

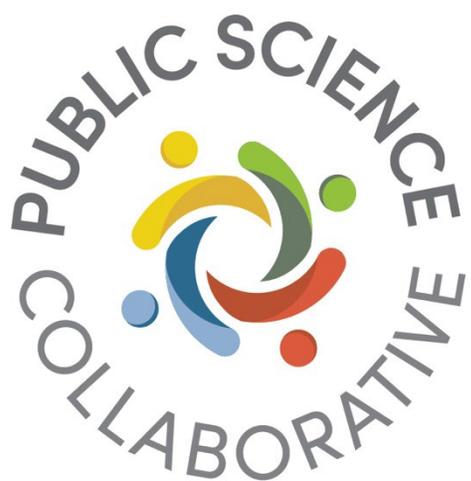


# AG2PI Community Workshop

PSC Workshop 1: Promoting Diversity and Inclusivity in G2P Research

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*"Science Consulting for the Public Good"*

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# Executive Summary



On November 18<sup>th</sup>, 2021 the Public Science Collaborative<sup>1</sup> (PSC) led the first of two workshops for the Community Workshop Series for the Agricultural Genome to Phenome Initiative (AG2PI). The workshop series and corresponding reports were completed in coordination with partners from AG2PI. Funding for this project came from the AG2PI Seed Grant Program, from USDA-NIFA awards.



Presenters for the workshop included Cass Dorius (principle investigator), Shawn Dorius (co-principle investigator), Rachael Voas (co-principle investigator), along with facilitators Kelsey Van Selous & Masoud Nosrati. Workshop details may be viewed through AG2PI website<sup>2</sup> and the video recording may be viewed through YouTube.<sup>3</sup>

The workshop focused on three main tasks:

- 1. Introduction of ELSI/ELSEE**
- 2. Stakeholder Mapping**
- 3. Persona Development**

The goal of the workshop was to introduce the concepts of diversity and inclusivity in G2P research, help AG2PI scholars identify key stakeholders to support diverse, equitable, and inclusive science. The interactive workshop aimed to promote a more inclusive, diverse, and human-centered approach to research that leverages the insights of underrepresented stakeholders to shape the questions researchers ask and promote future uptake of new discoveries by building trust with key partners. Through the intentional incorporation of diverse ideas, perspectives, and backgrounds in research teams, each step in the research process is improved. Person-centered approaches could help AG2P scholars more effectively communicate complex ideas to lay audiences. Workshop participants were AG2PI members from across the globe. The workshop had 58 registrants from 15 countries.

The following pages include a content overview of what was presented during the workshop, as well as a report of the ideas developed during the guided discussion. If you have questions or would like additional information about the contents of this report, the workshop, or about promoting diversity and inclusivity in your teams, please contact the principal investigators of this study, Dr. Cassandra Dorius at [cdorius@iastate.edu](mailto:cdorius@iastate.edu), or Dr. Shawn Dorius at [sdorius@iastate.edu](mailto:sdorius@iastate.edu).

  
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<sup>1</sup> PSC is an Iowa State University research team providing science consulting for the public good.

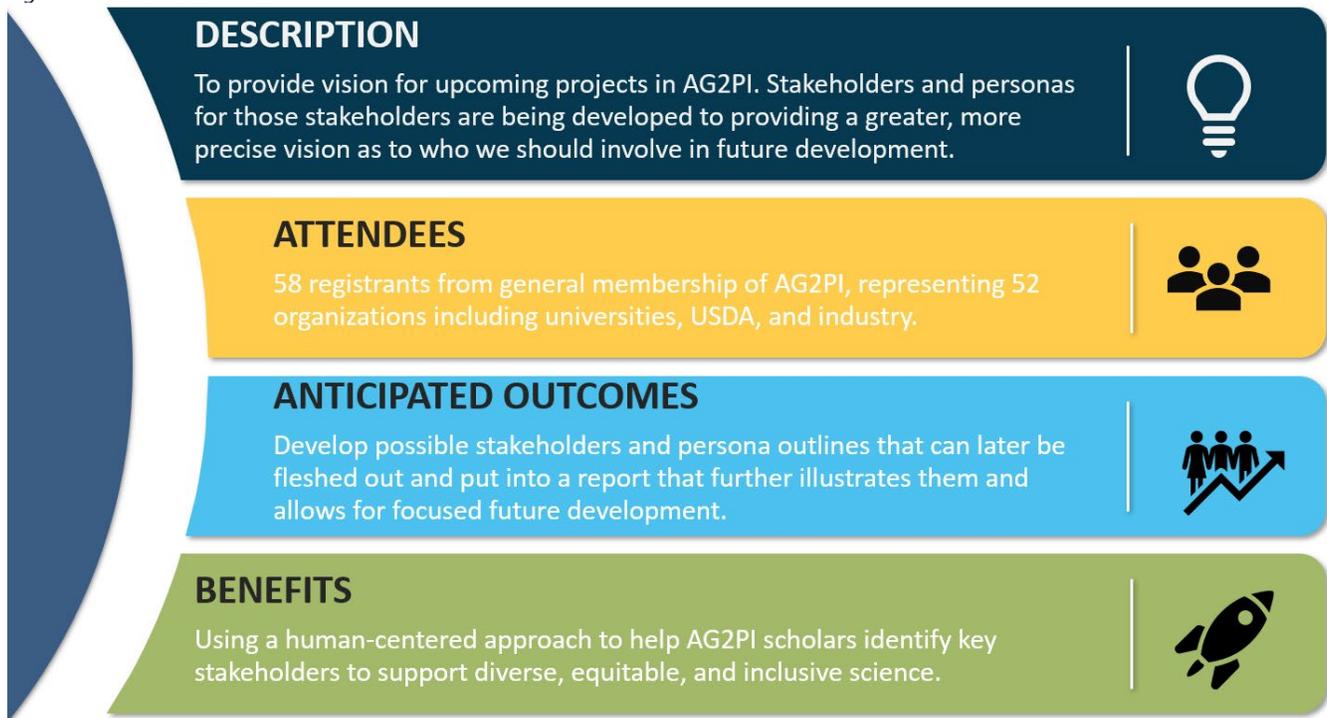
<sup>2</sup> <https://www.ag2pi.org/workshops-and-activities/community-workshop-2021-11-18/>

<sup>3</sup> [https://www.youtube.com/watch?v=nDuePnV\\_IEs](https://www.youtube.com/watch?v=nDuePnV_IEs)

# Content Overview

## Introduction

Figure 1: Content Overview



PSC welcomed participants and introduced them to the overarching goals of the workshop: how to find new and better ways to solve problems through promoting a more inclusive, diverse, and human-centered approach to research. PSC shared some social science thinking and noted there is mounting evidence that the idea of increasing diversity & inclusivity is beneficial for science and pushes research agendas forward more efficiently, effectively, and most importantly, in new directions.

Next, PSC provided an overview of the planned activities for the day, in which participants would be guided through six creative thinking phases to introduce concepts of diversity and inclusion integration into their research through stakeholder mapping and persona development.

**Phase 1 Provide Scope:** Before starting, workshop participants were presented a map that showed the countries that registrants for the workshop were located in around the world. This provided insight into the diversity that was already present geographically, and PSC shared the hope that diverse ideas and experiences continue within the workshop to create an environment in which input was encouraged.

**Phase 2 Introducing ELSI/ELSEE:** PSC provided an ELSEE framework to ground participants in the same theoretical paradigm for the day's activities. This prepared participants to deeply consider stakeholders in their brainstorming, and encouraged participants to consider groups beyond those they may have thought of previously. ELSEE stands for:

1. Ethical
2. Legal
3. Social
4. Environmental & Economic

**Phase 3 Introducing Stakeholder Mapping:** This session provided clear visualizations that created stakeholder categories, allowing participants to think further about who their stakeholders are and where their stakeholders may be placed between the interaction of influential and interested dynamics.

**Phase 4 Brainstorming Session:** An interactive session in which the participants created a list of their stakeholders and placed them within the quadrants labelled critical, important, active supporters, or informed.

**Phase 5 Persona Development:** This section of the presentation provided participants insight into determining end users, those people for whom the science is really for.

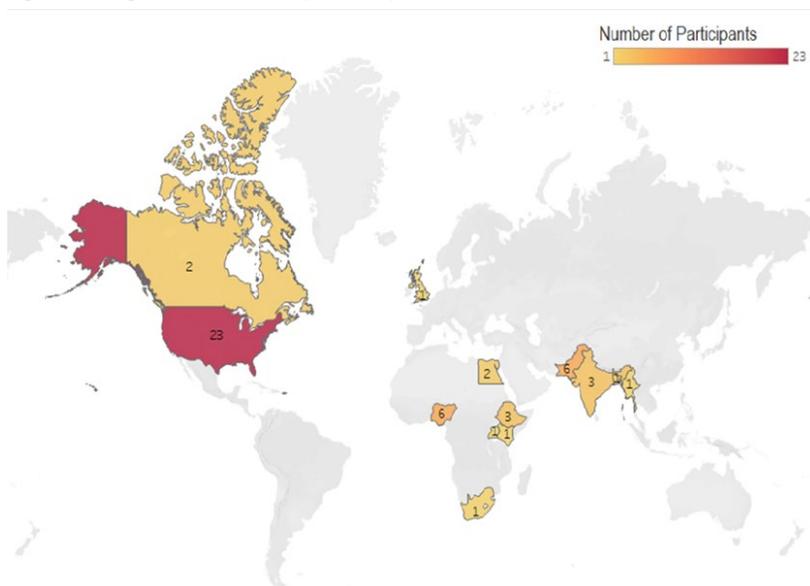
- **Subphase 6: Persona Selection:** This interactive experience had participants select images from a set of silhouettes that they believed best represented the end users of the AG2PI project, first as individuals and then results were compiled to determine which image were chosen at the highest rates.
- **Subphase 7: Persona Discussion:** The goal of this session was to better understand the personas that were chosen, as well as have the group make any changes necessary to rankings to better capture the full perspective of participants ideas of the end users.

**Results of process:** By the end of this workshop participants had defined a stakeholder map that encouraged thinking and collaboration in targeted ways, as well as created several nascent end-user personas that will be the subjects of focused development of the project in the later workshop.

**What does this report include?** The rest of this report will dive into the activities and outputs from the workshop.

## Phase 1. Provide Scope

Figure 2: Registered Workshop Participant's Locations Around the World



To begin setting the tone for the workshop, PSC reviewed the locations world-wide of the registrants, Figure 2, and noted that the participants already work and think often in terms of international collaborations.

Those are some of the most challenging collaborations to maintain because of differences in time and resources as well as the challenges on the ground in the various places participants work.

PSC challenged participants to embrace a welcoming mindset during the workshop, to be open to new ideas, think about

different ways of doing the work they undertake, and to enjoy the team-building during the following interactive, creative, and fun sessions.

## Phase 2. Defining ELSI/ELSEE

PSC introduced the international concept of ELSI, an acronym that refers to the ethical, legal, and social implications of research. In the USA, ELSI has been expanded to include economic and environmental implications

and is referred to as ELSEE. For consistency with their work location, PSC presenters used ELSEE throughout the workshop.

Often because of trying to solve problems, people assume only good things will come from innovation. But the challenge we find is that is not always the case. Thinking about desired innovation through the lens of ELSEE dimensions, researchers may have a greater chance to anticipate problems that could arise down the road, perhaps of unintended consequences that may have ethical implications, or of ecological implications – examples could include performing research that leads to being too intensive on the input side or not resilient enough on the output side. Keeping the implications of the research in mind as teams are crafted and work is designed will lead to better work. Additionally, the work will have greater impact and be implemented more successfully to the benefit of society. ELSEE dimensions are:

- **Ethical** - How can we be sure that this project will produce ethical results through ethical means?
- **Legal** - What are the future and current legal concerns of this project?
- **Social Implications** - How will people and communities be affected by this project?
- **Ecological & Economic** – Should any ecological or economic impacts be anticipated for this project?

### Intentional Incorporation of ELSEE

PSC proposed a process of intentionally incorporating the ethical, the legal, and the social dimensions into research. By using the approaches outlined in the workshop, participants learned how to incorporate diverse ideas, perspectives, and backgrounds from the beginning of research projects. When this process is set up early in the research process each step that follows is improved.

Through building a more inclusive and diverse approach that teams may invite underrepresented stakeholders to help shape the scientific approach and goals, and determine which questions to ask, rather than only being the recipients of scientific discovery. This will lead to not just a diversity of people, but to a diversity of ideas and perspectives, all at the front end of research, which can then be leveraged and built on through the lifetime of the research project.

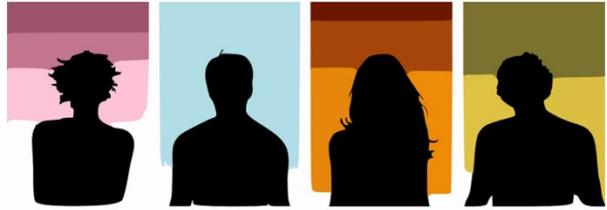
PSC then introduced participants to Stakeholder Mapping & Developing Personas. *Special Note: Anticipating an international audience from the registrant list, PSC chose to use the term “profiles” instead of “personas” throughout the workshop itself to make it easier for participants, however, for reporting we return to the more formal term of persona development.*

## Stakeholder Mapping & Developing Personas Overview

Who does AG2PI communicate with and who is missing?

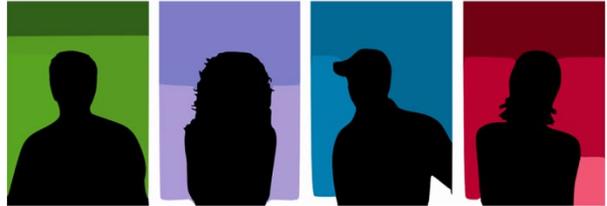
### Stakeholders

It was important to clearly define stakeholders to gain a fuller understanding of the many collaborators, partners, funders, and other people workshop participants work with, and with whom they communicate.



### Personas

Personas are made up people that represent real potential users. PSC utilized this approach to gain insight from the experiences shared by members of AG2PI during the workshop.



### Workshop Goals

By the end of the workshop, AG2PI participants learned to identify key users and understand how to answer the following questions:

- Who are our current stakeholders?
- Who should we include as stakeholders?
- What will they do with the information?

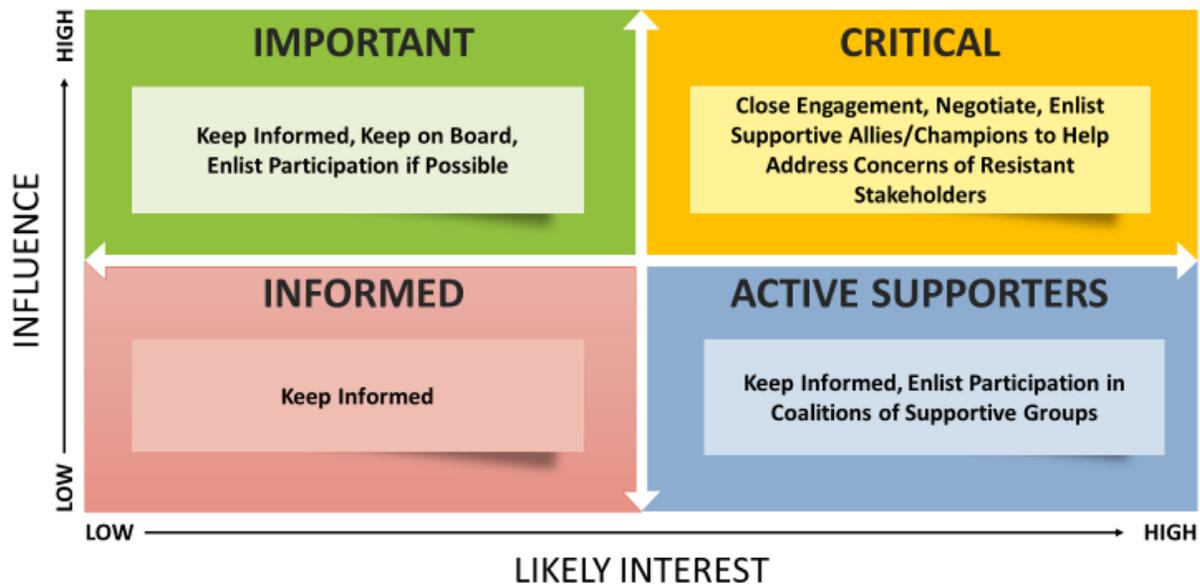
PSC guided participants to consider person-centered approaches to help AG2PI humanize and empathize with the public and funders so they can more effectively communicate complex science to lay audiences. This will also help when making outreach, design, and research decisions to answer user identified needs in an approachable and engaging way.

During the workshop, participants engaged in several facilitated brainstorming processes. In the first, a stakeholder mapping activity, participants answered questions, such as which stakeholders were influential and which were interested in furthering AG2PI's goals? How were these stakeholders similar and how were they different? Who should be included in discussions? Stakeholder mapping helped clarify and distinguish between different levels of stakeholders. The second and third activities focused on end-user personas. In the second activity PSC presented a customized tool for AG2PI to develop idealized users to build a human-centered approach to increase diversity and inclusivity. In the third activity, participants created details inspired by the images selected earlier to begin to build personas that represent real stakeholders.

### Phase 3. Stakeholder Mapping Introduction

In this phase, participants were introduced to different sets of stakeholders through the stakeholder mapping technique. This method is an attempt to further breakdown the idea of a “stakeholder.” By offering separate categories of stakeholders that can apply to different sets of people, the AG2PI workshop was able to gain a larger scope of the people who could be affected by or interested in AG2PI projects.

Figure 3: Stakeholder Map



The explanatory map shown in Figure 3, was used as a visual to describe the stakeholder mapping concept. It is useful to think along two dimensions as illustrated above for a stakeholder map. Likely influence flows along the vertical axis from low influence to high. Likely interest runs horizontally from low to high. Each quadrant represents stakeholders along these continuums and helped participants to identify who goes where.

Keep in mind that inviting the full range of stakeholders to every discussion, every step along the way would be unrealistic and unnecessary. The mapping exercise aimed to help participants understand the perspectives, influence, and expectations of their diverse stakeholders. A critical first step to understanding was to identify who the stakeholders are and where they belong on the quadrants.

PSC next shared the descriptors associated with each quadrant. Powerful stakeholders with strong interests were labeled critical in the upper right quadrant. Critical stakeholders demand the most attention, these are people who are likely to advocate for AG2PI and should be engaged early and encouraged to help address the concerns of other groups that may be influential, but less supportive of AG2PI goals.

Stakeholders help ensure that the highest priority questions are addressed using AG2PI data and that the interpretation of findings are relevant to real-world needs and are well informed. Successful implementation also depends on the cooperation of stakeholders who own or hold data, ideas, communication skills, provide access to funding and other resources, and AG2PI should know who those key stakeholders are, where they stand in the interest/influence interaction, and how they can be persuaded ultimately to cooperate with and advocate for AG2PI.

Participants began building the stakeholder map by connecting to an online interactive tool called Mentimeter.

During this phase, the participants were given time to consider each of the four stakeholder sets in four separate sessions.

The stakeholder maps were broken down, and the participants were able to submit answers electronically that could be viewed by the rest of the group. By doing so, the participants could brainstorm off of each other's ideas even with the limitations presented by a virtual format. The results from the activity follow:



## Stakeholder Mapping: Menti

### CONNECT

Go to <http://public-science.org/ag2pi/>  
Select the MENTI option

## Phase 4. Stakeholder Mapping Brainstorming

### Critical Stakeholders

PSC walked participants through *Critical Stakeholders*. These are typically thought of as people who are both highly interested and highly influential within your project space. They may be the people with whom you negotiate, they also negotiate on your behalf, and they certainly enlist the support of allies. They also act as a champion who addresses concerns of people who are more resistant to your work, and help communicate widely on your behalf.

These are the highly interested and highly influential stakeholders identified by participants:

- Other researchers
- Graduate students in plant science
- Policymakers
- Funders
- Farmers
- Commodity groups
- Seed companies, other researchers
- Farmer groups
- Boots on the ground rather than books on the shelf
- Industry collaborators
- administrators
- University administration
- My mom
- DoE program managers
- Young Agricultural Entrepreneur
- Farmers
- Public

## Important Stakeholders

PSC facilitated further responses through each quadrant, next with IMPORTANT stakeholders. These people are highly influential but are not as interested in the projects as the critical stakeholders.

These are the stakeholders who are highly influential, but have low interest, identified by participants:

- Administrators
- Policy makers
- Farmers
- Research Station Director
- Research support staff
- Deans
- The media
- Donors
- Lobbyists
- Government Ministers
- Undergraduate students
- Motivation
- Politicians - They want the initiative to make them look good, even if don't believe or not passionate about the cause
- Computer scientists
- Administrators
- Socially Disadvantaged Groups
- Socially disadvantaged groups

## Active Supporters

These are the people who would go to the mat for AG2PI. They are readily available to help, they show up early, will work late, and will tell everyone about you. They have high interest and high commitment to what you are doing, but are not highly influential as individuals or as a group.

These are the stakeholders who have little influence, but high interest, that the participants identified:

- Social interest groups
- Farmer co-ops & community groups
- community groups
- Postdocs
- Research technicians
- Advocacy groups
- Research Farm Managers
- Data scientists
- Graduate students
- University colleagues
- Collaborators from outside the discipline
- Faculty researchers
- Our family members

## Informed Stakeholders

The final group discussed were the informed stakeholders. Those are stakeholders with low interest, low influence, but still require communication for the successful implementation of AG2PI's research agenda.

These are the stakeholders who have little influence or interest that the participants identified:

- Public
- The media
- General public
- University media
- Students!
- Farmer's market
- Family and Friends
- University finance management
- Socially disadvantaged groups

PSC asked questions to encourage reflections on the stakeholder map. For each quadrant - Who are they? How do we keep them informed? How do we communicate with them in a different way depending on if they are from a low interest, low influence quadrant compared to those stakeholders from the critical quadrant who will expect and need more details? This activity is especially beneficial to explore at the beginning of a research project to help guide communication decisions, as those identified stakeholders should be communicated with throughout your research life-cycle.

In sum, the goal is to share information with the right stakeholders at the right time, and by doing so build trust. One hinderance to technology, product, or service adoption in the world is a lack of trust. People will not adopt new ideas if there is no basic level of trust. A stakeholder map is a great tool to intentionally plan the best level of communication to share information at an appropriate level, and it will help project leadership build trust with many diverse stakeholder groups.

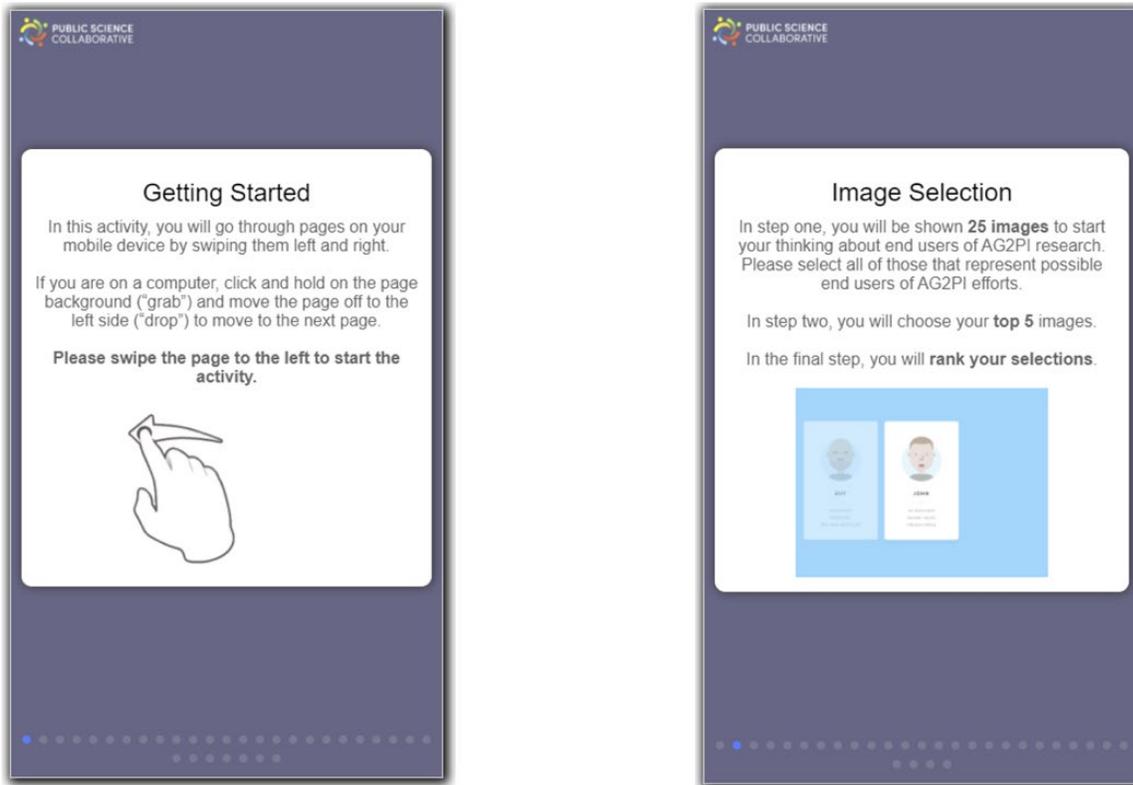
## Phase 5. Persona Development

### Public Science Collaborative Persona Development Tool

The goal of this phase, along with the two activities, was to promote discussion that would allow for the creation of several personas to utilize in later research and discussion opportunities. These personas were meant to represent end-users for AG2PI, keeping human-centered approaches front and center to align expectations throughout development, and to also provide a clear end-goal. In the second activity, participants were introduced to the *Public Science Collaborative Persona Development Tool*, an interactive experience custom designed to inspire association through abstraction to start building ideal end user types.

To begin, participants were instructed to start thinking about who the typical users are of the service or product of their research. Because participants were from all over the world, tackling a variety of G2P issues and ideas in big ways, participants were assured that they would each likely envision different sorts of end-users. That was to be expected and is reflective of the importance of identifying early who the people are that AG2PI research touches.

Figure 4: Public Science Collaborative Persona Development Tool – Image Selection

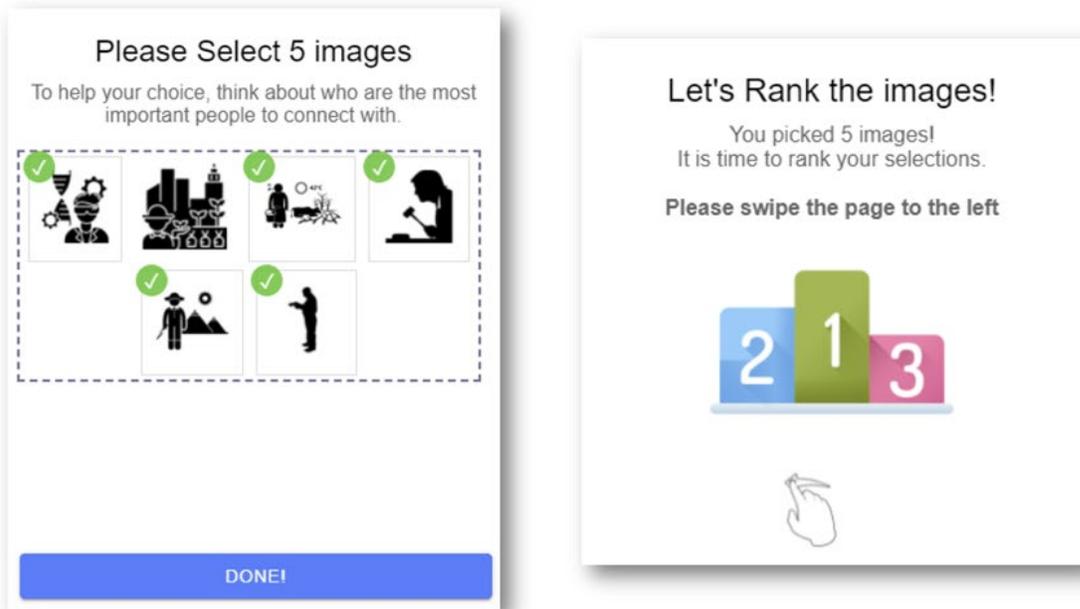


Participants then connected to the online tool from desktop or mobile interfaces as shown in Figure 4. In step one, they were shown 25 images to inspire their creative association. Silhouettes, rather than actual photos were used in the tool so it is not an actual person viewed, but an image that spurs participants to think of an actual person. This is intentional to inspire divergent thought processes as so many parts of what they “see” is in their mind, their experience. This technique allowed multiple perspectives to be interpreted from the same image – in much the way that a line drawn upon a page may be the beginning of a drawing of a table for one person, and the line of the horizon for another. Experience and interpretation are vital components of this stage.

Participants were instructed to individually review the set of silhouettes whilst thinking about the end users of their research, products, or tools, and to select the images that reminded them of the people for whom they are really doing their research. Participants could select as many images as they wanted for the first pass. Participants were reminded that as they viewed the images, to think in the broadest terms of who are they doing research for, and why it needed?

Once all 25 images had been reviewed, the tool prompted the participant to review their selected images and start to narrow down from all their saved silhouettes to their top five end-users, as shown in Figure 5. This step required a cognitive process change from the divergent ideas spurring selection during the first pass to a different way of thinking through the end users they were envisioning, narrowing similarities or overlapping priorities of their selections. The last individual step in this process, shown in Figure 6, was to take the five images that the participant had left and then rank them in order of importance.

Figure 5: Public Science Collaborative Persona Development Tool – Narrowing and Ranking Images



The *Public Science Collaborative Persona Development Tool* then took all the individual rankings and compiled them to share back to the group the most often selected images. At that point the images were no longer representative of an individual's work but those that were deemed most likely to utilize the research, services, or products of AG2PI as a full team.

## Discussion

PSC then led a discussion asking people to describe what the personas represented to them as they went through the selection process and how they narrowed down their choices. This was a chance to review the top selected images together and share participant's thinking regarding the selection.

Inclusion and diversity concepts were already being built within the team as one image may have inspired one participant to think of an end-user that another participant, from the same image, had a totally different idea of what it meant and who it represented.

PSC facilitated by asking questions like: "Who were you thinking of when you selected this image?" and "Why did you select them and what is the motivation there?". The discussion also gave participants a chance to champion a particular image that had not made the groups' first cut. PSC prompted additional divergent thinking by asking "Are there any key people/partners missing from our rankings?"

Some of the more compelling responses that illustrated the breadth of the discussion and reflected on the keen engagement of the participants are included as examples:

*"For me I would move up #9 – the group of collaborators and diverse team members"*

*"To globalization of data, ideas"*

*"Can we add the suits (admins/funders) or the person at the desk? (students)"*

Responses to this invigorated the participants, with a participant adding that suits could also be "policy makers". Note that the "Suits" option was upvoted to become one of the top five choices in final ranking.

Examples of how difficult it was to think outside the box were present too, for example, it was difficult for participants to visualize end users who were not scientists like themselves:

*"Geneticist but also just a general scientist"*

*[image 3] "Biochemist or microbiologist"*

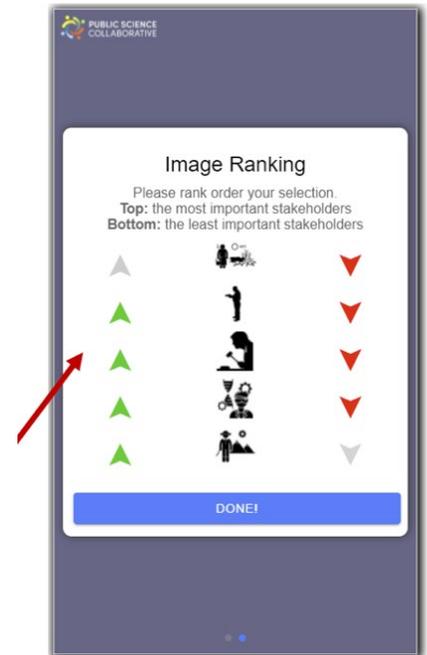
*[image 4] "Data scientist or other scientist"*

*"There must be mostly crop scientists here because [image] 15 appears to be a livestock farmer"*

The noted difficulties were not unexpected and ways to build on the success of the workshop and continue to encourage wider thinking approaches and practices are included in the recommendations section of this report.

Ranking decisions were reordered and strengthened through the rigorous discussion as participants shared their thought processes. To close activity two, PSC reminded participants that following this kind of approach was one

Figure 6: Public Science Collaborative Persona Development Tool – Ranking



way to ensure they have a process that actually works out better for their research. When they know their targeted end users, participants will be better able to communicate the effectiveness of their research when they apply for funding, or be more effective when connecting with different groups to share research findings at an appropriate level. Inclusive and diverse approaches are not just for the general social good. They are actually an important process for directing impactful research, helping translation of technologies, and having end users understand and support the research.

Following the full group's discussion and prioritizing of key personas to develop, the participants were assigned to one of two breakout rooms to delve in deeper to creatively identify further characteristics, motivations, and demographics of the selected images.

## Human Centered Design

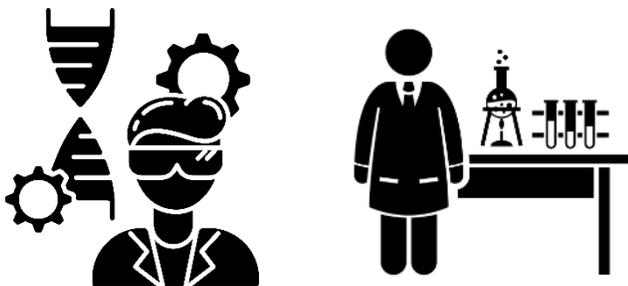
Starting with the images of key users of AG2PI research, products, and services and develop personas – or ideal types – to help better understand and support the people who benefit from the AG2PI network, PSC facilitators worked with participants to develop answers that helped to develop a full identity for the individual personas. This was a key step in understanding who are the beneficiaries of the work in G2P research. Participants followed prompts that included the following:

- **Background Summary** - Who is this person? What is their Job Title; Job Responsibilities; Age; Education Level; Industry; Organization Size?
- **Motivation** – What are their goals and objectives?
- **Pain Points** - What are their biggest challenges? What are their pain points? What are the obstacles to success?
- **Why Do They Need AG2PI?** What will they use the information for? How do they benefit?

These questions helped participants think about how to build trust, how to communicate findings to their various stakeholder audiences in a way that would really work for the persona, not just the research team. A well-honed research team could use this approach to help them figure out how to be more thoughtful about their work, and even how to amplify their work for other audiences. Incorporating diversity and inclusion early in the process helps to build trust and strengthen teams. Diverse teams tend to select more complicated problems to solve and are able to achieve better results than less diverse teams.

Brainstorming ideas were recorded in Google Sheets. The following pages show the summary of the results for the top three image sets.

## Image Set 1



These are the persona attributes identified by participants for these images:

### Background Summary: Who is this person?

- Research faculty
- PHD level
- Other types of degrees -- Data Science Associate, Field work
- Project Leadership
- Orgs - government academics, not private industry, maybe private too, Universities, Focusing on Public Research
- Postdocs
- Biology, genetics, chem, bio chem, data scientist, animal and plant science
- Som the Scientist
- Very smart and have a PhD
- Professional responsibilities-
- Societal responsibilities-
- Currently searching for funding
- To produce true investigations, provide ethical outcomes

### Goals & Objectives: What are their biggest motivations?

- Paycheck
- Prospect of discovery
- Reputation
- Production and profitability of animals
- Making plants and animals resilient - esp in a changing climate, home environments and around the world
- Passion to do the science
- Do their job
- Interested in future and future trends-
- Paid
- Fame
- Solve the world's problems
- Exciting discoveries
- Competing science- PhD, Thesis, papers
- Not satisfied by the status quo
- Patents

### Pain Points: What are their biggest challenges?

- Money
- Time
- Staffing
- Collaboration across disciplines - communicating with people from different backgrounds
- Dashboards and websites to access information is a challenge
- Navigating funding pressures when producing ethical science
- Finding funding to do the work- keep teams in place
- Actually solving the world's problems
- publications
- Remain competitive

Why do they need AG2PI? What will they use the information for? How do they benefit?

- Get good clues about information about different breeds and better information and practices for future farming
- Improve breeds for future farming
- Briefs - summaries for policy makers or funders
- Build on our work
- Collaboration- amplify our efforts
- Find collaborators
- Community building
- AG2PI seed grants!
- Learn from each other

## Image Set 2



These are the persona attributes identified by participants for this image:

**Background Summary: Who is this person?**

- Little to no science education
- In person experience
- "Seeing is believing"

**Goals & Objectives: What are their biggest motivations?**

- Profit
- Sustainability

**Pain Points: What are their biggest challenges?**

- Climate and climate changing
- Input costs
- Labor

Why do they need AG2PI? What will they use the information for? How do they benefit?

- Put them in touch with researchers and make connections they were unable to make before
- Convey better information to them from researchers
- Training staff
- See how stakeholder groups - their dollars - are going to good use.

## Image Set 3

These are the persona attributes identified by participants for this image:



### Background Summary: Who is this person?

- Directors
- State and fed gov.
- Fed agencies / program officers
- May have little to no scientific background
- Programs people with no background in Ag.
- May be nervous about data "data shy"
- Need good graphics!
- Funders and decision makers
- Lobbyist
- Probably don't have a STEM degree
- In Washington, but employed by commodities/industry/corporations
- support future challenges like climate change
- Give funds for projects- develop new varieties or products
- Immigration issues- where is the labor?

### Goals & Objectives: What are their biggest motivations?

- Profitability
- Big picture - competition for USA to be leading
- Working for interest of govt. If govt no interest = no funding
- Elections!
- Influence policy
- Money for their employer!

### Pain Points: What are their biggest challenges?

- Administrations change and their priorities change too!
- Elections
- Need ideas to fund that move forward their company/interest group
- Drive cost down
- Look good (genomics)- get to market faster, sell more, make more money
- Public support
- Differences in their and your interests

### Why do they need AG2PI? What will they use the information for? How do they benefit?

- Reliable and predictable crops! R&P harvests
- Costs stable
- Reliable information on state of the art.
- Need good graphics!
- Policy
- Appropriations

# Key Takeaways

## ELSEE

ELSEE provides a framework to ensure that any specific research agendas (ontologies, predictive analytics, AI robotics) are better served and do fewer harms if ELSEE is considered at the beginning of a research endeavor.

## STAKEHOLDER MAPPING

Participants learned to differentiate between critical, important, active supporters, and informed stakeholders to help focus communications and interactions effectively. Mapping at the beginning of a project allows a team to build trust through repeated and directed interactions with the right stakeholders at the right time.

## PERSONA DEVELOPMENT: IMAGES

From finding inspiration through image selection through ranking images in order to prioritize inclusivity and diversity in AG2PI, PSC used images to connect creatively and spark some great insight and conversation.

## PERSONA DEVELOPMENT: BREAKOUT GROUPS

Participants began to create idealized but highly personalized individuals as they learned to empathize and envision the future, and the impact of their research work at the individual level.

## Discussion

- Participants found it easiest to focus on scientist-type people, it proved extremely hard to think beyond the scientist - examples in the discussion of persona tool, there was much chat about whether the scientist-looking silhouettes were biochemists or microbiologists, geneticists or general scientists, or data scientists. Although many of the participants work on science that will be utilized by farmers, envisioning farmers at the individual level to understand their goals, challenges, and needs was a big ask and only one of the two break out rooms even attempted it.
- International approach – not everyone defines diversity and inclusivity the same way, and ethical considerations vary across cultures.
- Low attendance relative to registrants
- Another challenge for participants was how hard it was to conceptualize down to the individual level, thinking of the end users as actual single humans instead of thinking of the scientific merits to the global good at a general level. It was inspiring to see the struggle people had with this as we know that once scientists start thinking of who they are doing this for, how they are helping the individual, it allows the action-space to ask for opinions and early interventions by end users.

## Implications & Recommendations

- Get them out in the field – meet with the people, make connections outside of the lab, more time in the field helps to see the ecological
- Think beyond scientists – need to work with other groups to expand awareness in future trainings, for example, in the next PSC workshop, the PSC team will use the scientist persona for the example that we explain activities with, thereby gently pushing participants out of their comfort zone to expand their experience.
- Is there a path to increasing attendance to get closer to number of registrants?

- Just like when you have an agenda for a meeting, project meetings could include something like “who are we doing this for?”, who are we helping when we share our innovations? Is it what the end users would ask for? Is it what they need? Orienting the scientists to those questions frequently will help increase the likelihood of asking for information and consideration of others, building diversity and inclusivity into the processes of scientific exploration and achievement.



## Next Workshop February 2022

ELSI workshop with AG2PI researchers to understand knowledge, beliefs and practices about the Ethical, Legal, Social Implications, Ecological, & Economic aspects of data-driven AG2PI activities.

This helps us to understand “why” AG2PI research occurs by eliciting attitudes about ELSI collaboration, research team composition, and data sharing.

PSC invited participants to join the next workshop in the series, slated for February 2022

## Participant List

### AG2PI – 58 registrants from 15 countries

- Nida Javaid, *Pakistan*
- John Banza Mukalay, *DR Congo*
- Emery Kasongo Lenge Mukonzo, *DR Congo*
- Jeffrey Boutain, *USA*
- Alyce Lee, *Slovenia*
- Tavsief Ahmad, *USA*
- Kate Guill, *USA*
- Olufunke Oluwole, *Nigeria*
- Mohamed Alrajhi, *Egypt*
- Ashmit Kumar, *USA*
- Mudssar Ali, *Pakistan*
- Dinakaran Elango, *USA*
- Samuel Seaver, *USA*
- Fortune Ogo-ndah Awala, *Nigeria*
- Muhammad Tariq Sultan, *Pakistan*
- Mohamud Mohamed Isse, *Kenya*
- Sarah Adjei-Fremah, *USA*
- Nadeem Iqbal, *Pakistan*
- Monica Huerta, *USA*
- Iqra Ghafoor, *Pakistan*
- Simon Lackey, *Canada*
- Tsegaye Demsis Lemma, *Ethiopia*
- Tassawar Hussain, *Pakistan*
- Solomon Shibeshi, *Ethiopia*
- Tsegaye Muche, *Ethiopia*
- Olubunmi Duduyemi, *Nigeria*
- MD RASEL UZZAMAN, *USA*
- Godfrey Sseremba, *Uganda*
- Recep Yavuz, *USA*
- Keshav Singh, *Canada*
- Chaw Su, *Myanmar*
- Olajumoke Akinola, *Nigeria*

- Mulumebet Worku, *USA*
- Jean-Luc Jannink, *USA*
- Muhammad Khan, *Pakistan*
- Guiping Hu, *USA*
- Yeter Seda Karakoc, *USA*
- Jennifer Lachowiec, *USA*
- Gregory Goins, *USA*
- Abdelaziz Belal, *Egypt*
- Adil Altaf, *USA*
- Johnny Li, *USA*
- Thiago Marconi, *USA*
- Shouyi Wang, *USA*
- Pooja Jha, *India*
- Ifeanyi Ahamba, *Nigeria*
- Ritu Sharaya, *India*
- Punam Kundu, *India*
- Zama Mbulawa, *South Africa*
- Somashekhar Punnuri, *USA*
- Cora Varas-Nelson, *USA*
- Oluwatosin Adebajo, *Nigeria*
- Natalie Henkhaus, *USA*
- Md. Shamim Aktar, *Bangladesh*
- John Rupe, *USA*
- Christopher Sacchetti, *USA*
- Paul Richter, *USA*
- Stephanie Race, *United Kingdom*

### PSC

- Cass Dorius
- Shawn Dorius
- Rachael Voas
- Kelsey Van Selous
- Masoud Nosrati