THE ORGANIC CENTER

April 15, 2025

Ms. Michelle Arsenault
National Organic Standards Board
USDA-AMS-NOP
1400 Independence Avenue, SW
Room 2648-So., Ag Stop 0268
Washington, DC 20250-0268

**RE: Materials Subcommittee - Research Priorities Spring 2025 (Discussion Document)**

Dear Ms. Arsenault:

Thank you very much for this opportunity to provide comments on the Materials Subcommittee proposal on the Spring 2025 Research Priorities.

The Organic Center is a non-profit organization with the mission of convening credible, evidence-based science on the environmental and health benefits of organic food and farming and communicating findings to the public. We are a leading voice in the area of scientific research on organic food and farming, and cover up-to-date studies on sustainable agriculture and health while collaborating with academic and governmental institutions to fill knowledge gaps. We work closely with other non-profit organizations and stakeholders across the value chain to inform our understanding of research needs to support the organic sector and movement as a whole.

In the past year we have increased our engagement with farmers and researchers in the Southeastern part of the U.S. to expand our understanding of knowledge gaps and to identify pathways to increase research and extension in this region. In late 2023, alongside Tuskegee University, Clifbar, and the Foundation for Food and Agriculture (FFAR), we co-hosted a virtual listening session that informed an in-person multi-stakeholder event we co-hosted in November 2024 in Montgomery, Alabama. These events have increased our understanding of a region we've had less engagement with in the past and therefore our recommendations better reflect the comprehensive research needs for the whole U.S.

We have also increased our global collaborations, particularly through increased engagement with IFOAM Organics International and its regional bodies of the European Union and Asia, which gives us a better understanding of international research resources that can help fill U.S. research gaps, and knowledge gaps that still exist globally (e.g. how organic can improve dryland farming), and the market/business landscape of organic at a global level that can inform U.S. research needs.

The Organic Center thanks the Materials Subcommittee for its recommendations on Research Priorities. We appreciate the creation of the Research Priority Framework and the efforts to set priorities, and offer the following recommendations for priority changes and addition of topics that are of high importance and not yet included on the current list.

**Summary:**

- ✓ The Organic Center generally supports the subcommittee's proposed Spring 2025 Research Priorities. The proposed priorities are in line with the needs of the organic community, and will serve as an important resource to guide The Organic Center's research priority focus and project development.

- ✓ Based on feedback we have received during our stakeholder engagement efforts, we suggest that some ongoing crop research topics be elevated to top research priorities like whole farm assessments, nutrition comparisons, weed management and expanding nursery stock. We also recommend adding topics that we have identified as missing to the research priority list, particularly in the areas of measuring whole and true costs/benefits of food systems (e.g. True Cost Accounting, Life Cycle Assessments, health outcomes), water quality, socioeconomic impacts of organic, and measurements of the effectiveness of research outreach.

- ✓ While not a research *topic*, we suggest that USDA administration processes for funding applications be flagged as an important consideration that impacts the experience of the grantee and ultimately the quality of proposed research.

We offer the following more detailed comments:

**RESEARCH PRIORITY ADJUSTMENTS**

We have reviewed the list of topics included for Spring 2025 Priorities, and we were particularly pleased to see the inclusion of the following topics and recommend an increase in their priority:

1. Whole farm ecosystem service assessments to determine the economic, social, and environmental impact of farming systems choices,
2. Factors impacting organic crop nutrition, and organic/conventional nutrition comparisons,
3. Strategies for the prevention, management, and control of problem insects, diseases, and weeds in light of a changing climate, and how to anticipate or predict new pest problems. Systems-based approaches are emphasized.

We encourage the subcommittee to elevate the priority of these topics, placing the highest priority on whole farm assessments, which will arguably require the greatest injection of resources to execute. There is a general deficiency in research results for all of the above topics and these results are of great need and interest to farmers, consumers and businesses, (especially those making investment decisions influenced by Environmental Sustainability Goals and Science Based Targets), and policy makers—particularly when health outcomes, socioeconomic outcomes, and external costs are included in these assessments.

*1. Whole farm ecosystem service assessments to determine the economic, social, and environmental impact of farming systems choices:*

Comprehensive studies that measure holistic functions of organic practices are largely lacking, but offer critical insights that can 1) Help farmers know to either maintain course or adjust their methods and give guidance on best practice adjustments, and 2) Provide critical evidence to demonstrate the true value of organic farming to stakeholders across the supply chain, influencing market demand, business investments, and political support. Because of the extreme need and potential influence on the ability to grow the organic industry and movement, we recommend that this research priority be increased within the top priority list.

**Topic Additions:** We also recommend that either this topic OR the topic "*Ecosystem service provisioning and biodiversity of organic systems*" be refined to emphasize a need to measure true costs (e.g. TCA, LCA, health outcomes), both positive and negative, of all assessments on organic farms and also include conventional counterparts for comparison. Currently there are much more published data available for practice outcomes on non-organic farms, so collation of existing data for reviews or meta-analyses will be possible and a smaller lift than collecting the much-needed primary data from organic systems, particularly those that are more diversified across space and time. However, direct comparisons in the field in the same space and time will be more powerful.

We call out the organic to non-organic comparison because the OREI program does not encourage these kinds of studies for its funding priorities at the moment. We advocate for their inclusion in the OREI program *or* adding this as a priority in other NIFA programs if this pathway is more feasible .

The topics of **true cost accounting (TCA)** and **life cycle assessments (LCA)** may be some of the most pressing research needs at the moment as consumers, businesses and policymakers are asking for more outcomes-based evidence to justify their spending/support for organic. Collecting more primary data to feed into models that the market is using to value businesses and organic production, is essential. Currently a dearth of appropriate data exists for such models, and the models themselves need to be adjusted to better fit the complexity of the organic production system both in space and time. Current models also do not consider whole-system externalities of the use of agrochemicals (including their manufacturing) or the benefits of not using these chemicals in organic. Consequently, *results are often skewed in favor of conventional farms* which reiterates misconceptions about organic such as the need to convert more virgin land to farming if we want to feed the world with organic.

Our engagement with businesses using these existing models as well as LCA and TCA practitioners and researchers over the past three years indicates that this is a critical situation that will continue to hinder the ability of the organic market to grow fueling our recommendation to move this to the top of the priority list. Specifically, we've learned that because the shortcomings of models used as a standard measurement of sustainability are failing to show the benefits of organic there have been a devaluation of organic companies, decisions to switch from sourcing organic to conventional ingredients, and the perpetuation of misguided information delivered to consumers.

*2. Factors impacting organic crop nutrition, and organic/conventional nutrition comparisons.*

This topic is growing in popularity amongst consumers who want to better understand the benefits of organic food to themselves and their families. While the interest in potential dietary exposure to pesticide contamination is of concern, the most recent OTA Consumer Survey shows that consumers are most willing to pay for products that they believe to be healthy and nutritious. Published research predominately shows that organic crops have more micronutrients and antioxidants, and that organic animal products like dairy and meat contain healthier fatty acid profiles, antioxidants, and increases in some vitamins and minerals, but much more research in this area is needed to make conclusions robust and comprehensive of a wide range of crops/ingredients. Given the high consumer interest in this topic and therefore the potential for this research topic to improve the market for organic products, we recommend that this research topic be elevated to a top priority.

*3. Strategies for the prevention, management, and control of problem insects, **diseases**, and **weeds** in light of a changing climate, and how to anticipate or predict new pest problems. Systems-based approaches are **emphasized***

First, we recommend that the system-based component of this topic be prioritized, not just emphasized. Given surveys conducted by National Young Farmers Coalition, Organic Farming Research Foundation, and our own work in the Southeastern US with organic researchers, extension and farmers/farmer group representatives, we recommend that the there be an additional prioritization of this research and extension to be conducted in the Southeastern U.S., where weeds and fungal diseases continue to rise to the top of challenge lists for farmers. We've heard specific requests for organic compliant and effective pre-emergence herbicides and more research on the innovation of more effective weeding equipment and/or more outreach and technical assistance to address weed management. Given the changes in weather patterns, particularly the increase in temperature and rainfall/humidity in this region, we expect the urgency for this kind of research to increase.

**ADDITIONAL RESEARCH NEEDS**

The Organic Center is continually collecting information on research needs from multiple sectors of the organic community. We conduct industry roundtables, work with the Organic Trade Association's Farmers Advisory Council, meet regularly with researchers from academic institutions across the U.S., and hold one-on-one meetings with individual companies, farmers, professors, and consumers. In December 2023, we also co-hosted a virtual convening with FFAR, Clif Bar, and Tuskegee to assess organic research and extension needs in the Southeastern U.S. and followed this with an in-person convening in November 2024. Based on all of this engagement, we feel that the NOSB Materials Subcommittee's proposed Spring 2025 Research Priorities are largely in line with the needs of the organic industry, and appreciate the release of this report as an important resource to guide research priorities and project development.

Based on feedback we've received during our outreach efforts, we suggest the following research topic areas be added to the currently proposed list (ranked by priority and details follow):

1. **Assessment of health benefits/outcomes of organic in terms of nutrition and in terms of avoiding chemical residues or spray drift in rural areas
2. **State-by-State socioeconomic impacts of organic farming
3. Assessments of organic and conventional impacts on water quality
4. Best practices to improve organic farming in dryland areas
5. All crop research questions should include encourage a focus on minor crops and varieties
6. Measuring and improving the effectiveness of research extension programs
7. Include plastic used in across the supply chain, not just in production
8. Time to maturity for organic crops

** Should be added as a Top Priority

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<u>1. Assessment of health benefits/outcomes of organic in terms of nutrition and in terms of avoiding chemical residues or spray drift in rural areas.</u>

A far-reaching demand to connect human health to diet and environment does not meet the amount of scientific research that's needed to make confident claims in those connections. For instance, while we know that organic products tend to have more antioxidants and dramatically fewer chemical contaminants and that consuming organic products does reduce dietary exposure to hazardous chemicals, we do not have enough scientific evidence to make claims about health outcomes from the consumption of organic products. There is a growing body of evidence that connects pesticide use and synthetic chemical consumption (e.g. food dyes) with negative health outcomes, but this topic could also use more research. And more comparisons of health outcomes for rural communities near primarily organic or primarily industrial chemical agriculture would be extremely informative.

Data from this kind of research would very likely drive an increase in demand for and consumption of organic products and provide strong enough evidence to support policy changes that would increase support for organic production and market development, including public procurement.

While USDA doesn't typically fund medical research, we believe that assessments of pesticide use and their correlations with health outcomes and economic consequences could fit into NIFA priorities, and we flag this topic here in case there is opportunity for NOSB to recommend this type of research to other government funding agencies (e.g National Institute of Health).

2. State-by-State socio-economic impacts of organic farming

Understanding the economic impact of organic farming is especially important because it can influence advocacy and policymaking, and funding support for organic research, transition and market development. And yet, this kind of research and data are extremely limited, particularly at a state-by-state level.

Specific state-by-state research that would help improve advocacy efforts include:

- Impacts of organic production on employment opportunities/rates/stability, household income, livelihoods/wellbeing metrics, farmer recruitment and retention.
- Impacts of organic production and supply chains on the value and success of organic businesses and brands.
- Assessments of the opportunities lost and gained by organic imports/exports at local to state levels
- Assessments of organic consumption and consumer perceptions of organic/non-organic, particularly in areas where the organic market is not currently thriving.
- Comprehensive costs accounting of chemical farming externalities such as soil and water pollution cleanup, biodiversity loss/restoration, and the cost to address health issues related to chemical exposure in diets and the environment
- Impacts of federal funding investments on organic transition, farmer retention, sales/income.
- A refresh of the organic hotspots research that was based on census data from 2015 and a contrasting look at organic coldspots to see how regions with a wealth or dearth of organic impact various socioeconomic metrics, and learn what is needed to transform coldspots to hotspots.

3. Assessments of organic and conventional impacts on water quality/contamination

While we appreciate that the current list of research priorities includes the examination of contaminated inputs like water and manure on organic systems, and the potential of contamination of soil and water by 'forever chemicals', we still see a need to include a broader assessment of how organic versus conventional farming influences the quality/contamination of water sources (e.g. nearby riparian areas, catchment systems, ground water, etc.).

Better understanding how water resources, particularly drinking water, are impacted by farming practices, are important for the development of best practices on all farms, but this information can also provide a critical lever for public and political support of farming practices that improve the quality of our water resources. Understanding this is not only a matter of public health, but also another powerful tool that can motivate consumers to buy organic. However, potential impacts of organic should also be measured to provide a comparison and to not simply assume that organic is free from any negative impact.

4. Best practices to improve organic farming in dryland areas

IFOAM Organics Asia has recently developed the Dryland Organic Agriculture Network (DOAN) and has hosted international convenings in China and Portugal. They bring together local and international farmers, researchers and policymakers to exchange knowledge of and experiences with improving the success of dryland farming through organic practices. While there is already a large proportional of dryland areas across the globe, this amount is expected to increase with longer and harder droughts, and desertification by soil degradation. The U.S. is not immune to this expansion, and while many drylands are currently successfully farmed because of access to freshwater sources like groundwater, rivers and aquifers, this is not sustainable and most sources are already overdrawn posing a massive threat in the near future. Learning how to build soil and farm with less water is critical, and successful dryland farming could be expanded with sufficient research and extension, and networking with others around the world whose innovations have led to great success.

5. All crop research questions should encourage a focus on minor crops and varieties that have high cultural importance for a broader range of farmers.

Our recent work throughout the Southeastern US revealed a strong desire by many small to medium sized farmers who prefer to grow minority crops or heirloom varieties of major crops that are more suitable to their community's culture and taste preferences. But much of the current research and extension efforts aiming to improve production do not focus on the same types/varieties of crops they would prefer to grow, and could use technical assistance and research outcomes to improve their production. Farmer and consumer interviews/surveys that aim to identify preferred crops and unique research topics and resource needs should be administered to develop a more comprehensive list of crops that need additional research.

6. Measuring and improving the effectiveness of research extension programs

Land grant institutions receive federal funding to support extension programs and specialists/agents, and current NIFA funding programs require integration of research extension into funded projects. And yet, we continue to hear from farmers that there is a disconnect between research and their access to results. This communication breakdown can occur when various audiences are not given information, or when the information delivered is not communicated in effective ways (e.g. language, cultural barriers). Since this topic was raised with us two years ago by farmers, we've continued to hear the same challenges throughout our stakeholder engagement, particularly from communities (or representatives) where English is not the primary language and where existing extension and outreach programs have systemically favored some groups of farmers over others.

To better serve all current organic, transitioning, and organic curious farmers, we recommend that comprehensive assessments on the effectiveness of current extension and outreach effort be undertaken in any community with existing and proposed research. Where are efforts successful and why, and where are efforts failing and why? For instance, the quantity of extension/outreach professionals and contact hours is not enough to ensure effective knowledge exchange and support for farmers and businesses—how information is exchanged is also vital. It matters who is delivering

information, what information is being gathered to inform better research and outreach, what the trust is between the outreach provider and the community, the language that's used, the format of the information that's delivered, and the strength of knowledge networks. Local and regional explorations could be conducted just about anywhere in the US, but a target on those areas where we know organic production lags behind would be a good place to start.

We also need research results to be made more widely available to the public (i.e. more extension materials to bring science out from behind pay- and literacy-walls published in a well known, accessible and centralized repository) and offered in various languages from lay-person English to regionally specific English and other non-English languages determined by the communities being served.

7. Include plastic used across the supply chain, not just in production

We appreciate that "*The extent and impact of plastic use in organic crop production, and how organic producers can lead in reducing it and aligning with consumer concerns*" is a top priority (though we would place this lower on the list than whole farm system research). We recommend expanding the priority to include plastic used in other links in the supply chain from the field to the shelf.

For instance, beyond the well-known use of plastic in packaging, our continued work including a 2-Day conference dedicated to the topic of reducing plastic across the entire organic supply chain, an industry survey, a virtual town-hall-style listening session, and workshop session at Organicology 2025, has taught us that a lot of plastic is also used in the movement of products from to and from handlers and retailers, and there are many substitutions, recycling options, and network development opportunities that could help various actors along the supply chain find plastic alternatives or increase recycling to reduce overall plastic use. But there is a dearth of research and collation of information including critical outreach and education materials that need to be developed to help the organic sector make any major shifts.

8. Time to maturity for organic crops

Crop insurance provisions require crops to be planted between the earliest and latest planting dates to be eligible for a loss payment. 7 C.F.R. § 457.8. Coverage also ends at the end of the crop year, which is the "period within which the insured crop is normally grown." If an organic crop has different planting and harvesting timelines, it could result in a loss in coverage. It may be necessary to adjust planting dates for varieties of crops grown under organic production if the genetics or ambient conditions impact the time to maturity for organic crops compared to conventional. The data needed to assess the necessity of these adjustments is lacking, but implications could be major if organic crops do indeed have different maturity rates that do not align with current crop insurance provisions.

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**Considerations of funding program administration: the application process**

The following are comments offered to the Materials Subcommittee in 2024. While we understand these may have been taken into consideration already, without written indication of this consideration in the 2025 materials list for review, we offer them again for reference.

Several USDA NIFA funding programs like OREI, ORG, AFRI, SCRI, etc. play a pivotal role in advancing organic agriculture research and extension. These funding programs help ensure that organic systems remain productive and profitable while also providing a myriad of planetary benefits. The OREI and ORG funding programs are the primary drivers of organic systems research that lead to the development of new tools and practices that help organic farmers be more competitive in a changing global market.

While these invaluable sources of funding have the potential to dramatically improve organic production, the administration of the grant programs, including application solicitation and submission, must also be considered in their influence on the long-term success of organic research, extension, and production.

The Organic Center and the Organic Farming Research Foundation (OFRF) have years of high engagement with organic researchers and their own participation as project leads/collaborators, and together our organizations have collectively identified some opportunities and challenges with the administration process of two vital programs, OREI and ORG.

Beginning with what has helped make the application process more equitable and successful, we would like to acknowledge that publishing multi-year RFAs (requests for applications) with deadlines for more than one year in advance is very helpful. This gives all interested applicants a hard deadline to work with and under-resourced institutions more time to develop necessary collaborations, research questions and methods, and ensure their institutions have the capacity to submit proposals on their behalf. In the past, OREI has set deadlines in the summer, which aligns better with teaching schedules and avoids delays/challenges associated with winter holiday closures.

To ensure that applicants are set up for success in an inclusive and fair way to increase the submission of high-quality grant proposals with high-impact potential, we suggest three things:

1. **There should be predictability in the timing of the RFA release and the deadlines should better accommodate academic calendars.** Over the past several years the time of releasing the RFA for these two programs has been unpredictable. For OREI, it has ranged from October to March since 2014. When considering the academic calendar and the capacity constraints placed on research professors who teach (and those from less-resourced institutions tend to have high teaching loads), this inconsistency negatively impacts application rates and creates a significant barrier to less-resourced institutions. With more consistency in the timing of RFA release, we expect that applicants will be able to better fit the whole application planning and execution process into their workflow for the year. Publishing multi-year RFAs with deadlines in non-teaching months, particularly towards

the end of summer so that fieldwork is already underway, will relieve the pressure that occurs when deadlines are placed in winter or spring.

2. **Consistency in available time for application with more time between release of RFA and application deadline.** Similar to the release date of the OREI and ORG RFAs, a more-consistent timeframe to draft a grant application is prudent. Since 2014, the number of days to apply ranged from 37 to 91, which reflects 5 to 13 working weeks. Many universities require an internal review process that can take up to 10 business days. Therefore, considering the administrative processes and requirements many institutions have to meet for grants of the scale of OREI, the actual time between RFA release and the deadline **may** severely limit potential applicants. This is especially true for applicants who have heavy teaching loads, limited administrative support, and are at institutions that have limited resources all around.

3. **Coordination of deadlines across NIFA programs is needed.** Some organizations and institutions submit multiple applications to various NIFA funding programs within a given year. For example, in 2024, The Organic Center lead or collaborated on seven grant proposals across three NIFA programs with deadlines of Feb 6, Feb 15, and March 7. The administrative burden alone to meet this cluster of deadlines put an enormous and unnecessary strain on our capacity.

   We also had an experience where one of our collaborating academic institutions, an under-resourced Hispanic Serving Institution, could not accommodate the tight turnover between program deadlines and asked us to be the lead and submit on their behalf or else they would have to pull their OREI application this year. We were not well positioned to absorb the extra work, but committed to the submission to ensure that a worthy application was not abandoned. We heard other testimonies of academic faculty and administrative support limitations due to the stacked deadlines, which was exacerbated by the timing of winter holiday closures, teaching loads, and the need to build collaborations and request letters of support at a time of year when many people were out of office and/or stretched very thin.

   And finally, The Organic Center's science staff provides review services for NIFA and other government funding programs. For two years in a row, we have had to back out of reviewing for the NIFA SCRI program because their review coincided with the due date for OREI. This limits organic representation on non-organic sources of funding.

These suggested changes will not only increase the feasibility of the application process for all researchers, but they will also increase support for organic agriculture research at institutions that have historically been underfunded and unrecognized in programs like these.

To that end, in addition to the need for increased organic research funding and refinement of the grant application program administration, we acknowledge that more infrastructure development to support applications and administration of grants across all institutions is needed, but primarily at minority-serving institutions and under-resourced institutions/organizations.

Again, on behalf of The Organic Center, I would like to extend my thanks to the Materials Subcommittee for your commitment to furthering organic agriculture.

Please do not hesitate to contact us for information on the data that we have been collecting or with questions you would like us to ask the research community.

Respectfully submitted,

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