AGRI SPRAY DRONES
13620 Old Highway 40, Boonville, MO 65233 573-519-5000 agrispraydrones.com

U.S. Spray Drone Industry Advancement Initiative

Academic Partner Program

Purpose of the Academic Track

The academic arm is designed to complement the operator track by generating scientifically rigorous, transferable, and peer-review-ready insights into spray drone performance. While operators contribute real-world, commercial data, academic partners contribute controlled, repeatable, research-grade outputs.

The academic program aims to:

- Expand the national dataset of spray drone efficacy, drift behavior, environmental impacts, and application performance across crop systems.
- Validate and compare spray drone settings, nozzle types, droplet spectra, deposition patterns, and operational variables.
- Produce research that supports regulators, industry stakeholders, and growers in understanding where spray drones outperform, match, or underperform existing tools.
- Establish a more coordinated, collaborative national network of spray drone researchers — addressing a major gap the initiative aims to correct.
- Generate publishable results that accelerate responsible adoption and strengthen the technology's credibility.

2. Academic Research Categories

To ensure diversity and depth, academic partners may fall into one or more research tracks:

A. Application Mechanics & Performance

Examples include:

- Droplet size characterization
- Nozzle comparisons
- Deposition patterns (collector cards, water-sensitive paper, fluorescent dye)
- Effect of altitude, speed, and overlap

B. Efficacy-Focused Trials

Examples include:

- Pest, disease, or weed control efficacy
- Fertility, PGR, and specialty-crop trials
- Comparative studies: spray drone vs ground rig vs helicopter vs air tractor
- Multi-pass vs single-pass application outcomes

C. Environmental & Safety Studies

Examples include:

- Drift potential under variable conditions
- Wind, humidity, thermal inversion interaction
- Buffer compliance and risk mitigation

D. Economics & Labor Research

Examples include:

- Cost-per-acre and efficiency analysis
- Turnaround times & labor savings

- Adoption barriers & grower perception

Each academic partner must clearly articulate which category they intend to contribute to — AND how that aligns with the broader goals of the initiative.

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3. Committee Structure & Ownership

A. Academic Research Committee

This committee oversees academic partner engagement, project alignment, and scientific quality. Roles:

Scientific & Research Lead

- Primary liaison with academic institutions on all scientific matters.
- Ensures each institution's proposed work is feasible, valuable, and aligned with program goals.
- Reviews protocols, trial plans, and preliminary results.

Communications, Marketing & Content Lead

- Manages public announcements when institutions are onboarded.
- Ensures research activities are documented for PR, content, and storytelling.
- Coordinates media moments at key academic milestones (trial launch, mid-season update, results release).
- Ensures academic partners understand content expectations and deliverables.

Additional optional roles:

- **Technical Coordinator:** Ensures each institution receives training, firmware updates, troubleshooting, etc.

4. Vetting Framework for Academic Institutions

Before selection, each academic applicant will be assessed for suitability, impact potential, and alignment.

A. Required Vetting Criteria

1. **Clarity of Research Objective:**
    - Are they proposing high-value or redundant work?
    - Is the research design scientifically meaningful?
2. **Institutional Capacity:**
    - Do they have access to plots, crops, or conditions needed?
    - Do they have staff, students, or technicians who can execute trials?
3. **Track Record & Credibility:**
    - Have they published or conducted related research in spray, application technology, drones, or agronomy?
4. **Alignment With Initiative Goals:**
    - Does the work help build the U.S. spray drone knowledge gap?
    - Will results support operators, regulators, and industry adoption?
5. **Willingness to Collaborate:**
    - Must be willing to share protocols, participate in monthly check-ins, and coordinate with ASD/EAV.

- Willingness to share non-sensitive results publicly.

6. **Content & Visibility Willingness:**
    - Can they provide trial documentation, photos, methodology explainers, etc.?
    - Are they open to being publicly identified as program participants?

B. Optional Prioritization Criteria

- Geographic diversity (to ensure a national dataset).
- Specialty crop environments underrepresented in other research.
- Strong history of Extension engagement (helps with farmer-facing education).

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5. Academic Partner Expectations

A. Research Deliverables

Each institution must commit to:

- A trial plan submitted before the season begins.
- A mid-season progress update (brief).
- A full-season report including data, photos, metadata, and analysis.
- Participation in at least one field day, webinar, or training recap.

B. Operational Requirements

- Must complete J150 training (in-person at ASD HQ, unless waived due to equipment competency).
- Maintain FAA compliance for all operations.
- Use approved nozzles, payloads, and flight settings unless intentionally testing something else.

C. Content Requirements

- Minimum 2–3 pieces of content per season:
  - "Trial kickoff" photo/video
  - "Mid-season update"
  - "Preliminary results or observations"

- Willingness for ASD/EAV to re-share content with attribution.

D. Collaboration Requirements

- Monthly virtual check-in with committee.
- Share data in standardized templates.
- Coordinate with operator participants if local collaboration opportunities arise.

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6. Annual Workflow for Academic Partners

Phase 1 — Application & Vetting (Dec–Feb)

- Institutions apply via the same form as industry operators - deadline – 02/28/2026
- Scientific lead reviews research alignment and feasibility.
- Marketing lead prepares onboarding communications.
- Committee approves the final cohort.

Phase 2 — Project Setup (March–Apr)

- Trial plans finalized.
- J150 training completed.
- Public announcement of selected academic partners.
- Partners onboarded

Phase 3 — Active Research Season (Apr–Oct)

- Trials run
- Monthly check-ins.
- Content captures staged at meaningful points.

Phase 4 — Results & Knowledge Sharing (Oct–Dec)

- Institutions submit final reports.
- ASD rolls out results through PR, social, webinars, and collaborative publications.

7. Partner Onboarding

PHASE 1 — Pre-Onboarding (Before Acceptance)

This phase ensures partners are qualified and prepared *before* they're officially onboarded.

1. Application Review & Vetting

- Academic applications come through the unified form
- Committee evaluates based on:
  - clarity of research goals
  - capacity & access
  - alignment with initiative category
  - willingness to collaborate & share updates

2. "Provisional Acceptance" Email

If accepted, the applicant receives an initial, provisional acceptance email with further onboarding instructions.

PHASE 2 — Official Onboarding (The First 2 Weeks)

1. Welcome Email Packet

Applicant receives welcome email packet, containing welcome letter and getting started checklist. Checklist items may include:

- Confirm research category
- Submit Trial Plan
- Sign Data & Content Agreement
- Schedule J150 training
- Review Prohibited Content section
- Provide PR bio + headshot
- Join relevant communication channels
- Add monthly check-in to calendar

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2. Kickoff Call

A standard 30–45 min onboarding call with a clear agenda:

A. Welcome + Initiative Purpose

B. Overview of Research Goals

- Why this matters
- What we're trying to accomplish nationally
- Where their institution fits into the broader picture

C. Review of Proposed Trial(s)

- Ensure methodology is aligned
- Identify any missing pieces
- Clarify droplet cards, nozzle types, etc.

D. Content/Documentation Expectations

- Minimum # of content pieces
- How to submit photos

- How ASD/EAV will use their content
- Timing expectations

E. Logistics

- Training date
- Delivery timing
- Monthly check-in schedule

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3. Trial Plan Submission

Each institution must submit a standardized template:

- Crop or target
- Acreage or plot size
- Treatments / comparisons
- Nozzle selections
- Measurements (droplet cards, deposition, efficacy, etc.)
- Timeline
- Expected outputs
- Personnel roles

This step ensures quality and avoids mid-season surprises.

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4. J150 Training & Competency Verification

Two options:

- In-person at ASD HQ
- Remote with structured competency check (if permissable)

Training completion triggers “device handoff” or “device activation.”

PHASE 3 — Activation (0–30 Days After Onboarding)

1. First Content Deliverable

Each partner must submit an early content piece:

- "Meet Our Research Team"
- "We've Joined the Initiative"
- "Unboxing the J150"
- "Here's What We're Studying"

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2. Development of Public-Facing Materials and Announcements

- Website
- Social announcement
- Press release
- Internal map of partner locations
- Featured institution spotlight series

PHASE 4 — Ongoing Management System (Throughout the Season)

1. Monthly Check-Ins

15–20 minutes

- Progress update
- Any adjustments
- Weather or crop timing considerations
- Problems with drone or application
- Early observations

Optional: group cohort calls quarterly.

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2. Mid-Season Update Report

One-page template:

- Trial status
- Photos
- Any preliminary results
- What's working / what's not

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3. Rolling Content Submissions

- 1 photo or video every 4–6 weeks
- Short captions describing what's happening
- Permission to reshare
- "Explain your trial in under 60 seconds"
- "Show droplet cards pre/post analysis"
- "Show a behind-the-scenes setup"
- "Time-lapse of flight path testing"

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4. Tech + Compliance Support

- Ensure firmware updates are applied
- Provide quick troubleshooting
- Maintain FAA compliance guidance
- Provide best practices for drift mitigation

PHASE 5 — End-of-Season Wrap-Up

1. Final Research Report

Submit via a standardized format:

- Objectives
- Methods
- Conditions
- Raw results
- Visuals
- Conclusions
- Recommendations for industry

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2. Results Webinar or Roundtable (details to be finalized)

Partners present:

- Key findings
- Surprises
- Recommendations

This builds community AND strengthens the initiative's credibility.

3. Final Content Deliverables

- Recap post
- Final results summary
- Behind-the-scenes reflection