

POST-SECONDARY EDUCATION **DUAL-USE DESIGN CHALLENGE**



FARMING THE SUN, FEEDING THE FUTURE

Context

Rural communities across the country face a growing challenge: how to balance the opportunity for solar energy production with the preservation of agricultural land. As the demand for solar energy increases, farmers are often faced with the difficult choice of either continuing traditional farming or leasing their land for solar development. However, new approaches in agrivoltaics and ecovoltaics offer a solution—integrating solar panels with crops, livestock grazing, and ecosystem services to create a mutually beneficial land-use strategy. The challenge lies in designing systems that are economically viable, agriculturally sustainable, and socially accepted by rural communities.

Grounding Phenomenon

A farmer in your region is considering leasing part of their land to a solar developer but is concerned about losing productive farmland. They are open to exploring agrivoltaics—using solar panels in a way that supports continued farming—but they need a well-researched, practical plan that addresses economic, environmental, and operational concerns. Your challenge is to design an agrivoltaic or ecovoltaic system that balances energy production with agricultural productivity and/or conservation while considering financial sustainability, regulatory constraints, and community impact.

Essential Questions

- ☀️ How can solar energy and agriculture coexist on the same land without compromising food production or farm profitability?
- ☀️ What innovative business models can make agrivoltaics financially feasible for farmers?
- ☀️ How do factors like soil health, water management, animal welfare, and plant growth change in an agrivoltaic or ecovoltaic system?
- ☀️ What infrastructure or technological advancements could improve the efficiency of dual-use land systems?
- ☀️ How can we communicate the benefits of agrivoltaics to farmers, policymakers, and consumers to encourage adoption?

Why This Matters

As issues such as food security, agribusiness resilience, and energy independence become more pressing, agrivoltaics presents a promising opportunity to create more abundant agricultural systems and rebuild natural ecosystems. Your innovative ideas could help shape the future of sustainable land management, benefiting farmers, ranchers, and communities.

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Design Challenge

Using your knowledge in **agriculture, business, engineering, education, environmental science, and/or natural resources**, design an agrivoltaic or ecovoltaic solution that could be implemented. Your proposal could focus on one of the following career pathways:*

- ☀️ **Agribusiness Feasibility:** Financial models, revenue streams, cost-benefit analysis, and scalability.
- ☀️ **Animal and Plant Systems:** Farm plan for integrating crops and/or livestock under or around solar panels.
- ☀️ **Environmental Impact:** Effects on soil health, water conservation, biodiversity, and carbon sequestration.
- ☀️ **Structural and Technological Innovation:** Engineering solutions to maximize efficiency, optimize solar tracking, and/or integrate smart farming techniques.
- ☀️ **Education and Community Engagement:** Strategies for listening, discussing, informing and influencing stakeholders about the benefits of agrivoltaics.

*See ideas in the [Resources folder](#).

Additional Support & Resources

- ☀️ **Technical Guidance:** Access research on agrivoltaic systems, soil health, livestock integration, and solar panel efficiency.
- ☀️ **Industry Experts:** Interview with farmers, solar developers, and/or agribusiness professionals.
- ☀️ **Case Studies:** Analyze real-world examples of successful agrivoltaic projects.
- ☀️ **Funding and Incentives:** Research grant opportunities, government policies, and financing options for agrivoltaics.
- ☀️ **Community Input:** Conduct surveys or outreach to understand rural perspectives and stakeholder concerns.

Find resources from leading organizations, studies, stories, conference archives, and more at <https://solarfarmsummit.com>

Competing entries due June 11

Showcase only entries due July 21

Showcase and Awards August 7 at the 2025 Solar Farm Summit



Your deliverable can take the form of a **business plan, engineering prototype, educational curriculum, policy brief, or multimedia communication strategy** tailored to your area of expertise.

Students can participate as an individual or on a team.

Submit your project at <https://solarfarmsummit.com/student-design-challenge>

A Collaboration Between



The [Solar Farm Summit](#) is America's agrivoltaics conference and farming + solar exhibition, bringing together experts, farmers, researchers, and innovators to explore the future of agriculture and energy. Finalists in the Dual-Use Design Challenge will have the opportunity to showcase their projects at the 2025 Solar Farm Summit, win cash prizes, and receive public recognition as well as direct introduction to industry leaders and professionals on the cutting edge of agrivoltaics during the industry's most collaborative and constructive event.



The [InSPIRE](#) project (**I**nnovative **S**olar **P**ractices **I**ntegrated with **R**ural **E**conomies and **E**cosystems) is the nation's longest running and largest agrivoltaics research initiative. InSPIRE explores how solar energy can be co-developed with agriculture and native landscapes, conducting field research, providing data-driven insights, and convening experts across disciplines. By advancing our understanding of agrivoltaics and other dual-use solutions, InSPIRE supports the scaling of solar projects that benefit both landowners and ecosystems.

If you would like to join us at the **2025 Solar Farm Summit in Chicago, IL August 4-7**, please visit <https://solarfarmsummit.com> or reach out to admin@solarfarmsummit.com.