledge in through your SAE project. –** This table allows selection from any AFNR Pathway, Cluster Skill and Career Ready Practice.

   a) **AFNR Performance Indicator –** Select up to two AFNR Performance Indicators from the drop-down menus.

   b) **Contributions to Success** – Concisely and clearly explain what you did that directly and clearly relates to the selected standard. Describe how the activity contributed to the success of the included SAE project(s) and how it demonstrates performing the selected standard.

3. **C. Select up to 3 Career Ready Practice and/or Cluster Skill content standards you have gained skills, competencies, or knowledge in through your SAE project**. – These selections are limited only to Cluster Skills and/or Career Ready Practices.

   a) **AFNR Performance Indicator –** Select up to three CRP or CS Performance Indicators from the drop-down menus.

   b) **Contributions to Success** – Concisely and clearly explain what you did that directly and clearly relates to the selected standard. Describe how the activity contributed to the success of the included SAE project(s) and how it demonstrates performing the selected standard.

TIP: Do not be repetitive. Avoid selecting the same standard multiple times and certainly do not describe the same activity more than one.

Checklist

The application includes an automated checklist to help find errors or information missing from the application. It will not find every possible error. A clean checklist does not guarantee that the application won't be penalized.

1. NOT MET, MISSING or ERROR **–** The application cannot be submitted for national-level competition if there are any "Not Met," “Missing” or “Error” items in red font on the checklist. This signifies incorrect or missing information that may prevent the application from qualifying.

2. REVIEW – A checklist item that says "Review" in red font is not an error and may be fine. The checklist is simply calling attention to information in the application that should be double-checked. Applicants are advised to make sure the information the item points to is clearly explained in the application.

3. **MET –** Ideally, all items on the checklist should say "Met" in green font. This does not mean the application is perfect and without errors. It does mean everything the computer can automatically check for has been cleared.

TIP: Computers are not as smart as people. The computer can check whether or not a box contains text or numbers; it can't determine if the text or numbers are correct information. A clean checklist does not guarantee that the application has no errors.

Electronic Signatures

Carefully read the signature statements before electronically signing the application. Commitments are being made for all signatories — know what you are signing.

1. **Student Approval –** This is the signature of the applicant. Information can only be entered when the applicant is correctly signed into their electronic account.

2. **Advisor Approval –** This is the signature of the supervising agricultural education teacher/FFA advisor. The advisor's signature is required to verify and certify the application. The advisor must be signed in to their electronic account to enter information here.

3. **Request for Parent/Guardian Approval –** This area is for the parent/guardian to certify the information in the application and give permission for information to be used.
   a) Enter the email address of the parent/guardian whose signature is being requested and click the "Request Signature" button. The application will send an email to that address.

      i) The parent/guardian must open the email message, click the link and follow the instructions to sign the application electronically.

   b) **Adult Sponsor –** This signature is for the adult sponsor or supervisor to verify that the application information is accurate.

      i) Enter the email address of the "Adult Sponsor" whose signature is being requested and click the "Request Signature" button. The application will send an email to that address.

      ii) The Adult Sponsor must open the email message, click the link and follow the instructions to sign the application electronically.

Save Your Application

Judges do not access the live online application. The live application can be constantly accessed by applicants and is ever-changing. The document that judges review is the specific, time-stamped PDF version of the application that is generated and submitted. If no PDF of the application is generated by completing the following steps, there is nothing to be submitted or judged.

1. **Complete/Save Your App –** The button labeled "Complete/Save Your App" is how application PDF versions are generated (created). This generated PDF is what is submitted and judged. As versions are generated, they are listed in the table on the screen. Which version to submit is chosen by the applicant.

2. **Get PDF –** To view the generated application, click the "Get PDF" button next to each listed version. What you see when you open this file is what is being submitted for the judges to review, possibly minus some pages depending on your state *(see details below in the Application Submission and Judging sections).*

Application Submission

Each state FFA association has its specific directions and deadlines for submitting applications for local/state judging. Consult with the chapter FFA advisor or state FFA staff for these instructions.

Only state staff may certify and submit applications for national judging. Instructions for state staff to submit applications online are provided yearly by national FFA staff and available in the State Staff Dashboard on FFA.org.

Each state association may submit a single application for national-level competition in each award area available at the national level each year.

Disqualification

An Agriscience Research SAE Program application will be disqualified if

1. Participant arrives after the designated interview time.
2. Any assistance is given to a participant from any source other than the Agriscience Research SAE Program officials or assistants once judging has begun.
3. Agriscience Research SAE Program officials stops any participants for manners they deem to be hazardous to themselves or others. Such removal will constitute immediate disqualification.
4. The participant does not complete the event they start, unless prior permission from the event officials has been obtained.
5. Participant accesses and/or utilize personal electronic communication devices during the entire course of the event. Participants who access personal electronic communication devices without prior approval will be disqualified (examples include iPads, tablets, computers, cell phones, WiFi devices, etc.).
6. An advisor, coach, parent or fellow chapter member is in the interview area once judging officially begins. Any advisor, coach, parent or fellow chapter member found in the interview area may disqualify their participant.
7. A student substitution is made. See the “Interview” section of this handbook for more information.
8. The participant fails to meet any rules or participation guidelines set forth in this handbook.
9. Participant commits plagiarism.
10. Participants conducts unethical research.
11. The student has previously placed in the top three of a division and pathway at the national level and competes again in the same division and pathway.
12. Participant alters the application and/or written report template.

Professional Integrity

FFA members participating in national FFA programs and events understand and agree that all work must result from their own effort and ability, created, and completed alone (except for partner or chapter applications). When outside sources (direct quotes or phrases, specific dates, figures, or other materials) are used for a project, document, or application, the required reference citation must be completed according to the rules specified by the applicable handbook.

While participating in National FFA programs, FFA members are prohibited from:

- Plagiarizing
- Violating copyright
- Cheating
- Falsifying information
- Using another person’s results or thoughts as their own, even with this person's permission. This includes work done by a family member or a mentor.
- Using information or data obtained from the internet without proper citation.

Any attempt to gain an unfair advantage will not be tolerated. Non-compliance represents plagiarism and will automatically disqualify a member.

Use of Artificial Intelligence (AI) for National Events

Artificial intelligence (AI) refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions, or solving problems. As AI continues to evolve, it can be a tremendous tool to help companies, organizations and individuals enhance their productivity and work. Therefore, the

National FFA Organization allows the use of AI tools. FFA members may use AI tools, such as ChatGPT, Gemini, and CoPilot, to assist them in their learning.

Appropriate uses of AI may include:

- generating ideas for any FFA-related assignments, projects, contests and award applications
- checking facts of a phenomenon
- checking for and correcting grammatical errors in a paper written by a member

For more information, please see the Standard Operating Procedures on the Use of Artificial Intelligence (AI) for National Events document.

Code of Conduct

FFA members participating in National FFA programs understand and agree to abide by the National FFA Code of Conduct.

Required Forms

As a part of the national competition application process, the application and written report must be approved online by July 1. This date serves as the national Agriscience Research SAE Program application and certification deadline. The required forms are located in the Application Center on FFA.org.

Accessibility for All Students

All accommodation requests must be submitted 30 days prior to the start of the event and are outlined on ffa.org.

State Selection and Certification of Participants

States must electronically approve and submit applications to National FFA by July 1.

- The state advisor or state FFA officials must certify that participants are eligible. If an ineligible student participates in the Agriscience Research SAE Program, the member will be disqualified.
- Members must qualify at the state level in the pathway and division in which they are to participate at the national level.
- Applications must be selected at a state or interstate Agriscience Research SAE Program held between the immediate previous national FFA convention and prior to the national FFA convention in which they are participating.

Agriscience Research SAE Program Prequalifying

All students qualified to participate in the National FFA Agriscience Research SAE Program must have their completed written report, entry form and all supporting forms submitted and approved online by July 1. Incomplete submissions will be marked as participants only and not ranked.

A maximum of 6 applicants in each pathway and division, as determined by a screening panel using the appropriate prequalifying rubric, will be National Finalists at the National FFA Agriscience Research SAE Program. Please review the Scoresheets and Rubrics section of this handbook for more information.

Scores from the written report submitted for prequalifying will count as 25 percent of the overall score. Interview judges will not see the scores from the written report, and the interview score will account for 75 percent of the overall score.

If an application is missing a report component, for example the Acknowledgements, this section of the scorecard at the prequalifying judging event will be marked as a zero and will be taken into account for the prequalifying score.

NOTE: If an application is entered in the wrong pathway, the Skill Development section on the rubric will receive zero (0) points.

Recognition

Chapter level: Winners may be selected annually in each FFA chapter. The winner can represent any of the Agriscience Research SAE pathway areas (based on state rules for competition).

State level: Winners from each division in all pathways may be selected annually in each of the chartered state FFA associations. Each of the winners' applications and reports should be submitted to National FFA for National Finalists Selection. See the "Agriscience Research SAE Program Prequalifying" section of this handbook for more information.

National level: Selected participants from each state may be forwarded for national competition. A maximum of 6applicants in each pathway and division will be considered national finalists and invited to compete in the National FFA Agriscience Research SAE Program interview to be held virtually each September. All national finalists are expected to participate in a scientific career exploration, networking, and immersion experience at the National FFA

Convention & Expo. During this time, students will present their research and engage/network with universities and sponsors about their research. The orientation packet will release more details pertaining to National Winner Selection, mid-year.

Application Components

The full written report and application must be submitted by State FFA Associations to National FFA by July 1 for the prequalifying judging event facilitated by National FFA.

Application Components:

1. Cover Page
2. FFA Membership
3. Adult Sponsor Checklist
4. Hazardous Materials
5. Human Vertebrates
6. Non-Human Vertebrates
7. Performance Review
8. Hours Invested
9. Learning Outcomes
10. Collaboration
11. Skill Development
12. Financial Records
13. Abstract
14. Upload Research Plan/Project Summary (See Research Plan/Project Summary below)
15. Checklist
16. Electronic Signatures

Research Plan/Project Summary

A complete Research Plan/Project Summary is required for all Agriscience Research SAE Program applications. This Research Plan/Project Summary includes the results of one of the student's research problems or questions that concluded in the calendar year before the program year. In 2025, for the implementation year, a probationary period will allow 6 months of additional time for data collection and should end by or before 6/30/2025. Therefore, for 2025, the Research Plan/Project Summary includes the results of one of the student's research problems or questions that concluded between January 1, 2024, and June 30, 2025. For 2026, student's research problems or questions must be concluded in the 2025 calendar year.

Format of Research Plan/Project Summary

The report should be printed on 8 ½ x 11-inch white paper. The report will have 1-inch margins. Font size must be 12 using Times New Roman font.

TYPE

Experimental, Analytical or Invention

ABSTRACT

A brief summary of the research, which concisely describes the purpose, methods, results and conclusions. The abstract may include potential research applications or future research. The abstract should not contain cited references.

It should be no longer than one page and in paragraph form. Because this is the first page of the report, it will be where the reader forms an opinion on the study. In the abstract, arrange the points in this order:

1. Purpose.
2. Procedure.
3. Results.
4. Conclusions.

This section would include methods, primary results/effects of major treatments and main conclusions. Do not include discussion, citations and footnotes, or references to tables and figures.

INTRODUCTION

The introduction answers the question, "Why was the work done?" It provides background on the subject in several paragraphs. The introduction should clearly state the problem that justifies conducting the research, the purpose of the research, its impact on agriculture, the findings of earlier work, and the general approach and objectives. You must cite sources for statements that are not common knowledge. The last paragraph of the introduction includes the objectives of the study.

LITERATURE REVIEW

The literature review should detail what information currently exists concerning the Research SAE. Information in the review should be written in APA style and should include publications used for the research. Publications cited could include articles about similar studies, similar research methods, history of the research area, and any other items that support the current knowledge base for the research topic and how the research SAE might complement existing information.

MATERIALS AND METHODS

A well-written materials and methods section enables others to reproduce the results by replicating the study. Write in past tense, third person, encompass all materials required, state the hypothesis/research questions and explain the study design by sharing the technical and experimental procedures employed. With fieldwork, describe the study site. Include any statistical procedures employed. This section should be a narrative rather than a list of steps on how to do the process.

RESULTS

This section is a summary of the results, even if they are not what was hypothesized. Do not include discussion or conclusions about the data. Tell the reader exactly what was discovered and what patterns, trends or relationships were observed. Decide on the most meaningful way to present the data (tables, figures), and refer to them in the text. Data should be able to stand alone in the form of tables and/or figures. Pictures, surveys, or other materials that are not tables can be referenced here, but included at the end of the report in the Appendices. Follow the APA style guide for formatting. Data should not be added after the state level selection as it may alter the discussion and conclusions.

DISCUSSION AND CONCLUSIONS

In this section, draw conclusions from the results of the study and relate them to the original hypothesis. It is helpful to briefly recap the results and use them as a foundation for the conclusions. If the results were not what was expected, take this opportunity to explain why. Give details about the results and observations by elaborating on the mechanisms behind what happened. Tie the study in with the literature, but do not hesitate to offer sound reasoning of your own. Discussion should refer to facts and figures in the results section and provide recommendations for practice and future research. Discussion and conclusions should also address the impact the research has on the agriculture industry.

ACKNOWLEDGMENTS

Acknowledge anyone who helped in any aspect of the research SAE in this section.

REFERENCES

Only significant, published and relevant sources accessible through a library or an information system should be included. All citations in the text must be included in the reference section. When information or facts are used that are not common knowledge, give credit to the source of that information by citing a reference. Use the APA style recognized citation system throughout the report.

APA STYLE/SPELLING

The student should use correct spelling, complete sentences, proper grammar and appropriate APA-style writing throughout the report.

Interview

All national finalists are required to meet virtually with the judges to explain their Research SAE. Explanation and questioning may not exceed 15 minutes. The interview is an opportunity for judges to ask questions about the application. Judges will ask questions to determine the extent of the knowledge gained, your understanding of your research, how it relates to your Research SAE and possibly how your SAE relates to other FFA activities. The following is a list of example questions that may be asked:

1. How and why was the Research SAE selected?
2. What was your goal? What did you plan to accomplish in your Research SAE?
3. Were there any surprises in your Research SAE? How did you handle them?
4. What did you learn from the experience?
5. How much time did you devote to your Research SAE?
6. What kept you from being discouraged?
7. How did you manage time for this Research SAE in relation to your other activities?
8. How would you advise others doing a Research SAE? What is the value of completing a Research SAE?
9. How can your findings and conclusions be applied in the agriculture, food and natural resources industry?

Interview Schedule Conflicts

All national finalists are required to interview with the judges to explain their Research SAE. Participants unable to meet with judges during the allotted time will be disqualified. The interview schedule will be released 30 days prior to the start of the first interview. Substitutions are not permitted. No exceptions will be made due to participation in other events (i.e., National FFA Band or Chorus).

Official Dress

Participants are expected to observe the National FFA Code of Ethics and the proper use of the FFA jacket during the Agriscience Research SAE Program. (Please reference the latest edition of the Official FFA Manual.) Official dress is highly recommended for the interview and awards presentation and recognition.

Scoresheets and Rubrics

This section contains rubrics utilized by judges to evaluate written reports and interviews.

- Prequalifying (Application/Report) Rubric
- Convention (Interview) Rubric