Applying behavioral insights and experimental designs to improve programs related to agriculture and the environment.

The Center for Behavioral & Experimental Agri-Environmental Research (CBEAR) was established in 2014, funded through competitive grants from the USDA Economic Research Service (2014-2019) and from the USDA National Institute for Food and Agriculture (2019-2023). CBEAR works with program administrators at the USDA and its partners to incorporate behavioral insights into program designs. CBEAR has twice been named a USDA Center of Excellence.

**WHY BEHAVIORAL SCIENCE?**

Insights from the behavioral sciences are revolutionizing the way in which government programs are designed and delivered, and we are bringing this revolution to agri-environmental programs. A “test, learn, adapt” strategy helps programs be their best, achieve greater levels of program participation and satisfaction, and achieve improved environmental outcomes, all while reducing costs.

**ENHANCING THE EVIDENCE BASE**

To create evidence-based programs, CBEAR has been conducting randomized field experiments across the US. On the map below, we highlight the zip codes where CBEAR field experiments have generated evidence that can make agri-environmental programs more cost-effective.
THE CBEAR TEAM

POSTDOCTORAL RESEARCHERS

AHSANUZZAMAN
University of Delaware

SEAN ELLIS
University of Delaware

PAUL FELDMAN
Johns Hopkins University

BEN MEISELMAN
Johns Hopkins University

LAURA PAUL
University of Delaware

PALLAVI SHUKLA
Johns Hopkins University

COLLIN WEIGEL
The Nature Conservancy

With CBEAR fellows at top research and land-grant colleges and institutions, including:

- Colorado State University
- Cornell University
- Georgia State University
- Iowa State University
- Johns Hopkins University
- Purdue University
- The Conservation Fund
- The Ohio State University
- Tufts University
- University of California – Santa Barbara
- University of Chicago
- University of Delaware
- University of Florida
- University of Guelph
- University of Michigan
- University of Nebraska
- University of Oregon
- University of Rhode Island
- University of Tennessee
- University of Tennessee
- University of Washington
- Williams College
CBEAR coordinates with program administrators, policy makers and other decision makers to incorporate behavioral insights and experimental designs into emerging and existing agri-environmental programs. By plugging directly into these programs, CBEAR identifies how applications of behavioral science can be used to improve agri-environmental programs.

**CBEAR’s Objectives**

**DEVELOP EVIDENCE-BASED POLICY RELEVANT TO VOLUNTARY AGRI ENVIRONMENTAL PROGRAMS**

CBEAR’s Objectives

**DISSEMINATE RESEARCH**

To help design better agri-environmental programs, CBEAR packages the insights that it and other researchers develop and shares this information with program administrators, policy makers and the media.

**CONDUCT BEHAVIORAL ECONOMICS RESEARCH**

To expand the evidence base for agri-environmental policy, CBEAR conducts lab and field experiments to test hypotheses from the behavioral sciences. These experiments include randomized controlled trials embedded within USDA and partner programs.

**EXPAND AND ENHANCE THE RESEARCH BASE**

CBEAR expands and enhances the human capital of scholars and practitioners for generating high-quality evidence about improving agricultural programs. CBEAR also trains young scholars in this emerging field.

**DISSEMINATE RESEARCH**

To help design better agri-environmental programs, CBEAR packages the insights that it and other researchers develop and shares this information with program administrators, policy makers and the media.

...all to make agri-environmental programs perform better.
PRIZE FOR AGRI-ENVIRONMENTAL INNOVATION

CBEAR offers an annual prize for agri-environmental innovation to recognize leaders who incorporate and celebrate the use of behavioral insights in program designs to improve agri-environmental programs.

2016 Recipient
Jason Weller, Chief, USDA Natural Resources Conservation Service

“[CBEAR is] helping us think outside the box, be creative, be innovative, but also help us better communicate what it is we do, to ultimately help us better incentivize good solutions on the land.”

2017 Recipient
Jeremy Peters, Chief Executive Officer, National Association of Conservation Districts

“The team at CBEAR understands that truly engaging America’s landowners is the key to continued improvements in soil health, water conservation and sustainable management of our natural resources.”

2018 Recipient
Sheila Reddy, Associate Director of Strategic Initiatives, The Nature Conservancy

“At its core, conservation is about people’s actions and decisions. Now more than ever, success depends on finding ways to help people overcome barriers to conservation.”

2019 Recipients

The Commission on Evidence-Based Policymaking, accepted by Dr. Katharine Abraham and Dr. Ron Haskins

“While the Commission has completed their charge, their impact is long lasting. CBEAR has used and appreciated the insights from their final report.”

--Kent Morse, speaking about the Commission on Evidence-Based Policymaking

IMPROVING NRCS’S EFFORTS TO SELL CONSERVATION

In a meeting between CBEAR and USDA employees from different agencies*, people had conflicting opinions about what approach would work best in a new outreach program on soil health. The problem was a lack of strong evidence to support any of the opinions. To address this problem, the group decided to run a randomized controlled trial to test the competing opinions.

For example, some group members believed that the outreach program should offer farmers many options for engagement. Based on insights from the behavioral sciences, other group members warned that offering too many options could reduce the likelihood that farmers would take any action (so-called “choice overload”).

To shed light on this issue, the group collaborated to run a randomized controlled trial with approximately 10,000 producers in the Great Lakes region. In the soil health outreach initiative, some farmers received an invitation only to visit a website and learn more, while others received an invitation to visit the website and the additional opportunity to participate in a webinar. The webinar required more of the producers’ time, but provided more information to them.

In the end, few producers participated in the webinar. Worse, simply offering producers the opportunity to participate in the webinar reduced the likelihood that a producer would visit the website by 50%. In other words, by offering the additional opportunity to participate in a webinar, the outreach materials dramatically reduced the chances that a producer would learn anything about the program.

The Commission on Evidence-Based Policymaking, accepted by Dr. Katharine Abraham and Dr. Ron Haskins

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--Kent Morse, speaking about the Commission on Evidence-Based Policymaking

INCREASING VOLUNTARY SUPPORT FOR NACD

The National Association of Conservation Districts (NACD) is funded by voluntary contributions from its member Conservation Districts. These contributions are used to provide districts with representation at the national level. Despite these collective benefits, not every district contributes the suggested annual contribution amount, and many do not contribute at all.

Drawing on insights from the behavioral sciences and evidence from the field of charitable giving, CBEAR and NACD are testing different outreach techniques. They aim to encourage greater financial participation among the 3,000 conservation districts. Each year, CBEAR tests a behaviorally enhanced “treatment” letter compared to the status quo “control” letter that NACD usually sends out. The treatment letter is sent out to randomly selected districts.

In one year, the treatment letter from CBEAR:

• Streamlined the NACD accomplishment newsletter
• Made a salient ‘ask’
• Made social comparisons between districts
• Emphasized a target contribution
• Publicly thanked contributors
• Set national contribution goals

Our results show that contribution amounts from districts increased between 5% and 10%, which could result in significant increases in fundraising for NACD if scaled up across all districts.

“Working with CBEAR was an easy, low-cost way for NACD to improve our fundraising efforts in a way that we can replicate in the future. We’re excited to work with CBEAR so that we can continue to improve the services provided to our member districts.”

-- KIMBERLY ULRICKS
Director of Membership
National Association of Conservation Districts

FPAC TRAINING

CBEAR created a training course that synthesizes the latest scientific knowledge about human behavior for the USDA Farm Production and Conservation (FPAC) staff. The course contains three modules:

• Why Farmers Adopt Conservation Practices
• Applying Behavioral Insights to Sell Conservation
• Evidence Based Conservation Communication- How to Learn if your Conservation Communication is working

These modules explore the motivations that drive landowners and operators to accept technical assistance from FPAC and its partners and the motivations that drive them to apply the knowledge from that assistance to implement conservation systems. The modules highlight “behavioral insights” for the conservation outreach work that USDA does throughout the country.

The first two modules highlight “behavioral insights” for conservation outreach work. The third module provides information on how to generate evidence about what works in conservation programs, with a specific focus on using experimental designs.

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-- KIMBERLY ULRICKS
Director of Membership
National Association of Conservation Districts
LANDOWNERS NAME THEIR VOLUNTARY COST-SHARE

Ag Values Project: Agricultural Values, Innovation & Stewardship Enhancement Project

CBEAR created the Ag Values Project project as a place to testbed behavioral insights in the agricultural context. By creating a "name-your-own cost-share" auction, we have been able to improve environmental outcomes, like water quality and invasive species control. Ag Values Project has demonstrated that behavioral nudges can be effective ways to encourage cost-effective conservation actions by landowners, while preserving farmers' autonomy and control over their decision-making. Simple changes to the program environment, such as changing the default starting points for programs, can result in large efficiency gains for government programs. These improvements can help use taxpayer money more efficiently to achieve additional environmental benefits, without changing any laws or program rules.

APPLICATION TO CURRENT POLICY

Results from Ag Values Project studies have shown that by changing the default starting price of a cost-share program, the government's share could be reduced. Given the billions of dollars spent every year on agri-environmental cost-share programs by USDA and its partners, saving even a small portion would reduce government costs by millions of dollars.
CBEAR’S BIG 3 INITIATIVES

1. Building the evidence base for financial assistance and conservation planning

Many agri-environmental programs provide both financial assistance, like cost-share payments, and technical assistance, such as conservation planning. However, the impacts of these two types of assistance have not been well quantified. To generate credible evidence about the impacts of these programs, CBEAR is conducting randomized controlled trials to determine which approaches encourage landowners to participate in agri-environmental programs most cost-effectively. These studies test the cost-effectiveness of different levels of financial assistance as well as different approaches to planning and outreach. We also test to determine whether simpler application processes can deliver higher levels of program participation and landowners satisfaction. The results of these studies help federal and state stakeholders design their programs for the greatest possible levels of success. They can also help demonstrate to policy-makers and external funding sources the rigor by which public monies are being spent and how these approaches are part of a continual process designed for program improvement.

2. Measuring post-contract persistence of conservation practices

Agri-environmental programs frequently provide landowners with short-term financial payments and technical support which are believed to induce long-term changes in conservation practices. But to date, little robust evidence exists on whether landowners continue to employ conservation practices after the technical support and financial payments end. If landowners continue these practices after initial provision of these support case, then these supports can be considered dramatically more cost-effective, because the public benefits will have occurred in subsequent years, even after the payments from the public have ended. CBEAR is engaged in research that uses administrative data and data collected remotely, such as from satellites, to better understand the causal factors that lead to the persistence of conservation practices such as cover crops. We are also working with stakeholders to test variations in program design, such as different lengths of support contracts and various payment structures, to identify cost-effective means for achieving greater persistence in the use of conservation practices.

3. Building the evidence base for environmental and economic benefits of input efficiency

Farming inputs, such as fertilizers and pesticides, can cause environmental and health impacts to both those who use them and those who live downstream or downwind of their use. To mitigate these impacts, various academics, companies, and government programs promote the adoption of input-efficient technologies. Frequently, these proponents claim these technologies also help the technology adopters by saving money, enhancing yields, or reducing risks. Nevertheless, in many cases, the limited existing evidence disagrees on whether input-efficient technologies actually deliver their promised environmental and economic benefits. For instance, new input-efficient technologies are often not implemented by the user as the proponents envisioned. Additionally, some technologies fail in field settings when facing a wider array of weather conditions and other challenges than were originally present in the lab setting. Finally, even with the adoption of some input-efficient technologies, their use is simply expanded to new areas and thus, in aggregate, levels of input use are not reduced and could even be increased.

To help build a better evidence base, CBEAR is collaborating with various partners to carefully understand the adoption of input-efficient technologies, tracking how they are used and whether or not they actually lead to overall reductions in input use. We also seek to understand the effect of technology adoption on producer satisfaction and profitability.

CALL FOR COLLABORATIONS

CBEAR welcomes the opportunity to collaborate with federal, regional and state administrators of agri-environmental programs. We have found the following conditions are favorable with regards to the application of the “test, learn, adapt” strategy:

1. The proposed program innovation is popular, or increasingly popular.

Why? The evidence about program impacts would have broad applications to similar contexts and programs.

2. Enough land units or people (typically more than 100) can be exposed to the program innovation.

Why? Larger samples allow us to more reliably detect a policy-relevant impact, should one exist.

3. Final outcomes, or important intermediate outcomes, can be observed. These outcomes should be relatively independent across units.

Why? These identifiable outcomes will allow us to measure policy-relevant impacts.

The end result? Evidence-based program designs that achieve greater levels of voluntary participation, satisfaction with the programs, and improved environmental outcomes...all while reducing program costs.
INTERESTED IN LEARNING MORE?

Check out our Behavioral Insights Brief series online.

www.centerbear.org/behavioral-insights

For more information about the Center for Behavioral & Experimental Agri-Environmental Research, visit:

WWW.CENTERBEAR.ORG