

Developing Social License for Trout Aquaculture in the North Central Region

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Funding Request: \$280,163

Duration: 2 years (09/01/2021 – 08/31/2023)

- Objectives:**
1. To map social license in selected locations in Michigan and Wisconsin and Ohio (through funding support from the Ohio Soybean Council).
 2. To design and implement specific intervention strategies for each location.
 3. To evaluate the degree of change in social license before and after intervention.
 4. To disseminate project results to aquaculture producers, Extension specialists, and the broader aquaculture producer and scientific community.

Proposed Budgets:

Institution/Company	Principal Investigators	Objectives	Year 1	Year 2	Total
Virginia Tech	van Senten & Engle	1, 2, 4	\$49,918	\$49,274	\$99,192
The Ohio State University	Smith	1, 2, 4	\$4,085	\$4,369	\$8,454
Purdue University	Quagraine & Shambach	1, 2, 4	\$3,029	\$3,488	\$6,517
Center for Food Integrity	Arnot & Fitzpatrick	1, 2, 3, 4	\$96,000	\$70,000	\$166,000
	Totals		\$153,032	\$127,131	\$280,0163

Project Summary

The lack of social license for aquaculture is widely cited as a major constraint to growth, as expressed through overly burdensome regulations, delays/denials of permits, and lawsuits by citizens groups. Literature on social license for aquaculture is primarily theoretical and lacks empirical evidence for strategies effective for developing social license. This project has potential to serve as a model beyond the North Central Region (NCR). The project team formed includes NCR aquaculture Extension specialists, economists well known to NCR aquaculture producers, and social license experts. The goal is to develop and test strategies designed to enhance social license for aquaculture in the NCR. Strategies developed will be tested in specific locations in at least two NCR states, with a third state funded by the Ohio Soybean Council. Pre- and post- surveys will measure change in social license before and after intervention. Deliverables from this project will include: 1) manual that describes strategies for developing social license; 2) fact sheet describing outcomes of strategies implemented; 3) presentations at national, regional, and state conferences; 4) webinar summarizing project outcomes and successful strategies; 5) Trout Talk article; 6) refereed journal article manuscript; 7) training workshop on social license; 8) final report; and 9) highlights summary.

Justification

U.S. aquaculture has grown more slowly than that of aquaculture elsewhere in the world. Growth of U.S. aquaculture would provide clear benefits in terms of increased food security and meeting growing demand for locally produced food. Moreover, aquaculture supports the rural and urban economies where farms are located through economic benefits in the form of employment and support for the many businesses that provide inputs and services to aquaculture farms. For the North Central Region, in particular, growth of aquaculture would provide increased demand for soybean meal and other grains used in aquafeeds, that would in turn provide greater support for price stability of soybeans and reduce soybean price risk (Engle et al. 2020).

The lack of social license for aquaculture is widely cited as a significant contributing factor to the slow growth of U.S. aquaculture in many parts of the U.S. News stories have reported the opposition and resistance of local communities against aquaculture for many years. Without social license to operate, social controls can appear that lead to excessive and overly burdensome regulatory requirements, delays and denials of permits, and lawsuits by various citizen groups. Additionally, opposition to aquaculture production reduces market opportunities when consumers choose wild caught over farm-raised fish because they perceive that aquaculture causes pollution, harms wild species or is not produced in a sustainable way.

The importance of this project and approach is underscored by approval of additional funding support from the Ohio Soybean Council (The OSC). The OSC has approved \$24,000 to support the addition of Ohio to this project, contingent upon approval of this proposal by NCRAC. The OSC recognizes that creation of social license within the region will likely contribute to greater growth of aquaculture that, in turn, creates additional economic value to the soybean industry in the region.

Social license, however, is poorly understood. It is not a marketing problem that can be addressed through advertising; it is much more, for example, than developing advertisements that convince someone to buy a new car. Nor is it simply a public “perception” problem that can be

overcome with a broad public campaign that corrects various types of mis-information repeated on social and other news media. Obtaining social license means getting to the root of distrust and anxiety felt within a community about aquaculture and establishing pathways to address them.

Strategies to address social license through providing scientifically accurate data and facts have not been successful largely because such strategies do not address the root problems of social license at the level where these problems occur. For example, no amount of data will change beliefs such as “our fishing has gone bad ever since that fish farm went in,” but prevention of development of negative beliefs through creation of social license can prevent such views from rising to the level of regulatory actions that constrain or shut down aquaculture businesses. Social license problems occur more frequently because fewer people have relationships with farmers who produce the food they eat than ever before.

Creating social license is a way to keep aquaculture producers in business and allow new businesses to start up by avoiding onerous regulatory actions that result in excessive costs or business closures. While social license itself has no official connection to policy or regulation, it is unlikely that agencies or government officials will publicly support or grant permits and licenses to entities without social license. Social license can be viewed as a way to inoculate the broader community against the likelihood of social controls that often occur in the form of onerous regulatory actions. Social controls implemented in the form of regulatory actions often are written for the entire sector, even if the triggering event was unique to one specific farm.

There is a strong need to identify strategies to create and sustain social license for aquaculture. While it may feel uncomfortable for producers to seek trust and understanding from the community, we all know that talking to ourselves within the aquaculture community has not led to any significant change in the challenges of growing aquaculture opportunities in the U.S. While generalized, theoretical studies have discussed social license for aquaculture, there has been no systematic, targeted work to develop and test effective strategies to enhance social license for U.S. aquaculture. Social license relies upon interpersonal trust (Sapp et al. 2009) that occurs at the local level. It is often influenced primarily by those individuals who are most trusted and respected, but also by those who are most vocal, whether in positive or negative ways. The process of creating social license includes development of trust and communication channels between fish farmers and local opinion/thought leaders. Thus, theoretical studies do not address the roots of social license problems that occur in the real world at the local level.

This project represents the first attempt, to our knowledge, to develop and test model strategies to garner and sustain social license for aquaculture that goes beyond the simple steps of providing facts or theoretical constructs. The identification of successful model strategies would have wide-ranging applicability across the U.S., for any species or production system, given the occurrence of social license issues in many regions of the U.S. There is a strong need for guidance and advice on workable strategies to address social license in aquaculture.

Effective use of strategies to create social license in U.S. animal agriculture have occurred. One unique contribution of this project is to have partnered with the Center for Food Integrity (CFI) to make their expertise in social license in livestock industries available to aquaculture. The CFI personnel will draw upon their experience to apply to NCR aquaculture locations where social

license issues have been identified by aquaculture producers. They will provide expertise in the design of the strategies developed, methods to identify opinion/thought leaders, and facilitate the engagement activities. The involvement of the CFI social license experts with the economists and Extension personnel familiar with aquaculture in the NCR is expected to result in a robust set of recommendations for the region as related to development of social license.

This research and extension project will design, test, and evaluate strategies for subsequent extension education programming focused on a science-based approach to social license. The focus of the project is on identifying one or more strategies/models of creating and/or sustaining social license for aquaculture, and is not about advocacy for any policy or cause. The first phase of the project will focus on community leaders who influence the broader population in the locations selected. Opinion leaders represent the first line of engagement, because their views have a multiplier effect across communities. Gaining understanding and support from opinion leaders, as well as diffusing issues of concern by the loud vocal minority leads to the belief, acceptance and trust necessary to garner social license across a community.

This project is not the type of research project typically funded by NCRAC. Nevertheless, it falls within the mission and charge of NCRAC to “support aquaculture research, development, demonstration, and extension education to enhance viable and profitable U.S. aquaculture production” (NCRAC 2020). The lack of social license in many areas in the North Central Region is a major reason underlying a growth rate much lower than that achievable given the available water resources in the region. This project addresses the **Emerging Issue** of social license for aquaculture through a **cross-cutting** approach that supports **Industry Development** through **Facilitation/Resolution/Partnership** efforts to alleviate constraints imposed by **Regulations** and through increasing **Public Awareness** through **Consumer Education**. **Therefore, this project would predominately address Theme D (Emerging Opportunities/Issus), with Theme B (TIDA 2; partnerships) and Theme C (TEA 2; consumer education) intertwined.**

Related Current and Previous Work

The concept of social license to operate has been attributed to efforts in the 1990s of mining industries in Canada and Australia to avoid negative consequences of negative opinions of their companies by local communities (Gunningham et al. 2004). Social license concepts have since been applied to a variety of industries from wind energy (Hall 2014), forestry (Edwards et al. 2016), farming (Williams and Martin 2011), and marine industries (Kelly et al. 2017). For aquaculture, Baines and Edward (2018) identified the drivers of social license in New Zealand, finding that social license was site and scale specific and involved development of trust and credibility, shared values, and identification of mutual goals and understanding. In Scotland, a recent study found that public opinion as to the acceptability of salmon farming can be shaped by just a few individuals (Billing 2018). However, the research literature does not provide model strategies for use in an effort to achieve social license.

The following describe two successful efforts by PIs on this project team of successful models that implemented the core concepts of local community social license to address issues faced by livestock producers.

New York Dairy:

A progressive and growing dairy operation was facing increasing opposition in the local area which in turn was creating regional concern among dairy farmers about the ability to grow other existing dairies or site new facilities. The farmer in this situation was focused solely on his operation and, while he was aware of growing local concern, he saw no reason to engage since he was following the law and the conditions of his permit.

Our organization (Center for Food Integrity) was asked by the state dairy promotion organization to facilitate a community engagement/advisory panel to de-escalate the situation to protect the social license of the dairy industry in up-state New York.

We began by identifying key thought leaders in the local community through contact with local elected officials and the dairy promotion organization. Once identified, we conducted in-depth phone interviews with these individuals to articulate the issues of concern and the sectors of influence with which to engage. Once we identified a proxy for each of the influential sectors, we scheduled a series of meetings to synthesize the concerns and work toward solutions. The role of the proxy is critical to the success of the process. This individual aggregated concerns from their sector, brought the issues to the group for resolution and then disseminated action taken to their sector. Identifying the influential sectors and the opinion leader to serve as proxy is critical to success.

These meetings always included dinner and time for relationship building to encourage candid discussion and build meaningful connections. The meetings occurred as monthly events until issues were clarified, needed information was gathered and solutions proposed. Once the local farmer and his family engaged and began sharing information, the process accelerated, misunderstandings were reduced, and productive solutions suggested. Meetings moved to once per quarter and after two years the process concluded with broad based support for dairy production in the region and for the farm in question.

North Carolina Packing Plant:

A pork processing facility in a small community in Eastern North Carolina changed ownership, and the new owners wanted to improve community relations. The previous owners shared very little information with the local community, and the resulting information vacuum was often filled with rumors, speculation, and innuendo, none of it favorable to the packing plant.

We facilitated a process like that noted above. This process, however, began with a bit more tension as the list of issues and concerns and underlying suspicion about the impact of the packing plant on the community was significant.

The keys to success were as follows: All issues were open for discussion; the influential sectors and the opinion leaders who served as their proxy were carefully selected for both influence and the ability to engage constructively; leaders of the packing plant were committed to responding to all questions/concerns; all involved were willing and able to engage effectively and constructively.

After two years of engagement, the plant was able build community support by either addressing concerns or providing transparency that built trust and alleviated concerns. This resulted in a reduction in complaints about the facility and an increase in overall community support as measured by post-project surveys.

Statement Regarding Duplication of Research

The USDA Current Research Information System (CRIS) was accessed to review relevant or related research. The search terms used included “social license”, “aquaculture”, “trout”, and “fish”. These searches yielded no records related to social license within the database. In addition, a search was also conducted of the NOAA Sea Grant database (<https://seagrant.noaa.gov/Our-Work>) using the same search terms described earlier. This search also did not reveal any records that match the queried parameters. We are therefore confident that the proposed work is original research and not duplicative of previously funded projects.

Anticipated Benefits

The long-term benefits of increased social license will include the following:

- Increased social license within local communities that enables more freedom to operate for aquaculture producers
- Producers will spend less time dealing with negative issues which allows more time to focus on production issues
- Better reputations for aquaculture producers enable an increased pool of workers since the negative stigma of working for these operations is reduced or eliminated
- A reduction in negative community perceptions enables financial opportunities as lenders are more willing to offer loans and investors witness community support

In the shorter-term, there is a strong need to develop a model of how to create and sustain social license for U.S. aquaculture. The outreach materials and deliverables from this project will be used in a training workshop, a national webinar, and multiple presentations that will multiply the impact of this project through extension of a working model to address social license in aquaculture.

Objectives

The specific objectives of this project are to:

1. To map social license in selected locations in Michigan and Wisconsin and Ohio (through funding support from the Ohio Soybean Council).
2. To design and implement specific intervention strategies for each location.
3. To evaluate the degree of change in social license before and after intervention.
4. To disseminate project results to aquaculture producers, Extension specialists, and the broader aquaculture producer and scientific community.

Deliverables

This project will produce the following deliverables:

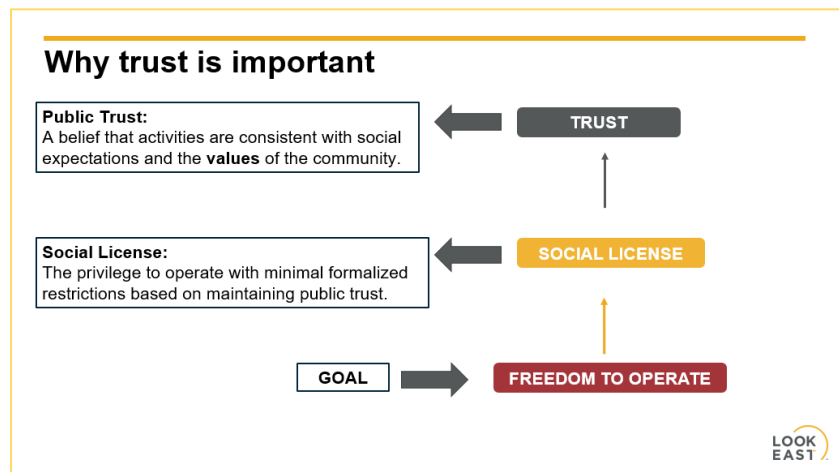
- 1) A manual that outlines and describes strategies and processes for development of social license.
- 2) A fact sheet describing outcomes of strategies implemented.
- 3) Presentations at national, regional, and state conferences (for participating study states).

- 4) A webinar that summarizes project outcomes with an emphasis on successful intervention strategies.
- 5) An article for the Trout Talk (newsletter of the US Trout Farmers Association).
- 6) A refereed journal article manuscript.
- 7) A training workshop on developing social license.
- 8) A final project report and NCRAC highlights summary.

Procedures

The project team will draw upon existing theory of social license and practical experiences in U.S. animal livestock farming to develop a model for enhancing social license in the NCR. The project team includes members from the Center for Food Integrity who have a track record of successful initiatives to create social license for animal livestock farming. Trout aquaculture was selected as the focus for this project for two reasons: 1) trout aquaculture is the largest component of aquaculture in the North Central Region by total sales; and 2) trout farms are believed (erroneously) by many individuals to have negative environmental impacts.

Social license is a reflection of public trust and confidence in a company or institution. *Social license* delivers a company or entity the ability to operate with minimal formalized restrictions based on public trust. *Social control* is the opposite of social license. *Social control* happens in the absence of trust and leads communities to demand restrictions and regulations.



To achieve social license, an entity must first establish *trust*. Trust consists of three aspects: competence, confidence and influential others. *Competence* represents facts, data and information. *Confidence* represents shared values. Peer reviewed and published research shows that shared values are three to five times more impactful at gaining trust than facts or data (Quigley and Baines 2014). In fact, in order for people to accept and listen to facts and data, they need to first have a belief that the source of that data actually shares their values. *Influential others* represent those whom people trust as reliable sources who share their values.

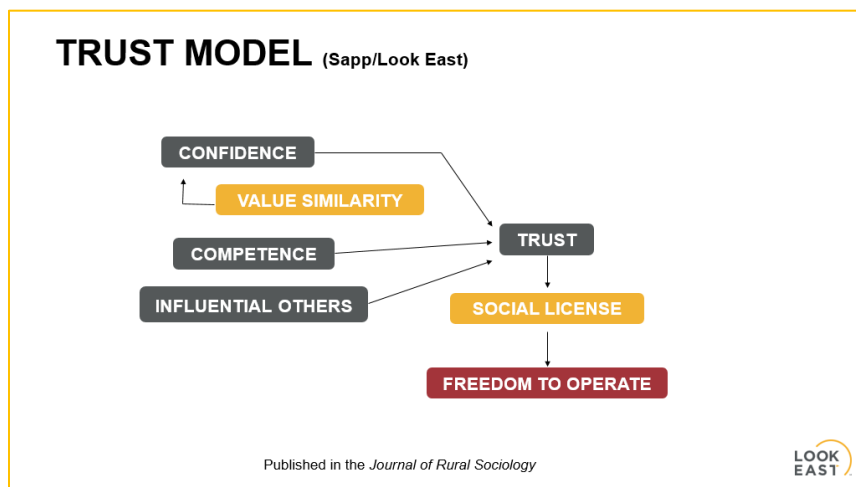
Social license occurs at the local level, often influenced primarily by those individuals who are most trusted and respected (*influential others*), but also by those who are most vocal, whether in positive or negative ways. Thus, social license issues must be addressed at the local level. This project will work to establish social license by establishing shared values among community influential others to build trust that leads to social license.

In preparation for this proposal, the project team reached out to trout producers in the major trout-producing states in the NCR to determine the willingness of trout producers to collaborate in the project and to seek specific locations for inclusion. It appeared that producers in multiple states were interested in participating. However, due to the labor-intensive nature of the work and the need to have face-to-face meetings with a dedicated facilitator and influencers, it was determined to limit the scope to two NCRAC states and to seek additional (non NCRAC funds) to expand coverage to a third state.

Unfortunately, the methodologies to build social license do not enjoy economies of scale, as each location and group of influencers is unique. As a result, the methodologies must be repeated in each of the selected locations. The locations of Michigan and Wisconsin were identified for inclusion in the project, based on support and encouragement from trout producers in these states. We have since received \$24,000 in additional funding from the Ohio Soybean Council, contingent upon approval of this project, to expand this work to a third state – Ohio.

Objective 1

To accomplish Objective 1 (PIs: van Senten, Engle, Smith, Quagraine, Arnot, Fitzpatrick), the first step will be to identify trusted information sources and the broader range of influencers of public opinion in each specific location. This will begin with input from cooperating trout producers in terms of identifying individuals who have had the greatest influence on issues related to trout aquaculture. In addition, an extensive effort will be made by telephone to fully explore the range of groups and individuals in that location who play a role in shaping social license for trout aquaculture to operate in that area. The local community interviews conducted will: 1) identify community leaders with influence and temperament to engage in the subsequent engagement process; and 2) uncover and articulate the primary issues and gaps in values.



A community advisory panel will be formed for each location based on the local community interviews. Each community advisory panel will be composed of 12 to 15 individuals. Semi-structured interview questions will be developed to measure the degree of social license in each location prior to initiation of intervention measures.


Questions developed and specific wording choices will draw upon previous survey experiences of project members, including those that have been used in previous projects on social license in terrestrial livestock farming. The pre-intervention interviews of the community advisory panel will be used to map social license as related to trout aquaculture among the various types of influencers in that location. It will also serve as a metric of what the community desires and expects in terms of trout aquaculture to be compared with current trout farming practices and values. Shared values among trout farmers and community influencers will also be identified.

Identify Community Influencers and Key Issues

- a. Identify and Recruit Influencers
 - i. Begin with a list of local community influencers identified by existing local contacts.
 - ii. Conduct personal phone conversations with each influencer. Weed out those who are so firmly entrenched in their beliefs that they cannot be swayed or work collaboratively with others. Identify those with the temperament and grace to engage in collaborative discussions for the benefit of the community.
 - iii. Ask for referrals to others in the community who are considered influential others. Connect with those referrals.
 - iv. Repeat this process until a cross section of diverse influencers has agreed to join in the community advisory panel.
- b. Identify the Issues impacting social license
 - i. While interviewing people to identify the influencers, probe for knowledge of and experience with the local aquaculture producer (s). Probe to identify issues that may be impacting social license for local aquaculture.
 - ii. Collect information from interviews and distill misunderstandings, misinformation or concerns. These will offer a starting point to prepare for the advisory panel meetings and prep farmers for conversations that may arise.
 - iii. Develop a document outlining potential issues.

Engagement and Trust Building and Issues Identification and Prioritization

It is very difficult to be confrontational when breaking bread together. Socializing over a meal is a traditional and time-honored way to bring people together. The format for the Community Advisory Panels involves bringing people together in a friendly environment to begin the process of developing *shared values*. Finding shared values can take many forms. Commonalities such as having children who play the same sport, a common health issue, belonging to the same church or having served in the military offer a great start to building trust through shared values. The right social environment starts the process and identifies meaningful shared values for this project, such as a shared commitment to protecting local rivers and streams.

- a. Prepare for the Community Advisory Panel meeting  process
 - i. Form a Community Advisory Panel of 15 to 20 community influencers
 - ii. Complete IRB review at Virginia Tech of survey materials for advisory panel members
 - iii. Conduct pre-intervention survey of advisory panelists as a benchmark
 - iv. Train participant aquaculture farmers how to establish shared values and engage effectively with community advisory panel participants

- b. Implement a regularly scheduled meeting process (timing likely monthly or every other month, but determined by the needs of the panel members, community and issues)
 - i. Meetings to occur over dinner at a local restaurant or other neutral location
 - ii. Meetings will start by encouraging social interaction and having participants get to know each other as people
 - iii. Initial interactions will focus on establishing shared values surrounding the topic of local aquaculture on which to build trust among the group, including the Community Advisory Panel and aquaculture famers. Shared values include things, like clean rivers and streams, protection of the environment, economic prosperity for the community, feeding the hungry, etc.
 - iv. Establish and prioritize the issues that need resolution
 - v. Address individual issues with appropriate intervention strategies
 - vi. Repeat the process over time and observe increasing trust levels that result in greater social license

Meeting 1 Format
<ul style="list-style-type: none"> • Greetings and social time • Introductions around the table (your role in the community and why you joined the panel) • Purpose of panel and what we plan to achieve • What to expect (how the panel process will work and ground rules) • Overview of local aquaculture operations • Overview of some of the issues to be addressed
Meeting 2 Format
<ul style="list-style-type: none"> • Greetings and social time • Introductions around the table (there may be new panelists, or some were previously absent) • Moderator sets up process for prioritization and discussion of issues • Group participates in moderated issues prioritization • Priority 1 issues are unpacked • Intervention strategies are determined • Between this meeting and next, intervention strategies are begun
Meeting 3 Format
<ul style="list-style-type: none"> • Greetings and social time • Introductions around the table • Review Issue 1 and report on progress of intervention strategies • Determine if adjustments are needed • Unpack Issue 2 • Determine intervention strategies • Between this meeting and next meeting, begin intervention strategies
Meetings 4, 5, 6 and so on....
<ul style="list-style-type: none"> • Greetings and social time • Introductions around the table • Review previous issues and report on progress of intervention strategies • Determine if adjustments are needed

- Unpack next issue
- Determine intervention strategies
- Between this meeting and next meeting, begin intervention strategies

Each Community Advisory Panel process will have its own rhythm and life expectancy. Sometimes the chasm between community social license and farmer aquaculture practices are great. Other times, rapport and trust can be achieved more quickly. For this project, each state and each community will be unique; however, the methodology remains the same. As progress is made on the issues/concerns/misperceptions within each community, the process will be repeated, building shared values and trust building to achieve social license for the aquaculture community.

Aquaculture Farmer Commitment

The success of this project will depend upon the sincere engagement of the farmers involved and their full commitment to the process; the attached 6 letters of support from fish farmers (Harrietta Hills Trout Farm, Rushing Waters Fisheries, Freshwater Farms, White Creek Farms, Crystal Lake Fisheries, and the U.S. Trout Farmers Association) indicate that such commitment has already been obtained for this project. An additional letter of endorsement for the process to be tested in this project was provided by the American Dairy Association, attesting to the validity of the proposed approach in addressing social license in animal livestock. This is a process that begins with a certain level of trepidation and discomfort among all participants, but eventually leads to a place of trust, engagement and comradery. CFI will orient the farmers to the process and seek their full commitment to remain sincerely engaged, even in those moments of discomfort, so that the process results in greater trust, increased social license and enhanced freedom to operate.

Objective 2:

The design of specific intervention strategies in Objective 2 (PIs: Arnot, Fitzpatrick, van Senten, Engle, Smith, Quagraine) will be based on gaps identified in Objective 1 between community expectations and beliefs about trout aquaculture and current trout farming practices and values. Objective 1 will also provide information on shared values between farmers and local influencers that will inform the design of specific intervention strategies for Objective 2. We anticipate that specific intervention strategies will vary by location, given the differences in communities and social license for trout aquaculture.

Intervention Strategies

Intervention strategies will be unique to the situation within each community. Intervention strategies can take a variety of forms, from correcting misinformation, to inviting panelists to see how the operation works for themselves, to collaboration to develop solutions, to holding ground on requests that would negatively affect non-negotiables such as fish welfare or worker safety – but doing so through a lens of shared values.

In general, issues will fall into one of three categories.

Categories of Issues and Example Resolutions

1. Issues resulting from misunderstandings or misinformation	<p>Example Issue: The Advisory Panel believes that the operation is polluting a nearby river.</p> <p>Example Resolution: Panel members are invited to tour the operation and see for themselves cleanliness, water treatment and sustainability aspects of the operation. Those who take the tour are asked to report on their findings at the next advisory panel meeting.</p>
2. Issues that can and should be resolved	<p>Example Issue: Neighbors to the operation complain about equipment parked by the roadside that blocks signage and intersection visibility creating a traffic hazard.</p> <p>Example Resolution: The farmer did not know this was causing concern and can move the equipment to a different location.</p>
3. Issues that the panel sees as a problem but are not something the farmer can change without negative consequences	<p>Example Issue: Neighbors don't like that pyrotechnics go off periodically at the operation.</p> <p>Example Resolution: Because of animal predation, the aquaculture farmers need to scare birds and other animals away so they don't eat all the fish and contaminate the water. An explanation is provided to the advisory council as to why the pyrotechnics are used and their importance. The panel may be shown some data or video as to the impact on the welfare of the fish.</p>

While the above represents examples of the issues intervention process, it is likely that some of the issues need only simple interventions and others may be highly complex and require more time and persistence to resolve. Each state or community will have unique challenges. While the advisory panel has no power or authority to force the aquaculture farmer to do anything, the important point is that bringing stakeholders together to talk through the issues with the farmers within a framework of shared values diffuses negative behavior and reframes the conversation into something productive where the community influencers become part of the solution, making it something they themselves, AND the rest of the community, can embrace.

Objective 3:

In Objective 3 (PIs: Arnot, Fitzpatrick), to evaluate the degree of change in social license, each panel member will be re-interviewed following the intervention strategies implemented (Objective 2). Changes in responses to questions designed to measure the degree of social license pre- and post-intervention will provide information on whether there has been a change in social license, and if so, the degree to which it has changed. The degree of change measured will be used to identify the most successful strategies that will be highlighted in Objective 4.

Objective 4:

Objective 4 (PIs and Extension Liaison: van Senten, Engle, Smith, Quagraine, Arnot, Fitzpatrick, Shambach) will include developing and disseminating the following deliverables: 1) manual that outlines and describes strategies and processes for development of social license; 2) fact sheet describing outcomes of strategies implemented; 3) presentations at national, regional, and state conferences; 4) webinar that summarizes project outcomes with an emphasis on successful intervention strategies; 5) article for Trout Talk (newsletter of the US Trout Farmers

Association; 6) refereed journal article manuscript; 7) training workshop on developing social license; 8) final report; and 9) NCRAC highlights summary.

Aquaculture Farmer Commitment

The success of this project will depend upon the sincere engagement of the farmers involved and their full commitment to the process. This is a process that begins with a certain level of trepidation and discomfort among all participants. CFI will orient the farmers to the process and seek their full commitment to remain sincerely engaged, even in those moments of discomfort, so that we may all come out the other side in a place of trust that enables freedom to operate. Six producers (Harrietta Hills Trout Farm, Rushing Waters Fisheries, Freshwater Farms, White Creek Farms, Crystal Lake Fisheries, US Trout Farmers Association) in the region have expressed support for this project as documented by the attached letters.

Data Management Plan

Expected data type:

This project will generate data on attitudes and perceptions of trout farming in the North Central region. The data will be generated in a digital format. We anticipate the following data from this project:

- A pre-intervention survey instrument to collect information on the perceptions and attitudes towards trout farming
- A post-intervention survey instrument to assess the effect of intervention activities on perceptions and attitudes towards trout farming.

Data format:

	Datasets (Input and/or Output)	Format(s)	Estimated Amount
1	Survey instruments for data collection	Open	2
2	Pre-intervention survey responses.	Open	1
3	Post-intervention survey responses.	Open	1
4	A manual that outlines and describes strategies and processes for development of social license	Open	1
5	A fact sheet describing outcomes of strategies implemented	Open	1
6	Refereed journal article manuscript	Open	1

Data will be available in readily accessible and machine-readable formats to allow for them to be usable by others. The survey data will aim to avoid gathering any personally identifiable data from consumers, although demographic data will be collected from respondents. Data will be screened prior to being uploaded to the data management repository to ensure that no sensitive or personally identifiable information is included. All data will be checked prior to depositing to ensure adherence to USDA NIFA guidelines on confidential or privileged information. Data and meta data generated by this project will be prepared using Microsoft Excel and Microsoft Word software applications, two very common and widely available programs. All data will be made available in English.

Data storage and preservation:

During the project duration, data will be stored on computer hard drives and flash drives belonging to proposal team members (PI and Co-PIs). Upon project completion, data will be maintained and preserved on a computer at the Virginia Tech Virginia Seafood Agriculture Research and Extension Center (VSAREC). This computer uses volume encryption through an AES encryption algorithm with a 256-bit key. This computer is also connected to an automated

secure backup server at Virginia Tech, to allow for complete recovery of all data should the computer storage drives fail. Extension deliverables will be hosted by Virginia Cooperative Extension and will be made publicly available on the Virginia Cooperative Extension Publications website and the VSAREC website. In addition, project data described in this data management plan will be deposited to the Virginia Tech Data repository “VTechData” to aid in long term preservation and providing access to the data.

Data sharing, protection and public access:

Extension outputs (fact sheets and webinars) will be published online and made publicly available. Survey data collected by this study will be screened to ensure no personally identifiable, sensitive, or privileged information is uploaded to the Virginia Tech Data repository “VTechData”; in accordance with USDA NIFA guidelines. There will be no patents or restrictions set on the use of the data by others. Appropriate credit should be given to the research team members who generated this data when it is used by others.

Roles and responsibilities:

Dr. Jonathan van Senten, the project director, at Virginia Tech will see to the faithful execution of the data management plan as described. In the unlikely event that Dr. van Senten is unable to fulfill this obligation, due to injury or illness, Dr. Carole Engle will work with Dr. Michael Schwarz, Virginia Seafood AREC Director, to ensure the data management plan is executed. No additional resources or funds are needed to execute the data management plan as described.

Outreach and Evaluation Plan

Building social license happens at a local level, therefore our outreach efforts will specifically target local *influential others*, aquaculture producers, and other local stakeholders. The overall goal of this project is to develop social license for trout aquaculture in Michigan, Wisconsin, and Ohio; but the outputs and deliverables from this project will also offer a methodology that can be replicated for additional sectors of U.S. aquaculture in other states and regions. We propose an extensive outreach component based on a quantitative evaluation of the effectiveness of the social license strategies designed and implemented (Objective 3). Beyond this quantitative assessment of the effectiveness of intervention strategies, there are also eight deliverables proposed that will support our outreach efforts to the broader region and aquaculture industry. Dissemination of project outputs will target both land grant and Sea Grant Extension networks. The trout producers cooperating with this project will be consulted to identify specific opportunities to present summaries of project results and other dissemination efforts. We anticipate that these will include presentations at annual meetings of the U.S. Trout Farmers Association and state aquaculture association annual meetings (Ohio, Wisconsin) in addition to the national webinar. All project deliverables will be posted on the web (preferably the NCRAC web site), with notices sent out nationally through Extension networks to encourage linkages to other aquaculture related web sites. Furthermore, we propose to conduct pre- and post-evaluation of participants for both the webinar and workshop deliverables for this project. These assessments will include information such as the number of participants, the region they are located in, their professional affiliation (industry, Extension, academia, etc.), and their knowledge and understanding of social license.

Target Audience:

Influencers at the local level in study states (Michigan, Wisconsin, and Ohio), aquaculture Extension (land grant & Sea Grant), aquaculture industry members and associations, and related stakeholders.

Intended Learning Outcomes:

- a. Understand and define social license for aquaculture at the local level within the study states (Michigan, Wisconsin, and Ohio).
- b. Identify effective intervention strategies to establish trust with *influential others* within the community.
- c. Methodology for developing intervention strategies at the local level.

Intended Management and/or Behavioral Outcomes:

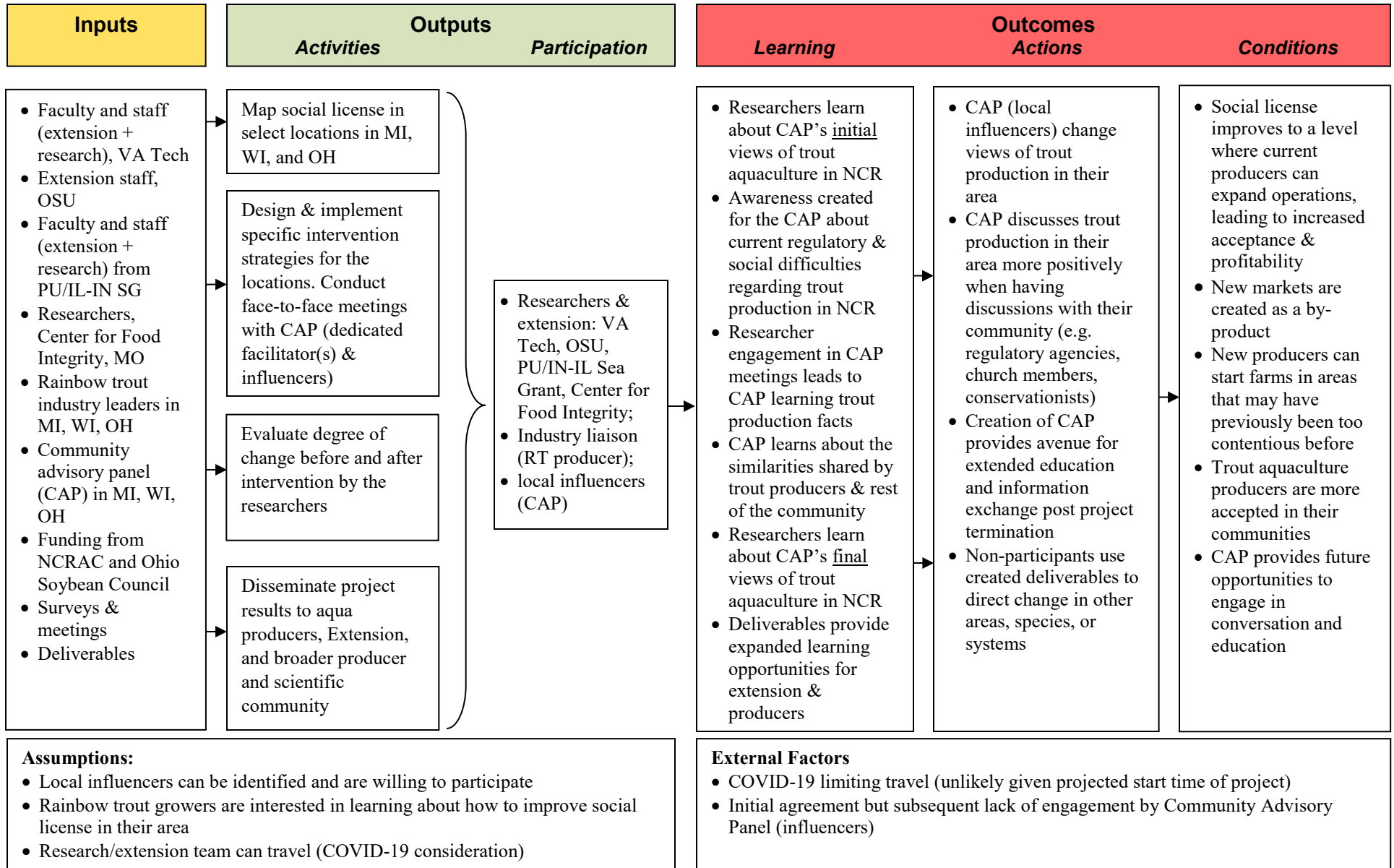
- a. Improved social license for aquaculture at the local level in Michigan, Wisconsin, and Ohio.
- b. Improved freedom to operate for trout producers at the local level in Michigan, Wisconsin, and Ohio.
- c. Replication of intervention strategy methodologies in other states or regions, to support the aquaculture industry.

DEVELOPING SOCIAL LICENSE FOR TROUT AQUACULTURE IN THE NORTH CENTRAL REGION

Goal: Develop and test strategies designed to enhance social license for aquaculture in the North Central Region (NCR) of the U.S.

Objectives: 1. To map social license in selected locations in Michigan and Wisconsin. 2. To design and implement specific intervention strategies for each location. 3.

To evaluate the degree of change in social license before and after intervention. 4. To disseminate project results to aquaculture producers, Extension specialists, and the broader aquaculture producer and scientific community.



Facilities

No special facilities are required for the completion of this project. Proposal team members have adequate office space and computing equipment to complete the objectives as described.

References

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- Edwards, P., J. Lacey, S. Wyatt, and K. J. H. Williams. 2016. Social licence to operate and forestry-an introduction. *Forestry: An International Journal of Forest Research* 8(5):473-476. <https://doi.org/10.1093/forestry/cpw036> (May 2021)
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- Quigley, R. and J. Baines. 2014. How to improve your social licence to operate A New Zealand Industry Perspective. MPI Information Paper No: 2014/05, Ministry for Primary Industries, Wellington, New Zealand. ISBN No: 978-0-478-42386-0 (online)ISSN No: 2253-394X (online). Date viewed?
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<https://doi.org/10.1071/9780643104549> (May 2021)

Project Leaders

State	Name & Institution	Area of Specialization
Virginia	Jonathan van Senten Virginia Tech	Economics
Virginia	Carole Engle Engle-Stone Aquatic\$ LLC & Virginia Tech	Economics
Ohio	Matthew Smith The Ohio State University	Aquaculture Extension
Indiana	Kwamena Quagrainie Purdue University	Economics
Missouri	Charlie Arnot	Social License
Missouri	Melanie Fitzpatrick	Social License

ORGANIZATION AND ADDRESS Virginia Polytechnic Institute and State University 102 S King St. Hampton, VA 23669			USDA AWARD NO. Year 1: Objective 1,2,4			
PROJECT DIRECTOR(S) Jonathan van Senten & Carole R. Engle			Duration Proposed Months: 12	Duration Proposed Months: ____	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages			CSREES FUNDED WORK MONTHS			
1. No. of Senior Personnel			Calendar	Academic	Summer	
a. ____ (Co)-PD(s)						
b. ____ Senior Associates						
2. No. of Other Personnel (Non-Faculty)			6			\$24,463
a. <u>1</u> Research Associates-Postdoctorates . . .						
b. ____ Other Professionals						
c. ____ Paraprofessionals						
d. ____ Graduate Students						
e. ____ Prebaccalaureate Students						
f. ____ Secretarial-Clerical						
g. ____ Technical, Shop and Other						
Total Salaries and Wages <input type="checkbox"/>						\$24,463
B. Fringe Benefits (If charged as Direct Costs)						\$9,455
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>						\$33,918
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)						
E. Materials and Supplies						\$2,000
F. Travel						\$4,000
G. Publication Costs/Page Charges						
H. Computer (ADPE) Costs						
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)						
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)						\$10,000
K. Total Direct Costs (C through I) <input type="checkbox"/>						\$39,918
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)						
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>						\$49,918
N. Other <input type="checkbox"/>						
O. Total Amount of This Request <input type="checkbox"/>						\$49,918
P. Carryover -- (If Applicable) Federal Funds: \$			Non-Federal funds: \$		Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)					Leave Blank	
Cash (both Applicant and Third Party) <input type="checkbox"/>						
Non-Cash Contributions (both Applicant and Third Party) <input type="checkbox"/>						
NAME AND TITLE (Type or print)			SIGNATURE (required for revised budget only)			DATE
Project Director						
Authorized Organizational Representative						
Signature (for optional use)						
ORGANIZATION AND ADDRESS			USDA AWARD NO. Year 2 : Objective 1,2,4			

Virginia Polytechnic Institute and State University 102 S King St. Hampton, VA 23669			Duration Proposed Months: 12	Duration Proposed Months: _____	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
PROJECT DIRECTOR(S) Jonathan van Senten & Carole R. Engle			Funds Requested by Proposer	Funds Approved by CSREES (If different)		
A. Salaries and Wages			CSREES FUNDED WORK MONTHS			
1. No. of Senior Personnel			Calendar	Academic	Summer	
a. ___ (Co)-PD(s)						
b. ___ Senior Associates						
2. No. of Other Personnel (Non-Faculty)			6			\$25,441
a. <u>1</u> Research Associates-Postdoctorates . . .						
b. ___ Other Professionals						
c. ___ Paraprofessionals						
d. ___ Graduate Students.....						
e. ___ Prebaccalaureate Students.....						
f. ___ Secretarial-Clerical						
g. ___ Technical, Shop and Other						
Total Salaries and Wages <input type="checkbox"/>						\$25,441
B. Fringe Benefits (If charged as Direct Costs)						\$9,833
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>						\$35,274
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)						
E. Materials and Supplies						
F. Travel						\$4,000
G. Publication Costs/Page Charges						
H. Computer (ADPE) Costs						
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)						
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)						\$10,000
K. Total Direct Costs (C through I) <input type="checkbox"/>						\$39,274
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)						
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>						\$49,274
N. Other <input type="checkbox"/>						
O. Total Amount of This Request <input type="checkbox"/>						\$49,274
P. Carryover -- (If Applicable)			Federal Funds: \$	Non-Federal funds: \$	Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)					Leave Blank	
Cash (both Applicant and Third Party)						
Non-Cash Contributions (both Applicant and Third Party)						
NAME AND TITLE (Type or print)			SIGNATURE (required for revised budget only)			DATE
Project Director						
Authorized Organizational Representative						
Signature (for optional use)						
ORGANIZATION AND ADDRESS				USDA AWARD NO. Year 1 & 2 : Objective 1,2,4		

Virginia Polytechnic Institute and State University 102 S King St. Hampton, VA 23669			Duration Proposed Months: 24	Duration Proposed Months: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
PROJECT DIRECTOR(S) Jonathan van Senten & Carole R. Engle			Funds Requested by Proposer	Funds Approved by CSREES (If different)		
A. Salaries and Wages			CSREES FUNDED WORK MONTHS			
1. No. of Senior Personnel			Calendar	Academic	Summer	
a. ___ (Co)-PD(s)						
b. ___ Senior Associates						
2. No. of Other Personnel (Non-Faculty)			12			\$49,904
a. <u>1</u> Research Associates-Postdoctorates . . .						
b. ___ Other Professionals						
c. ___ Paraprofessionals						
d. ___ Graduate Students.....						
e. ___ Prebaccalaureate Students.....						
f. ___ Secretarial-Clerical						
g. ___ Technical, Shop and Other						
Total Salaries and Wages <input type="checkbox"/>						\$49,904
B. Fringe Benefits (If charged as Direct Costs)						\$19,288
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>						\$69,192
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)						
E. Materials and Supplies						\$2,000
F. Travel						\$8,000
G. Publication Costs/Page Charges						
H. Computer (ADPE) Costs						
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)						
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)						\$20,000
K. Total Direct Costs (C through I) <input type="checkbox"/>						\$79,192
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)						
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>						\$99,192
N. Other..... <input type="checkbox"/>						
O. Total Amount of This Request <input type="checkbox"/>						\$99,192
P. Carryover -- (If Applicable)			Federal Funds: \$	Non-Federal funds: \$	Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)					Leave Blank	
Cash (both Applicant and Third Party)					<input type="checkbox"/>	
Non-Cash Contributions (both Applicant and Third Party)					<input type="checkbox"/>	
NAME AND TITLE (Type or print)			SIGNATURE (required for revised budget only)			DATE
Project Director						
Authorized Organizational Representative						

**Budget Explanation for Virginia Tech
(van Senten & Engle)**

Objectives: 1,2,4

A. Salaries and Wages: \$49,904

Year 1: \$24,463

- Funding is requested to support 50% of a TBN Post-doc position at Virginia Tech to assist with completion of project activities. Annual salary for Post-doc is \$47,500.

Year 2: \$25,441

- Funding is requested to support 50% of a TBN Post-doc position at Virginia Tech to assist with completion of project activities. This accounts for annual escalation of 3%.

B. Fringe Benefits: \$19,288

Virginia Tech fringe benefits rate for a Post-doc position is 38.65% for a funding request of \$9,455 in Year 1 and \$9,833 in Year 2.

E. Materials and Supplies: \$2,000

Items	Year 1	Year 2	Total
Digital recording device, data storage drives and flash drives, survey support materials	\$2,000	\$0	\$2,000
Total	\$2,000	\$2,000	\$2,000

F. Travel (Domestic): 8,000

Year 1: \$4,000

- Travel funds are requested for domestic travel to participate in Community Advisory Panel meetings in Michigan. Year 1 will include 4 trips to Michigan at an estimated \$1,000 per person per trip; to include airfare, lodging, rental vehicle, fuel, and meals. Estimated expenses are:
 - Airfare: \$500
 - Hotel: \$106/night (2 nights)
 - Rental vehicle: \$100
 - Fuel: \$50
 - Meals: \$56/day (2 travel days, 1 work day)

Year 2: \$4,000

- Travel funds are requested for domestic travel to participate in Community Advisory Panel meetings in Michigan. Year 2 will include 3 trips to Michigan and will also include 1 trip to a regional conference in the North Central Region to present project results to aquaculture stakeholders. Estimated costs at \$1,000 per person per trip; to include airfare, lodging, rental vehicle, fuel, and meals.
 - Airfare: \$500
 - Hotel: \$106/night (2 nights)

- Rental vehicle: \$100
- Fuel: \$50
- Meals: \$56/day (2 travel days, 1 work day)

J. Other Indirect Costs: \$20,000

Funds are requested to support sub-contract services for Engle-Stone Aquatic\$, LLC. Dr. Carole Engle will provide 60 hours of her services per year to the project, at an hourly rate of \$150, for \$9,000 a year, in addition to \$1,000 per year for travel (\$350 roundtrip airfare and \$650 for hotel and per diem for one trip to Michigan per year) to project sites to assist with interventions, for each of two years, for a total request of \$20,000.

ORGANIZATION AND ADDRESS The Ohio State University 217 Elm Street London, Ohio, 43140				USDA AWARD NO. Year 1 : Objective 1,2,4				
PROJECT DIRECTOR(S) Matthew Smith				Duration Proposed Months: 12	Duration Proposed Months: ____	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)	
A. Salaries and Wages			CSREES FUNDED WORK MONTHS					
1. No. of Senior Personnel			Calendar	Academic	Summer			
a. <u>1</u> (Co)-PD(s)			0.5			\$2,084		
b. ____ Senior Associates								
2. No. of Other Personnel (Non-Faculty)								
a. ____ Research Associates-Postdoctorates . . .								
b. ____ Other Professionals								
c. ____ Paraprofessionals								
d. ____ Graduate Students								
e. ____ Prebaccalaureate Students								
f. ____ Secretarial-Clerical								
g. ____ Technical, Shop and Other								
Total Salaries and Wages <input type="checkbox"/>						\$2,084		
B. Fringe Benefits (If charged as Direct Costs)						\$657		
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>						\$2,741		
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)								
E. Materials and Supplies						\$150		
F. Travel						\$1,000		
G. Publication Costs/Page Charges								
H. Computer (ADPE) Costs								
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)								
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)								
K. Total Direct Costs (C through I) <input type="checkbox"/>						\$3,891		
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)								
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>						\$3,891		
N. Other..... <input type="checkbox"/>								
O. Total Amount of This Request <input type="checkbox"/>						\$3,891		
P. Carryover -- (If Applicable)			Federal Funds: \$		Non-Federal funds: \$		Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)						Leave Blank		
Cash (both Applicant and Third Party)						<input type="checkbox"/>		
Non-Cash Contributions (both Applicant and Third Party)						<input type="checkbox"/>		
NAME AND TITLE (Type or print)			SIGNATURE (required for revised budget only)				DATE	
Project Director								
Authorized Organizational Representative								
Signature (for optional use)								

ORGANIZATION AND ADDRESS The Ohio State University 217 Elm Street London, Ohio, 43140			USDA AWARD NO. Year 2 : Objective 1,2,4			
			Duration Proposed Months: 12 Funds Requested by Proposer	Duration Proposed Months: ____ Funds Approved by CSREES (If different)	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
PROJECT DIRECTOR(S) Matthew Smith						
A. Salaries and Wages		CSREES FUNDED WORK MONTHS				
1. No. of Senior Personnel		Calendar	Academic	Summer		
a. <u>1</u> (Co)-PD(s)		<u>0.5</u>			\$2,147	
b. ____ Senior Associates						
2. No. of Other Personnel (Non-Faculty)						
a. ____ Research Associates-Postdoctorates . . .						
b. ____ Other Professionals						
c. ____ Paraprofessionals						
d. ____ Graduate Students						
e. ____ Prebaccalaureate Students						
f. ____ Secretarial-Clerical						
g. ____ Technical, Shop and Other						
Total Salaries and Wages <input type="checkbox"/>					\$2,147	
B. Fringe Benefits (If charged as Direct Costs)					\$676	
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>					\$2,823	
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)						
E. Materials and Supplies					\$740	
F. Travel					\$1,000	
G. Publication Costs/Page Charges						
H. Computer (ADPE) Costs						
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)						
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)						
K. Total Direct Costs (C through I) <input type="checkbox"/>					\$4,563	
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)						
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>					\$4,563	
N. Other <input type="checkbox"/>						
O. Total Amount of This Request <input type="checkbox"/>					\$4,563	
P. Carryover -- (If Applicable) Federal Funds: \$		Non-Federal funds: \$		Total \$		
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)					Leave Blank	
Cash (both Applicant and Third Party) <input type="checkbox"/>						
Non-Cash Contributions (both Applicant and Third Party) <input type="checkbox"/>						
NAME AND TITLE (Type or print)		SIGNATURE (required for revised budget only)			DATE	
Project Director						
Authorized Organizational Representative						
Signature (for optional use)						
ORGANIZATION AND ADDRESS			USDA AWARD NO. Year 1 & 2 : Objective 1,2,4			

The Ohio State University 217 Elm Street London, Ohio, 43140			Duration Proposed Months: 24	Duration Proposed Months: ____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
PROJECT DIRECTOR(S) Matthew Smith			Funds Requested by Proposer	Funds Approved by CSREES (If different)		
A. Salaries and Wages			CSREES FUNDED WORK MONTHS			
1. No. of Senior Personnel			Calendar	Academic	Summer	
a. <u>1</u> (Co)-PD(s)			1			\$4,231
b. ___ Senior Associates						
2. No. of Other Personnel (Non-Faculty)						
a. ___ Research Associates-Postdoctorates . . .						
b. ___ Other Professionals						
c. ___ Paraprofessionals						
d. ___ Graduate Students.....						
e. ___ Prebaccalaureate Students.....						
f. ___ Secretarial-Clerical						
g. ___ Technical, Shop and Other						
Total Salaries and Wages <input type="checkbox"/>						\$4,231
B. Fringe Benefits (If charged as Direct Costs)						\$1,333
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>						\$5,564
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)						
E. Materials and Supplies						\$890
F. Travel						\$2,000
G. Publication Costs/Page Charges						
H. Computer (ADPE) Costs						
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)						
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)						
K. Total Direct Costs (C through I) <input type="checkbox"/>						\$8,454
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)						
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>						\$8,454
N. Other <input type="checkbox"/>						
O. Total Amount of This Request <input type="checkbox"/>						\$8,454
P. Carryover -- (If Applicable)			Federal Funds: \$	Non-Federal funds: \$	Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)					Leave Blank	
Cash (both Applicant and Third Party)					<input type="checkbox"/>	
Non-Cash Contributions (both Applicant and Third Party)					<input type="checkbox"/>	
NAME AND TITLE (Type or print)			SIGNATURE (required for revised budget only)			DATE
Project Director						
Authorized Organizational Representative						

**Budget Explanation for The Ohio State University
(Smith)**

Objectives: 1,2,4

A. Salaries and Wages: \$4,231

Year 1: \$2,084

- Salary is requested for 4% FTE (0.50 month) of a soft-funded Extension Educator’s time on this project in year 1 for \$2,084.

Year 2: \$2,147

- A 3% cost of living raise is permissible through Ohio State on proposed budgets. Salary is requested for 4% (0.50 month) of a soft-funded Extension Educator’s time on this project in year 2 for \$2,147

Year 1 and Year 2:

- Salary is requested for 4% FTE of the Extension Educator’s time for \$4,231.

C. Fringe Benefits: \$1,333

Fringe rate for participating staff for FY 2021 is \$657 for year 1 and \$676 for year 2.

E. Materials and Supplies: \$890

Items	Year 1	Year 2	Total
Office supplies (printing, flash drives, binders) for meetings and deliverables	\$150	\$740	\$890

F. Travel (Domestic): \$2,000

Year 1: \$1,000

- Funds are requested to participate in domestic travel as needed for the project. Meeting locations have not been chosen at this time. However, for reference the following information has been calculated as estimates:
- Transportation to travel to East Lansing, Michigan for one single day trip and to Green Bay, Wisconsin for one single day trip to assist with the community advisory panel meetings (\$1,000)

Total estimated costs to travel to East Lansing in year 1 (\$500):

Rental car: \$200

Gasoline for rental: \$70

Hotel: \$106

Meals: \$42

Miscellaneous: \$82

Total estimated costs to travel to Green Bay in year 1 (\$500):

Flight: \$300
Hotel: \$96
Meals: \$42
Miscellaneous: \$62

Year 2: \$1,000

- Funds are requested to participate in domestic travel as needed for the project. Meeting locations have not been chosen at this time. However, for reference the following information has been calculated as estimates:
- Transportation to travel to East Lansing, Michigan for one single day trip and to Green Bay, Wisconsin for one single day trip to assist with the community advisory panel meetings (\$1,000)

Total estimated costs to travel to East Lansing in year 2 (\$500):

Rental car: \$200
Gasoline for rental: \$70
Hotel: \$106
Meals: \$42
Miscellaneous: \$82

Total estimated costs to travel to Green Bay in year 2 (\$500):

Flight: \$300
Hotel: \$96
Meals: \$42
Miscellaneous: \$62

J. Other Direct Costs: \$0

No funds are requested for other direct costs.

ORGANIZATION AND ADDRESS Purdue University 403 W. State St. West Lafayette, IN 47907					USDA AWARD NO. Year 1: Objective 1,2,4									
					Duration Proposed Months: 12	Duration Proposed Months: ____	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)	Funds Requested by Proposer	Funds Approved by CSREES (If different)				
PROJECT DIRECTOR(S) Kwamena Quagrainie & Amy Shambach														
A. Salaries and Wages 1. No. of Senior Personnel			CSREES FUNDED WORK MONTHS											
			Calendar	Academic	Summer									
a. ____ (Co)-PD(s)														
b. ____ Senior Associates														
2. No. of Other Personnel (Non-Faculty)			0.03			\$1,451								
a. <u>1</u> Research Associates-Postdoctorates . . .														
b. ____ Other Professionals														
c. ____ Paraprofessionals														
d. ____ Graduate Students														
e. ____ Prebaccalaureate Students														
f. ____ Secretarial-Clerical														
g. ____ Technical, Shop and Other														
Total Salaries and Wages <input type="checkbox"/>						\$1,451								
B. Fringe Benefits (If charged as Direct Costs)						\$480								
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>						\$1,931								
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)														
E. Materials and Supplies						\$323								
F. Travel														
G. Publication Costs/Page Charges														
H. Computer (ADPE) Costs														
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)														
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)						\$775								
K. Total Direct Costs (C through I) <input type="checkbox"/>						\$2,254								
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)														
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>						\$3,029								
N. Other <input type="checkbox"/>														
O. Total Amount of This Request <input type="checkbox"/>						\$3,029								
P. Carryover -- (If Applicable)					Federal Funds: \$	Non-Federal funds: \$	Total \$							
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)								Leave Blank						
Cash (both Applicant and Third Party) <input type="checkbox"/>														
Non-Cash Contributions (both Applicant and Third Party) <input type="checkbox"/>														
NAME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)						DATE				
Project Director														
Authorized Organizational Representative														
Signature (for optional use)														
ORGANIZATION AND ADDRESS					USDA AWARD NO. Year 2 : Objective 1,2,4									

Purdue University 403 W. State St. West Lafayette, IN 47907			Duration Proposed Months: 12	Duration Proposed Months: _____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
PROJECT DIRECTOR(S) Kwamena Quagrainie & Amy Shambach			Funds Requested by Proposer	Funds Approved by CSREES (If different)		
A. Salaries and Wages			CSREES FUNDED WORK MONTHS			
1. No. of Senior Personnel			Calendar	Academic	Summer	
a. ___ (Co)-PD(s)						
b. ___ Senior Associates						
2. No. of Other Personnel (Non-Faculty)			0.03			\$1,488
a. <u>1</u> Research Associates-Postdoctorates . . .						
b. ___ Other Professionals						
c. ___ Paraprofessionals						
d. ___ Graduate Students.....						
e. ___ Prebaccalaureate Students.....						
f. ___ Secretarial-Clerical						
g. ___ Technical, Shop and Other						
Total Salaries and Wages <input type="checkbox"/>						\$1,488
B. Fringe Benefits (If charged as Direct Costs)						\$492
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>						\$1,980
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)						
E. Materials and Supplies						\$733
F. Travel						
G. Publication Costs/Page Charges						
H. Computer (ADPE) Costs						
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)						
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)						\$775
K. Total Direct Costs (C through I) <input type="checkbox"/>						\$2,713
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)						
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>						\$3,488
N. Other <input type="checkbox"/>						
O. Total Amount of This Request <input type="checkbox"/>						\$3,488
P. Carryover -- (If Applicable)			Federal Funds: \$	Non-Federal funds: \$	Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)					Leave Blank	
Cash (both Applicant and Third Party)					<input type="checkbox"/>	
Non-Cash Contributions (both Applicant and Third Party)					<input type="checkbox"/>	
NAME AND TITLE (Type or print)			SIGNATURE (required for revised budget only)			DATE
Project Director						
Authorized Organizational Representative						
Signature (for optional use)						
ORGANIZATION AND ADDRESS				USDA AWARD NO. Year 1 & 2 : Objective 1,2,4		

Purdue University 403 W. State St. West Lafayette, IN 47907			Duration Proposed Months: 24	Duration Proposed Months: ____	Non-Federal Proposed Cost- Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
PROJECT DIRECTOR(S) Kwamena Quagrainie & Amy Shambach			Funds Requested by Proposer	Funds Approved by CSREES (If different)		
A. Salaries and Wages			CSREES FUNDED WORK MONTHS			
1. No. of Senior Personnel			Calendar	Academic	Summer	
a. ____ (Co)-PD(s)						
b. ____ Senior Associates						
2. No. of Other Personnel (Non-Faculty)			0.06			\$2,939
a. <u>1</u> Research Associates-Postdoctorates . . .						
b. ____ Other Professionals						
c. ____ Paraprofessionals						
d. ____ Graduate Students.....						
e. ____ Prebaccalaureate Students.....						
f. ____ Secretarial-Clerical						
g. ____ Technical, Shop and Other						
Total Salaries and Wages <input type="checkbox"/>						\$2,939
B. Fringe Benefits (If charged as Direct Costs)						\$972
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>						\$3,911
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)						
E. Materials and Supplies						\$1,056
F. Travel						
G. Publication Costs/Page Charges						
H. Computer (ADPE) Costs						
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)						
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)						\$1,550
K. Total Direct Costs (C through I) <input type="checkbox"/>						\$4,967
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)						
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>						\$6,517
N. Other <input type="checkbox"/>						
O. Total Amount of This Request <input type="checkbox"/>						\$6,517
P. Carryover -- (If Applicable)			Federal Funds: \$	Non-Federal funds: \$	Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)					Leave Blank	
Cash (both Applicant and Third Party)					<input type="checkbox"/>	
Non-Cash Contributions (both Applicant and Third Party)					<input type="checkbox"/>	
NAME AND TITLE (Type or print)			SIGNATURE (required for revised budget only)			DATE
Project Director						
Authorized Organizational Representative						
Signature (for optional use)						

**Budget Explanation for Purdue University
(Quagraine & Shambach)**

Objectives: 1,2,4

A. Salaries and Wages : 2,939

Year 1: \$1,451

- Amy Shambach will be supported on this project at 3%FTE with the main responsibility of assisting with Objectives 1 and 2. She will assist in identifying trusted information sources, recruiting influencers of public opinion, conducting local community interviews, and setting up community advisory panels.

Year 2: \$1,488

- Amy Shambach will be supported on this project at 3%FTE with the main responsibility of assisting with Objective 4. She will assist in developing project deliverables, conducting workshops, and in the dissemination of project outputs among Land Grant and Sea Grant Extension networks.

D. Fringe Benefits: \$972

Fringe benefits are budgeted in accordance with Purdue University policy:

Extension Associate 33.05%

E. Materials and Supplies: \$1,056

Items	Year 1	Year 2	Total
Software expenses associate with recruiting for the workshops	\$323		\$323
Expenses associated with outreach activities through Extension networks		\$733	\$733

F. Travel (Domestic): \$0

Year 1: \$0

- No funds are requested for travel

Year 2: \$0

- No funds are requested for travel

J. Other Indirect Costs: \$1,550

Other direct costs are associated with conducting the Community Advisory Panels including reimbursement for participants. Room rental for Panel discussion \$550. Travel reimbursement for community participants 40 @ \$25.

ORGANIZATION AND ADDRESS Center for Food Integrity 2900 NE Brooktree Ln. #200 Kansas City, MO 64119			USDA AWARD NO. Year 1 : Objective 1,2,3,4			
PROJECT DIRECTOR(S) Charlie Arnot & Melanie Fitzpatrick			Duration Proposed Months: 12	Duration Proposed Months: ____	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages			Funds Requested by Proposer	Funds Approved by CSREES (If different)		
1. No. of Senior Personnel						
			CSREES FUNDED WORK MONTHS			
			Calendar	Academic	Summer	
a. <u>2</u> (Co)-PD(s)			1.45			\$67,000
b. ____ Senior Associates						
2. No. of Other Personnel (Non-Faculty)						
a. ____ Research Associates-Postdoctorates . . .						
b. ____ Other Professionals						
c. ____ Paraprofessionals						
d. ____ Graduate Students						
e. ____ Prebaccalaureate Students						
f. ____ Secretarial-Clerical						
g. ____ Technical, Shop and Other						
Total Salaries and Wages <input type="checkbox"/>						\$67,000
B. Fringe Benefits (If charged as Direct Costs)						\$0
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>						\$67,000
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)						
E. Materials and Supplies						\$1,000
F. Travel						\$17,000
G. Publication Costs/Page Charges						
H. Computer (ADPE) Costs						
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)						
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)						\$11,000
K. Total Direct Costs (C through I) <input type="checkbox"/>						\$85,000
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)						
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>						\$96,000
N. Other <input type="checkbox"/>						
O. Total Amount of This Request <input type="checkbox"/>						\$96,000
P. Carryover -- (If Applicable) Federal Funds: \$			Non-Federal funds: \$		Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)					Leave Blank	
Cash (both Applicant and Third Party) <input type="checkbox"/>						
Non-Cash Contributions (both Applicant and Third Party) <input type="checkbox"/>						
NAME AND TITLE (Type or print)			SIGNATURE (required for revised budget only)			DATE
Project Director						
Authorized Organizational Representative						
Signature (for optional use)						

ORGANIZATION AND ADDRESS Center for Food Integrity 2900 NE Brooktree Ln. #200 Kansas City, MO 64119				USDA AWARD NO. Year 2 : Objective 1,2,3,4			
PROJECT DIRECTOR(S) Charlie Arnot & Melanie Fitzpatrick				Duration Proposed Months: 12	Duration Proposed Months: ____	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages				Funds Requested by Proposer	Funds Approved by CSREES (If different)		
1. No. of Senior Personnel							
CSREES FUNDED WORK MONTHS				\$53,000			
Calendar Academic Summer							
a. <u>2</u> (Co)-PD(s)							
b. ____ Senior Associates							
2. No. of Other Personnel (Non-Faculty)							
a. ____ Research Associates-Postdoctorates							
b. ____ Other Professionals							
c. ____ Paraprofessionals							
d. ____ Graduate Students							
e. ____ Prebaccalaureate Students							
f. ____ Secretarial-Clerical							
g. ____ Technical, Shop and Other							
Total Salaries and Wages <input type="checkbox"/>				\$53,000			
B. Fringe Benefits (If charged as Direct Costs)				\$0			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>				\$53,000			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies				\$1,000			
F. Travel				\$10,000			
G. Publication Costs/Page Charges							
H. Computer (ADPE) Costs							
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)							
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)				\$6,000			
K. Total Direct Costs (C through I) <input type="checkbox"/>				\$64,000			
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>				\$70,000			
N. Other <input type="checkbox"/>							
O. Total Amount of This Request <input type="checkbox"/>				\$70,000			
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)						Leave Blank	
Cash (both Applicant and Third Party) <input type="checkbox"/>							
Non-Cash Contributions (both Applicant and Third Party) <input type="checkbox"/>							
NAME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)			DATE
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

ORGANIZATION AND ADDRESS Center for Food Integrity 2900 NE Brooktree Ln. #200 Kansas City, MO 64119				USDA AWARD NO. Year 1 & 2 : Objective 1,2,3,4			
PROJECT DIRECTOR(S) Charlie Arnot & Melanie Fitzpatrick				Duration Proposed Months: 24	Duration Proposed Months: ____	Non-Federal Proposed Cost-Sharing/ Matching Funds (If required)	Non-federal Cost-Sharing/ Matching Funds Approved by CSREES (If Different)
A. Salaries and Wages				Funds Requested by Proposer	Funds Approved by CSREES (If different)		
1. No. of Senior Personnel							
CSREES FUNDED WORK MONTHS				\$120,000			
Calendar Academic Summer							
a. <u>2</u> (Co)-PD(s)							
b. ____ Senior Associates							
2. No. of Other Personnel (Non-Faculty)							
a. ____ Research Associates-Postdoctorates . . .							
b. ____ Other Professionals							
c. ____ Paraprofessionals							
d. ____ Graduate Students							
e. ____ Prebaccalaureate Students							
f. ____ Secretarial-Clerical							
g. ____ Technical, Shop and Other							
Total Salaries and Wages <input type="checkbox"/>				\$120,000			
B. Fringe Benefits (If charged as Direct Costs)				\$0			
C. Total Salaries, Wages, and Fringe Benefits (A plus B) <input type="checkbox"/>				\$120,000			
D. Nonexpendable Equipment (Attach supporting data. List items and dollar amounts for each item.)							
E. Materials and Supplies				\$2,000			
F. Travel				\$27,000			
G. Publication Costs/Page Charges							
H. Computer (ADPE) Costs							
I. Student Assistance/Support (Scholarships/fellowships, stipends/tuition, cost of education, etc. Attach list of items and dollar amounts for each item.)							
J. All Other Direct Costs (In budget narrative, list items and dollar amounts and provide supporting data for each item.)				\$17,000			
K. Total Direct Costs (C through I) <input type="checkbox"/>				\$150,000			
L. F&A/Indirect Costs. (If applicable, specify rate(s) and base(s) for on/off campus activity. Where both are involved, identify itemized costs in on/off campus bases.)							
M. Total Direct and F&A/Indirect Costs (J plus K) <input type="checkbox"/>				\$167,000			
N. Other <input type="checkbox"/>							
O. Total Amount of This Request <input type="checkbox"/>				\$167,000			
P. Carryover -- (If Applicable) Federal Funds: \$				Non-Federal funds: \$		Total \$	
Q. Cost Sharing/Matching (Breakdown of total amounts shown in line O)						Leave Blank	
Cash (both Applicant and Third Party) <input type="checkbox"/>							
Non-Cash Contributions (both Applicant and Third Party) <input type="checkbox"/>							
NAME AND TITLE (Type or print)				SIGNATURE (required for revised budget only)			DATE
Project Director							
Authorized Organizational Representative							
Signature (for optional use)							

**Budget Explanation for Center for Food Integrity
(Arnot & Fitzpatrick)**

Objectives: 1,2,3,4

A. Salaries and Wages: \$120,000

Most of the work that will be performed in this project requires the highest level of experience, skill and finesse, and is therefore being handled by the CEO and a Vice President.

CFI personnel will contribute significantly more time than what CFI is charging in this proposal. CFI made a strategic decision, based on its mission and commitment to the food and agriculture industry, to only charge a portion of their time and contribute the rest to submit the budget request for less than what it will take to ensure this important work have the full consideration of NCRAC. There will most certainly be non-billed time investments by the CEO, VP and others at CFI in order to accomplish the objectives of this project objectives.

The actual value of CFI hourly rate time for year one ONLY of this project is \$122,475. Even if calculated at USDA approved rates as used by the United Soybean Board, the value of time to accomplish the tasks in year 1 only is \$101,195. Thus, CFI is contributing \$55,475 in non-billed time to this project for year 1. For year 2, CFI will contribute approximately \$38,000 in time that will not be billed for this project.

Year 1: \$67,000

- These costs are for Look East staff to conduct telephone interviews to form the Community Advisory Panel and define issues; shared values training for participating farmers, planning for each panel meeting, moderating each meeting; designing intervention strategies and implementing intervention strategies. Time is also allocated for evaluation of the project as well as dissemination of results.

Year 2: \$53,000

- These costs are for Look East staff to conduct telephone interviews to form the Community Advisory Panel and define issues; shared values training for participating farmers, planning for each panel meeting, moderating each meeting; designing intervention strategies and implementing intervention strategies. Time is also allocated for evaluation of the project as well as dissemination of results.

E. Fringe Benefits: \$0

No funding is requested for fringe benefits.

E. Materials and Supplies: \$2,000

Items	Year 1	Year 2	Total
Meeting materials	\$440	\$440	\$880
Name tags and tent cards	\$100	\$100	\$200
Note pads	\$50	\$50	\$100

Flip Charts (self Stick – purchase for each meeting)	\$400	\$400	\$800
Markers	\$10	\$10	\$20
Total	\$1,000	\$1,000	\$2,000

F. Travel (Domestic): \$27,000

Year 1: \$17,000

- Travel to Michigan and Wisconsin for Community Advisory Panel meetings. Year 1 will be 6 total trips to Michigan (2 people for 4 trips and 1 person for 2 trips). Year 1 will be 5 total trips to Wisconsin (2 people for 2 trips and 1 person for 3 trips). Each trip is expected to have one overnight and average \$1,000 per person to include lodging, plane ticket, ground transportation, rental car, gas, and meals
 - Plane Fare \$525
 - Rental Car \$150
 - Hotel: \$125
 - Meals: \$100
 - Miscellaneous: \$100 (parking, gas for rental car)
 -

Year 2: \$10,000

- Travel to Michigan and Wisconsin for Community Advisory Panel meetings. Year 2 will be 3 total trips to Michigan (2 people for 2 trips and 1 person for 1 trip). Year 2 will be 3 total trips to Wisconsin (2 people for 2 trips and 1 person for 1 trip). Each trip is expected to have one overnight and average \$1,000 per person to include lodging, plane ticket, ground transportation, rental car, gas, and meals.
 - Plane Fare \$525
 - Rental Car \$150
 - Hotel: \$125
 - Meals: \$100
 - Miscellaneous: \$100 (parking, gas for rental car)

J. Other Indirect Costs: \$17,000

Other direct costs are for dinner and meeting space to conduct the Community Advisory Panels. Each meeting is budgeted for \$1,000 for food and meeting space (9 x Michigan & 8x Wisconsin)

Budget Summary

Year 1

	VT (van Senten & Engle)	OSU (Smith)	Purdue (Quagraine & Shambach)	Center for Food Integrity (Arnot & Fitzpatrick)	Project Total
Salaries, Wages,	\$24,463	\$2,084	\$1,454	\$67,000	\$95,001
Benefits	\$9,455	\$657	\$500	\$0	\$10,612
Nonexpendable Equipment	\$0	\$0	\$0	\$0	\$0
Materials and Supplies	\$2,000	\$150	\$300	\$1,000	\$3,450
Travel	\$4,000	\$1,000	\$0	\$17,000	\$22,000
All Other Direct Costs	\$10,000	\$0	\$775	\$11,000 (meeting expenses)	\$21,775
Total	\$49,918	\$3,891	\$3,029	\$96,000	\$152,838

Year 2

	VT (van Senten & Engle)	OSU (Smith)	Purdue (Quagraine & Shambach)	Center for Food Integrity (Arnot & Fitzpatrick)	Project Total
Salaries, Wages	\$25,441	\$2,147	\$1,498	\$53,000	\$82,086
Benefits	\$9,833	\$676	\$515	\$0	\$11,024
Nonexpendable Equipment	\$0	\$0	\$0	\$0	\$0
Materials and Supplies	\$0	\$740	\$700	\$1,000	\$2,440
Travel	\$4,000	\$1,000	\$0	\$10,000	\$15,000
All Other Direct Costs	\$10,000	\$0	\$775	\$6,000 (meeting expenses)	\$16,775
Total	\$49,274	\$4,563	\$3,488	\$70,000	\$127,325

Year 1 & 2

	VT (van Senten & Engle)	OSU (Smith)	Purdue (Quagraine & Shambach)	Center for Food Integrity (Arnot & Fitzpatrick)	Project Total
Salaries, Wages	\$49,904	\$4,231	\$2,952	\$120,000	\$177,087
Benefits	\$19,288	\$1,333	\$1,015	\$0	\$21,636
Nonexpendable Equipment	\$0	\$0	\$0	\$0	\$0
Materials and Supplies	\$2,000	\$890	\$1,000	\$2,000	\$5,890
Travel	\$8,000	\$2,000	\$0	\$27,000	\$37,000
All Other Direct Costs	\$20,000	\$0	\$1,550	\$17,000	\$38,550
Total	\$99,192	\$8,454	\$6,517	\$166,000	\$280,163

Schedule for Completion of Objectives

Start date: 9/1/2021

Completion date: 8/31/2023

Objectives & Tasks	Year 1				Year 2			
	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Objective 1								
Identify trusted sources & influencers								
Form community advisory panel								
Conduct pre-intervention interviews								
Objective 2								
Design intervention strategies								
Implement interventions								
Objective 3								
Evaluate strategies								
Objective 4								
Fact sheet								
National webinar & training workshop								
Presentations & articles, trade newsletters								
Manual on social license								
Refereed journal manuscript								
Final project report & Highlights summary								

Participating Institutions and Co-Principal Investigators

Virginia Tech

Jonathan van Senten

Carole R. Engle

The Ohio State University

Matthew Smith

Purdue University

Kwamena Quagraine

Amy Shambach

Center for Food Integrity

Charlie Arnot

Melanie Fitzpatrick



Jonathan van Senten
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Virginia Tech
102 S King St.
Hampton, VA 23669

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Email: jvansenten@vt.edu

Education

The University of Arkansas at Pine Bluff

Doctor of Philosophy, 2016
Department of Aquaculture and Fisheries, Pine Bluff, Arkansas

The University of Miami

Professional Master of Science in Marine Affairs & Policy, 2012
Rosenstiel School of Marine and Atmospheric Sciences, Key Biscayne, Florida

Barry University

Bachelor of Science in Marine Biology, 2010
Barry University, Miami Shores, Florida

POSITIONS

<i>2020 – Current</i>	Assistant Director, Virginia Seafood AREC, Virginia Tech
<i>2018 - Current</i>	Assistant Professor, Virginia Seafood AREC, Department of Agricultural and Applied Economics, Virginia Tech. Hampton, VA.
<i>2016 -2018</i>	Postdoctoral Associate, Virginia Seafood AREC, Virginia Polytechnic Institute and State University. Hampton, VA.
<i>2013 - 2016</i>	Graduate Research Assistant, Aquaculture/Fisheries Center, University of Arkansas at Pine Bluff. Pine Bluff, Arkansas.

Scientific and Professional Organizations

United States Aquaculture Society. Website Sub-unit Committee. Committee member.
(February 2020 – Present)
United States Aquaculture Society. Finance Committee. Committee member.
(February 2018 – Present)

Selected Publications

Engle, C.R., van Senten, J., Fornshell, G. 2019. Regulatory costs on U.S. salmonid farms. *Journal of the World Aquaculture Society*. <https://doi.org/10.1111/jwas.12604>
van Senten, J., Engle, C.R., Hartman, K., Johnson, K., Gustafson, L. 2018. A uniform health code for aquaculture farms: an economic analysis of potential farm-level costs and benefits. *Preventive Veterinary Medicine*. DOI: 10.1016/j.prevetmed.2018.05.007
van Senten, J., Dey, M., Engle, C.R. 2018. Effects of regulations on technical efficiency of U.S. baitfish and sportfish producers. *Aquaculture Economics & Management* 22:3, 284-305. DOI: 10.1080/13657305.2018.1454539.



Carole Engle
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Strasburg, VA 22557

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E-mail: cengle8523@gmail.com

EDUCATION

Auburn University

Doctor of Philosophy, 1981

Auburn University

Master of Science, 1978

Friends World College

Bachelor of Science, 1975

POSITIONS

2015-present	Adjunct Faculty, Virginia Seafood AREC, Virginia Tech Univ.
2015-present	Member/Manager, Engle-Stone Aquatic\$ LLC
1996-2015 (retired)	Chairperson/Director, Aquaculture and Fisheries, UAPB
1994-2015	Professor, Aquaculture/Fisheries Center, Assoc. Prof. 1988-1994, UAPB
1986-88	Assistant Professor, Economics, Auburn University at Montgomery

SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

World Aquaculture Society, past Director, current member; USAS, past-President
Intern. Assoc. Aquaculture Economics & Management, past-President, current Board member
Catfish Farmers of Arkansas, Board member; Catfish Farmers of America, member
Arkansas Bait and Ornamental Fish Growers Association, member
US Trout Farmers Association, member; National Aquaculture Association, member

SELECTED PUBLICATIONS (5 books, 132 journal articles, 18 editorials, 16 magazine columns, 48 book chapters/monographs, 20 proceedings, 125 extension/trade)

Engle, C.R. 2019. Aquaculture Businesses: A Practical Guide to Economics and Marketing. 5M Publishing. Release date: February, 2020.

Engle, C.R. 2010. Aquaculture Economics and Financing: Management and Analysis. Blackwell Scientific, Ames, Iowa.

Engle, C.R., K. Quagraine, and Madan Dey. 2017. The Aquaculture Marketing Handbook. 2nd Edition. Blackwell Scientific, Ames, Iowa.

Engle, C.R., G. Kumar, and J. van Senten, 2020. Cost drivers and profitability of U.S. pond, raceway, and RAS aquaculture. Journal of the World Aquaculture Society. Article DOI: 10.1002/JWAS.12706

Engle, C.R., J. van Senten, and G. Fornshell. 2019. Regulatory costs on U.S. salmonid farms. Journal of the World Aquaculture Society 50(3):522-549. doi.org/10.1111/jwas.12604.

van Senten, J., M. Dey, and C.R. Engle. 2018. Effects of regulations on technical efficiency of U.S. baitfish and sportfish producers. Aquaculture Economics & Management 22(3):284-305.

Kumar, G., C. Engle, and C. Tucker. 2018. Factors driving aquaculture technology adoption. Journal of the World Aquaculture Society 49(3):447-476.

Engle, C.R. and N. M. Stone. 2013. Competitiveness of U.S. aquaculture within the current U.S. regulatory framework. Aquaculture Economics & Management 17(3):251-280.



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Education

The Ohio State University

Doctor of Philosophy, projected graduation 2022

Department of Agricultural Communication, Education, and Leadership | Columbus, Ohio

University of Arkansas at Pine Bluff

Master of Science in Aquaculture & Fisheries, 2015

Department of Aquaculture & Fisheries | Pine Bluff, Arkansas

Auburn University

Bachelor of Science in Fisheries Management, 2012

Department of Fisheries & Allied Aquacultures | Auburn, Alabama

Positions

2019 – Current	Program Director, Aquaculture Extension, The Ohio State University
2016 – 2019	Extension Aquaculture Specialist, The Ohio State University
2015 – 2016	Extension Fish Health Associate, University of Arkansas at Pine Bluff, Lonoke Fish Disease Diagnostics Laboratory
2013 – 2015	Graduate Researcher, University of Arkansas at Pine Bluff

Scientific and Professional Organizations

North Central Regional Aquaculture Center, *Chair of the Extension Technical Committee and Board member* (2018 – Current)

North Central Regional Aquaculture Center, *Technical Committee member/Extension and Executive Committee member/Extension* (2016 – 2018)

Ohio Aquaculture Association, *Active member and Ex-officio Board member* (2016 – Current)

United States Aquaculture Society (2012 – Current)

World Aquaculture Society (2012 – Current)

Selected Publications

Smith, M.A. and N.M. Stone. 2018. Split Ponds Effectively Overwinter Golden Shiners. *Journal of the World Aquaculture Society*. 48 (5):760-769.

Smith, M.A. 2018. Industry and researcher round table on the future of food fish/shrimp production in Ohio. OSU South Centers Connections Newsletter Achievements Edition. Winter. 3.

Smith, M.A. 2018. Comprehensive outreach and training program to expand development of north central region aquaculture. OSU South Centers Connections Newsletter Achievements Edition. Winter. 4.

Smith, M.A. 2017. Temperature effects on growth and metabolism of fishes. *Buckeye Aquafarming*. 2(2) 5-6.



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Education

University of Alberta

Doctor of Philosophy, Agricultural Economics,
University of Alberta, Canada

Positions

2005 – Present Director / Assistant Professor / Associate Professor/ Professor, Aquaculture
Economics & Marketing / Extension Specialist Purdue University / Illinois-
Indiana Sea Grant

Selected Publications

- Engle, C.R., K.K. Quagraine, and M.M. Dey. Seafood and Aquaculture Marketing Handbook. 2nd Edition, Wiley-Blackwell Publishing, West Sussex, UK. 2017.
- Cai, J., K.K. Quagraine, and N. Hishamunda. 2017. Social and Economic Performance of Tilapia Farming in Africa. FAO Fisheries and Aquaculture Circular N0. 1132, FIAA/C1132. Rome, Italy.
- Quagraine, K.K. The Market for Aquaculture Products: Market Efficiency and Global Competitiveness. Edited by K.K. Quagraine. Routledge, Abingdon, Oxon, England. 2013
- Akuffo, A.S., and K.K. Quagraine. Assessment of Household Food Security in Fish Farming Communities in Ghana. *Sustainability*. 11(10); 2807, 2019. <https://doi.org/10.3390/su11102807>
- Amankwah, A., and K.K. Quagraine. Aquaculture Feed Technology Adoption and Smallholder Household Welfare in Ghana. *Journal of the World Aquaculture Society*. 50 (4):827-841, 2019. <https://doi.org/10.1111/jwas.12544>
- Quagraine, K.K. Consumer Willingness to Pay for a Saline Fish Species Grown in the US Midwest: The Case of Striped Bass, *Morone saxatilis*. *Journal of the World Aquaculture Society*. 50(1); 163-171, 2019. <https://doi.org/10.1111/jwas.12464> Date viewed.
- Quagraine, K.K., and J. Chu. Determinants of Catch Sales in Ghanaian Artisanal Fisheries. *Sustainability*. 11(2); 298, 2019. <https://doi.org/10.3390/su11020298>
- Quagraine, K.K., R.M.V. Flores, Hye-Ji Kim, and V. McClain. Economic Analysis of Aquaponics and Hydroponics Production in the U.S. Midwest, *Journal of Applied Aquaculture*. 30(1); 1-14, 2018. <https://doi.org/10.1080/10454438.2017.1414009>
- Amankwah, A., K.K. Quagraine, and P.V. Preckel. Demand for Improved Fish Feed in the Presence of a Subsidy: A Double Hurdle Application in Kenya. *Agricultural Economics*. 47(6); 633-643, 2016. <https://doi.org/10.1111/agec.12261>
- Darko, F.A., K.K. Quagraine, and S. Chenyambuga. Consumer Preferences for Farmed Tilapia in Tanzania: A Choice Experiment Analysis. *Journal of Applied Aquaculture*. 28(3); 131-143, 2016. <https://doi.org/10.1080/10454438.2016.1169965>

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Education

Ball State University

Bachelor of Science in Biology, 2010

College of the Redwoods

A.A., A.S. in Science and Mathematics, Marine Technology, 2002

Positions

2019 – present	Aquaculture Marketing Outreach Association Illinois-Indiana Sea Grant, Purdue University, Indiana
Oct. 2014 – 2019	Aquaculture Lab Technician RDM Aquaculture LLC, Indiana
Aug. 2014 – Oct. 2014	Consultant Aqua International Corporation, Costa Rica
Jan. 2014 - Aug. 2014	Compliance and Certification Coordinator Bell Aquaculture, Indiana
2012 – 2013	Farm Manager Bell Aquaculture, Indiana
2010 - 2012	Analytical Research Coordinator Bell Aquaculture, Indiana
2010	Undergraduate Intern Oregon State University, Oregon
2007	Farm Worker 1 University of Hawaii, Hawaii
2001 – 2005	Fisheries Technician Pacific States Marine Fisheries Commission, California

Scientific and Professional Organizations

Indiana Aquaculture Association Inc., past board member, current Secretary

Selected publications

Carlton, J.S., Foley, C. Shambach, A., 2020. Walleye Aquaculture Working Group Workshop: Identifying Walleye Marketing and Production Barriers. Accessible: <https://iiseagrant.org/publications/walleye-aquaculture-working-group-workshop-identifying-walleye-marketing-and-production-barriers/>. Date viewed

Stinton, A.M., 2015. Tech Talk: Brown Water Basics. Indiana Aquaculture Association Newsletter. Issue 3: 6-9.

Stinton, A., Ciannelli, L, Reese, D., and Wakefield, W., 2014. Using In Situ Video Analysis to Assess Juvenile Flatfish Behavior Along the Oregon Central Coast, CalCOFI Rep., Vol.55, 2014.

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Education

Webster University

Master of Business Administration, Summa Cum Laude | St. Louis, Missouri

University of Missouri - Columbia

Bachelor of Journalism | Columbia, Missouri

Cottey College

Associates of Arts | Nevada, Missouri

Positions

2019 – Current	Vice President of Operations, Look East Public Relations
2017 – 2019	Senior Director of Marketing and Communications, Indiana Soybean Alliance
2014 – 2017	Account Director, Bader Rutter, Integrated Marketing
2011 – 2013	Director, Markets and Strategy, SmithBucklin Corporation (United Soybean Board)
2006 – 2011	U.S. Utilization Director, SmithBucklin Corporation (United Soybean Board)
2003 – 2006	Development Manager, National Corn Growers Association
1991 – 2003	Manager, Corporate Communications, Novus International, Inc.

VITA

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Education

University of Nebraska

Bachelor of Science, Broadcast Journalism | Lincoln, Nebraska, 1984

Harvard/MIT

Certificate, School of Negotiation, Dealing with an Angry Public, 1994

Center for Creative Leadership

Certificate, Foundations of Leadership, 1998

National Investor Relations Institute

Certificate, Introduction to Investor Relations, 2002

Certificate, Finance and Accounting for Non-Financial Managers, 2002

Steven Covey Situational Leadership Training

Certificate, 2003

Public Relations Society of America

Accreditation, Public Relations, 2004

Positions

2007 – Current	Chief Executive Officer, The Center for Food Integrity
2004 – Current	Founder and President CMA Consulting, LLC/Look East Public Relations
1996 – 2004	Vice President of Communications & Public Affairs, Premium Standard Farms
1993 – 1996	Director of Communications and Training, Premium Standard Farms
1992 – 1993	Manager of Account Services, Bates & Associates

Scientific and Professional Organizations

Public Relations Society of America

Books

Arnot, Charlie; 2018; Size Matters: Why We Love To Hate Big Food; Copernicus Books, a brand of Springer; Göttingen, Germany

Checklist for Submission of Full Proposals

- ✓ Follow guidelines with the exception of the budget sheets.
- ✓ Format manuscripts for 22 x 28 cm (8½ x 11 inch).
- ✓ Number *all* pages sequentially.
- ✓ Use 10-12 font; Times New Roman. Do not justify right margins.
- ✓ Format headings appropriately.
- ✓ Leave at least a 2.5-cm (1-inch) margin on all sides.
- ✓ Use metric units of measurement with English units in parenthesis, e.g. 2.54 cm (1 inch).
- ✓ Define all abbreviations the first time they are used.
- ✓ Express ratios by using a slant line (e.g. mg/L).
- ✓ Scientific names should accompany common names in the title and when they are first mentioned in the abstract and in the text. Authority for scientific names need not accompany the genus and species unless needed for clarity.
- ✓ Spell out one to ten unless followed by a unit of measurement (e.g. four fish, 4 kg, 14 fish). Do not begin a sentence with a numeral. Use 1,000 instead of 1000; 0.13 instead of .13; and % instead of percent.
- ✓ Use the 24-hour clock for dial time: 0830, not 8:30 a.m. The calendar date should be day month year (7 August 1990).
- ✓ Include signed Letters of Intent for identified Extension and Industry Liaisons.
- ✓ Signed Authorized Organization Representative (AOR) form from each funded PI's institution are welcomed but not required at this time.
- ✓ Include the required three (3) Letters of Support from Industry members who are not directly involved in the proposed project.
- ✓ Assemble the full proposal in this order: Title Page, Project Summary, Justification, Related Current and Previous Work, Statement Regarding Duplication of Research, Anticipated Benefits, Objective(s), Deliverables, Procedures, Evaluation and Outreach (Logic Model included), Facilities, References, Project Leaders, Budget, Budget Explanation per Institution, Budget Summary, Schedule for Completion of Objectives, Participating Institutions and Principal Investigators, Curriculum Vitae for Principal Investigators (PIs).
- ✓ Provide names of three possible reviewers who will not have a Conflict of Interest.
- ✓ All identified co-PIs have been provided a final draft of the full proposal.
- ✓ Submit full proposal (including all required documentation) in a single MS Word document.

If the NCRAC Administrative Office cannot verify the inclusion of any element, the Full Proposal will not be accepted.

Jonathan van Susteren

10/28/2020

Principal Investigator Signature

Date