Post-Training, Exit Interview Questions
Advanced Soil Health Training: 2016-2017
18 of 22 graduates interviewed in August 2017

1. *How are you tied to the ag industry?* Producers, corn/soy/wheat
   - Producer: corn/soy/wheat/kernza/permaculture (nut trees)
   - Ag Professional: IL Stewardship Alliance
   - Producers, cattle/organic
   - Ag Retailer for Wilbur-Ellis
   - Independent crop consultant
   - Extension agent
   - Producers, ag professional
   - Producer corn/soybean/wheat, board member of IADD, SWCD
   - Producer (corn/soy/hay/cattle) & Ag professional-soil health partnership
   - SWCD resource conservationist
   - Farmer, SWCD Board Chair
   - Ag professional, retailer for ProHarvest Seeds,
   - Producer: Corn/Soy/Wheat
   - Ag Professional: extension research, ag consultant now doing research
   - Producer: Corn/Soy/Alfalfa/Pasture/Goats and Ag Professional: retired Extension Agent, now independent crop consultant
   - CCA, Agronomy Sales for CHS, Inc

2. *Why did you sign up for this training*?
   - Death of extension moved research to chem/seed companies
   - Seeking a community: felt isolated from other farmers, protectionism (2)
   - Suggested by steering committee member (6)
   - Work in soil, want to broaden knowledge base (3)
   - As a farmer, saw this as a way to do recon---valuable for himself!
   - For my job---networking to producers
   - the subject matter – this is a whole new way to farm. "It's boring to farm the same way every day."
   - ProHarvest's new mission is "Cover365"
   - "retailers don't give a damn about soil microbiology" It's a sales game. If a higher up were to say "20% of sales have to come from covers…" they'd do it.
   - "honored" to be a part of it

3. *What was lacking in your traditional education avenues that lead you to seek this?*
   - The truth
   - Felt being pulled by big ag
   - Ebb and flow of farmers profits while big ag profits kept rising
   - Wanted to hear the old way of providing nutrients to the crop
   - A diversified group of trainees was lacking.
   - Typical research was paid for by big ag. (referenced data showing since the use of synthetic fertilizers in the morrow plots at U of I, the ability for the soil to build OM has decreased). Big ag ignores this.
   - They've hit physical/chemical properties of soil, the biochemistry intrigues me
   - We know so little about the biology
   - Any opportunity to learn
   - The soil is our resource base!
   - Current education was "Basic"
   - Felt like current education was just saying, "You should do x, y, and z." never WHY
   - Needs to know the WHY even more because he's not a farmer

- Opportunity to learn more about specifics
- To be surrounded by like-minded individuals---biggest draw
- There's a gap in IL in sharing the value of cover crops + soil health. As a producer, wanted to quantify value coming from these practices.
- NOTHING coming from university, low quality from NREC
- Not much other CURRICULUM out there
- all training just gets at the outskirts – really need more detail
- has no formal ag training (engineering degree), also this isn't taught in mainstream ag (but he sees mainstream trying to catch up e.g. the marketing of "biologicals")
- This didn't just focus on cover crops, like other trainings.
- This training discussed the soil SYSTEM
- Background is NOT soils, wanted to gain perspective for himself and customers
- Forages/varieties are improving
- Not too much deep discussion; this was it
- biology
- just wasn't available. Part of job is to research— needs to answer these questions for clients

4. *How have you changed your operation? (If applicable)*

From producers:

- Added wheat
- Added radish to wheat
- Killed rye with paraquot, not roundup
- Did nitrogen pulse test plot
- Questioning fungicide/insecticide/neonics=would rather use money towards cover crops/etc
- Questioning "bushels" as mark of success
- Always seemed to be changing, but may have sped up changes with the help of this class
- Thinking how can I tap into the biological cycles to help me, to work with instead of against
- With this knowledge, maybe long term no-tillers can transition into organic quickly
- It's still an open discussion
- Looking at his system differently—now considering how to ID changes in soil
- Realized side benefits of covers, makes bad years of cover crop stand ok to deal with/stick with it
- YES. Gone away from oats/radish because it left Jan/Feb/March without a living root.
- Moved to spring + winter oats + rape + cereal rye.
- More corn, taking wheat out because he sees benefit of corn for soil health
- Haven't really changed much, this helped to talk to other farmers farming like he is. He is adding bio-strip till.
- More MIXES of cover crops
- Scouting to see what the response of the mix was
- Thinking of better questions to ponder
- Plans to use more clover; varieties are improving cold tolerance just in last couple yrs

From retailers, consultants:

- As a retailer working with producers, he now pushes Shalamar's data a lot more

From educators, researchers:

- Has put on basic education on cover crops (news releases, etc)
- Added soil quality/health to his soils section for the master gardeners
- McCully Hentag Research Farm=Adding cover crops this fall
- Has Wendy Taheri and Donna Brandt coming to two of his workshops later this year.
- Thinking of better research parameters, especially on his Southern Illinois NREC projects
- Continuing to use covers

5. H*ow you changed how you talk to others about soil health?*
   - Let farmers with an interest come seek us out
   - Phrase it as, "you're not farming wrong, but here's another way."
   - Look at it as just trying to support one another as farmers
   - If we're the first ones doing something like this, we have a responsibility to do it well. We applied the knowledge from the class, and can now point other farmers to the networks they learned about through the training
   - No longer brings in agency reps to speak, brings in farmers and FACILITATES conversation
   - More on the biologicals
   - Trying to tie research together
   - For credibility to others, tries things on his own acres
   - Uses IDEA Farm Network to point farmers to for great conversations
   - Value in getting farmer input into policy: push statewide tech committee to education field staff
   - Still don't feel comfortable enough with the topics to talk as an expert
   - History: We've dropped what we did know about biology when synthetic fertilizers came on
   - Allelopathic weed control, nitrogen fixing cover crops
   - Not a whole lot, but now more in tune to the details of it now. Always talked about soil microbiology, but now can more fully understand/explain.
   - Going thru university ag, you're taught monoculture. This has been a CHANGE IN THINKING.
   - Whole different perspective, more so aligning with ecology classes
   - Now he pushes the system
   - He works on proving how it won't hurt them to try it
   - Before, presentations were just on cover crops and their benefits. Now the presentations are on the PRINCIPLES OF SOIL HEALTH. Then after the WHY, talk about the how (covers/etc)
   - Talking about soil quality---to not scare people off with "soil health"
   - Still not trying to over-emphasize benefits
   - This training proved I knew little.
   - Can now speak about the PRINCIPLES behind soil health.
   - Focus on practical side
   - Less on economic promise
   - Focus on long term
   - NO short term promises
   - haven't changed – still talking about soil health principles
   - notes a philosophy change, he thinks maybe "soil health" is a boring concept. More appealing to talk about the benefit of reducing inputs for profit (not yield increases)
   - This training gave him more ammunition to sell.
   - Explained the underlying processes
   - Used to just focus on agronomy, hadn't talked about soil health at all before
   - Was getting asked about value of a CCS, now can do better job of explaining structural changes of soil and system
   - Changed how he approaches soil health, able to add in the tenets even if customer doesn't ask specifically for it
   - knows it's more culture than science, admits he probably still offends people
   - the training made it easier for him to explain the processes behind the changes. Made him feel more comfortable, to have natural conversations.

6. *What can we do to improve next time?*
   - Keep the diversity of sites, trainees
   - Need farmer in front, not agency folk
   - Idea: reunion meeting 1 time a year, at a farm that's been using this new system for 3-5 years. Keep learning!
   - Agency folk need to take this back to the field. Did we make sure that happened?
   - Could lead each training with a pre-sent "controversial question." People could come in prepared to answer that question; it could guide discussion
   - Pre-homework could help

- Find resources to point people to afterwards for a "deeper dive"
- More data, with more years of research
- Right now we can't use short data with farmers
- Need to include in-depth discussion on how to use gov't programs to start this system with a producer. What hand-holding can a retailer do to make sure a producer doesn't fall through the NRCS cracks?
- Seemed like one way or the other, a lot of re-hashing of the same topics was done at each training. We need the level of a Wendy talk at each workshop. Keep to particular subject at hand.
- Some of the workshops missed the WHY
- Idea: reunion meeting 1 time a year, possibly in conjunction with 2nd round's kickoff meeting to show success, passion
- More scientific content at each meeting.
- Would have been beneficial to have someone from university system @ each meeting.
- Make learning outcomes explicit at each meeting. Say them.
- Timing, spacing of workshops was good
- Need more detail, more science
- Keep people focused on the agenda---stop them from having the same arguments over and over
- AVOID redundancy with public field day…or have it first so you can build from the basic public field day
- Pros: liked the format of the full day and extra local people at every workshop; 18 months was a good time frame to do 6 workshops – was easier to take off work responsibilities because it was more spread out.
- Could improve the use of soil pits – more education on how to talk to a group when you are leading a discussion from the soil pit. For the workshop – use smaller groups, get trainees in the soil pit talking about it.
- At the end of each workshop (or full training) – a 3-ring binder summary? JM has found this helpful in other trainings he's been in.
- Idea – send out a group photo with everyone identified so you can continue to associate names with faces.
- Keep the 2-day; gets people out of their comfort zone "allows new neuro pathways to develop"
- Really thinks the current program was great!
- Good that the trainees had a firm foundation already on the topics
- ---did waste some time looking at some of the equipment—wasn't new to the group
- MORE SOIL PITS! They are tremendous learning vehicles to show structure, root depths
- Good to be on a farm, adds the farmer's perspective
- Good to spend intimate time with speaker, not just their presentation (AKA staying for dinner/rest of day)
- Farming is a culture, not a practice.
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7. *If we had more time, what would you have liked to discuss?*
   - Nutrient content of food raised on healthy soils
   - Soil biome = gut biome of healthy food
   - Our role is not foundational, it's intervention
   - Thoughts on soil health testing and more discussion:
     - Comfort is growing with soil health tests as retailers, but still not with farmers
     - Q: How does the soil health test influence mgmt.? Still not apparent to him.
     - To influence people, Ken Ferry/Sauter need to buy-in
     - Q: Could soil health testing be done in "yield zones" on the field? To save some $$?
   - Again, role of nrcs programs. How to help producer through nrcs who's not familiar with it.
   - Products that damage soil health: salinization/application styles
   - Tackle big research gaps=this group of people could have unique solutions. Would have spurred ongoing activities
   - Help farmers track soil health; ISAP could be gathering this data (with correct privacy)
   - Bringing livestock back, diversifying impacts, time mgmt.,
   - intercropping
   - Wouldn't change too much. Nice to not just sit in a classroom.
   - We never addressed Northern IL

- More on 360 Monitor tool, tools in general
- How to monitor
- BRING RICK HANEY, need more evidence on tests
- Research in Iowa on higher yield in strip till corn than notill. Is strip till detrimental to biology?
- Farm Progress Style, bring in implements and show in action
- Still unknown==economics
- Economics—can't make it up
- Tired of seeing "economics" in workshop titles if no data is there
- Sees value in bringing high-end speaker and keeping them for both days
- hit the right topics: health, plants, equipment, biology
- Idea: discuss farming scenarios on 1st or 2nd workshop, then do it again in 5th or 6th workshop and see if recommendations change. (to see a knowledge gain)
- Need to hit economics topic – need the hard data (see Jim Isermann and Clay Bess?); want examples to "carry in our back pocket"
- Jerry Hatfield's Farm Journal article
- More testimonials, always good
- NRCS programs: how to help a producer through
- How to use cover crops to provide crop fertility. Where's the data?
- Is there data that shows these systems regularly have better yields in bad years?
- How can we quantify long term economic benefits?
- Save time by not looking at 'normal' equipment (strip till bar, high clearance sprayer)
- look outside the US for research. Trap crop science for natural pest suppression
- Oilseed radish effect on soybean cyst nematode-Dr. Lundgren (sp?)
- more science, more biology. Feel free to have discussions on science not yet published; find new edge stuff for each topic
- Multiple crop rotations
- This workshop got us up to industry standards
- Add more demonstrations: colored sand demo to see impact of different equipment on compaction
- Set up and do airplane seeding calculations
- Jim Hoorman's brick vs sponge demo
- Cornhead demo – harvest high?
- Relationship between covers and nematodes. Seems like big companies don't want this info funded. But we know covers suppress more than just soybean cyst nematode
- OR are some covers a HOST to certain nematodes?! Example: nematodes that prey on sugar beet/potato can be pushed back by the oilseed radish, but the DAIKON RADISH can be a host. Seed salesmen need to know these relationships!

8. *What do you perceive to be the biggest stumbling block for middle adopters to adopt a conservation cropping system?*
   - Network. Could ISAP do what Practical Farmers of Iowa does---provide a platform? Group based? Members?
   - The culture has to be assessed. We can't preach, we have to DO. Stumbling block is different for each individual/personality.
   - Retailer has no push to jump, push this topic with their producer
   - SEED DEALERS need to be reached. They have as much, or more, sway with a producer than their retailer/chem guy. Seed is an emotional decision!
   - Could this training have had a bigger pull if a larger name was behind it? Middle adopters need big names
   - Still too risky
   - Getting their attention is still the hardest part. We're still struggling with infiltrating the other groups. Maybe we need to be just one small presentation at the retailer's meetings, the nutrient mgmt. meetings, the livestock mgmt. meetings.
   - Maybe we need to go back to basics===no till soybeans.

- Need to examine personality
- Skeptic=slow to change
- The really good soil in central IL – in reality farmers in the most productive soils are doing just fine in the existing system – they could keep farming this way for another generation or two. It's just really easy to grow corn here – you can make a lot of mistakes and still be ok.
- There's an extra layer of management – the desire to make things *easier* as you get older
- It costs more than diesel at the moment
- Cash flow, especially to purchase new equipment
- Covers not considered in end of year budgeting for the next
- Most farmers do care about the land, but they need to be educated about what stewardship is NOW. "No tilling beans isn't gonna cut it anymore"
- Retailers need to be pushed.
- Need reward to outweigh work.
- Farmers are focused on big yields in good years, not better yields in bad years
- Conservation Cropping Systems typically have corn planted later than conventional. Is there data that shows that's ok because even tho this corn is pollinating later, the improved soil has water still available at that time, unlike conventional.
  - Main reason guys plant early is because they want to have their corn pollinating while they still have water. Can we show it's better to wait for better planting conditions, knowing you can rely on better water holding capacity of improved soil?
- Research is following the money. Technical advisors need COMMITMENT to soil health; "intestinal fortitude" to stick with it
- Universities need to divide and conquer on research topics...too much overlap
- Need numbers if we're going to convince farmers that aren't conservationists
- Need to monetize benefits—what metrics can we use?
- Yield CANNOT be the only metric for success…what can we use?

9. *Thinking back on each learning outcome – did we achieve that outcome, did we miss any? Learning outcomes were: 1) Comfortable describing soil while standing in a soil pit, or with a shovel-full of soil, or standing over a soil demonstration; 2) Can relate soil characteristics with management action; 3) Can judge improvements in soil due to management action; 3) Understand the dynamic properties of soil (moisture, SOM, etc.); 4) Know the 4 pillars of soil health management (do not disturb, living root, keep it covered, crop rotation) and how these impact the dynamic properties of soil; 5)Knowledgeable of current research on soils and knows how to keep up with new research*
   - YES, all outcomes were achieved…but it's hard for him to assess each individual's ability.
   - For every presentation we need to have a clear: Audience, Purpose, goals, Outcome.

10. *What is your opinion on going into a deeper dive on actual presenting skills and communication skills. Should we spend some time on this?*
    - Useful. It will help SWCDs do one-on-one training/planning with farmers
    - Yes. Make sure SWCDs are helping with FFA development of "soil buckets." Scott Jones is the catalyst for this project…
    - Depends on the group. May help individuals find out their (marketing) strengths.
    - Trainees should already be doing this type of work (building communication skills) through their normal training.
    - At least more sociology talks-yes!
    - How to reword questions to tell a better answer
    - Modelled by good speakers
    - Yes. Jess from NFWF was valuable. This is part of getting the word out.
    - Not for industry folk, they need economics
    - Maybe for the farmers, but maybe farm bureau would be better avenue for that skill building?
    - This workshop needs to be SCIENCE based; seek communications skills elsewhere.
    - Yes: how to carry the message; do practice interviews; get more middle adopter training
    - Communications training may be a way to keep this group going.

- It would be useful to have more information/tools on how to defend your decisions without being defensive
- No. By this time in your career you have it or you don't. Focusing on the knowledge will make people better in whichever they are naturally---a speaker or coordinator.
- Should be included; more like Jess' presentation. What words to AVOID

Workshop specific comments

March 2016: Bloomington, Soil Health @ Mark Freed Farm

- SEEING the microbes with Barry's phone tool was great!
- Freeds were great farmers to look up to!
- Seeing two different pits (good/bad) is sometimes better than just 1 good pit
- This training was good to hook people…then followed with the 'why' and 'how'
- Biggest takeaway: realizing the resiliency of the soil in a soil health system
- Good training to set the tempo for the rest of the trainings
- Barry's presentation was easy to follow
- Lots of time for Freeds to talk to us was good
- Good to have Barry's tabletop demos
- Doug went too fast, should stop and ask if everyone understands.
- Mark Freed's transition to next generation was good.
- RIGHT AWAY-made us look at end goals of the system approach.
- Could floaters be brought up to speed somehow to not slow down the core group?
- Sets up the WHY
- Doug Peterson= good, practical
- Great to see change on the land
- This was a long day inside, but it was good info, what they've been looking for
- Barry is necessary. Scientifically sound. Who is Barry's IL counterpart?
- Good intro,
- Need to continue to stress INDICATORS, management of these principles is most important
- Throughout workshop, we need to know basic small changes that can work towards soil health; meeting people where they're at

June 2016: Auburn IL, Adaptive Nutrient Management @ Tim Seifert Farm

- Seemed like Tim was not trying to make it work.
- Two different mentalities were apparent with Dave Moose/Tim Siefert. Dave realized value of long term; stayed committed.
- Tim was trying to make it fail; U of I backed him to fail; yield driven
- NEED to educate on the carbon cycle if we want to increase OM, it's not just no-till
- Tim was critical of the new system, but he would be a very typical producer
- Took the least away from this workshop
- Great location to view a lot of different practices. Showed opportunity for farmers to TRIAL things, even if small visual of every day
- Tim seemed negative, but maybe it was good to see in the mind of a middle adopter?
- Shalamar's work is easy to share with more groups
- Maybe least favorite
- MORAL aspect of stewardship was hit on here….good time within the 6 trainings.
- Value of a skeptic= forces us to get off high horse and sell the system
- Dan Schaefer=valuable voice
- Good to be seen in a watershed=need to prove these systems do increase water quality
- Hearing skeptics is valuable.
- Hard to see field work without peer-reviewed data
- cool discussion of N application methods and equipment

- Siefert's farm helped create the conversation on WHY he's doing it
- Shalamar is always good
- Q that has to be answered: reduce fertility to make $$ fit for covers. How can this be done (reducing fertility inputs) if some farm managers REQUIRE min. inputs on rented ground?
- The public meeting did not serve the group well.
- IF done again, data can be updated. New research has come online since.
- Shalamar and Joel are great local resources
- We need to begin seeing SHP's economic results
  - Nitrogen can't be focal point anymore!
  - How can retailers assess other needs? Micro/macro needs?

August 2016: Western IL Univ, Soil Testing and Livestock/covers @ Trevor Toland Farm

- Did Jen's soil health analysis factsheet/walk thru get finalized? They'd love to use it/have it to hand out
- Did Dick Lyons send his soil to Donna Brandt in Missouri? If so, what were the results?
- First time farmers are excited in meetings; they are finally making decisions!
- BEST EVER Rainfall Simulator Demo
- Could have talked more deeply on re-infusion of livestock on cropland
- From this meeting, one farmer decided to start tilling (to kill pasture) in the heat of summer to have least impact on soil structure. Changed his crop/cover crop plans to allow for summer tillage==more biologically friendly rotation
- Wants to question more of the standard testing---how did we arrive at our traditional thresholds for soil tests? Are they flawed?
- Toland showed low to no inputs= has to rely on biology
- Would've been good to see Gruver's research
- This was the most exposure to pastures one trainee ever had; good to hear farmer's perspective….it's clear the farmer is PROFIT driven (rather than yield driven).
- Gruver's rainfall simulator was great
- Pasture=visible difference in quality compared to what is normally seen
- Activity using soil indicators worksheets at WIU farm was GREAT and good intro for typical farmer if they won't send soil health samples off
- Donna's small group activity was great
- Rainfall simulator - great to see underside of trays (showing infiltration), trainee now does this in his own field day presentations
- Toland Farm-didn't see the system. Seemed to just be a cattle grazer.
- Still not hearing the tie to a yield increase: What's the benefit?
- Good to see Toland farm, how he's making land be valuable that wouldn't be viable as row crop.
- We need to understand measurements of soil health tests
- Rainfall simulator sticks out
  - More training IS NEEDED on how to run this effectively (ie Farm Progress disaster!)
  - Joel did a great job showing how to collect samples
- Soil tests are still not ready for production.
- Does interpretation of soil health tests need to be geo specific?
- Next round: Do we need to update this segment with how tests are used today, aka what's useful now, what can we glean from them now even if some of the info is still a mystery

November 2016: Franklin/White Counties, Adapting @ Jr Upton Farm

- Showed value of hopping onto a research project early; it paid off for Jr.
- Jr. KNEW he had the fragipan, and saw it getting broken.
- SO Impressive to see the annual ryegrass break the fragipan
- Variety plots are good for professional, but that type of info to a farmer would scare them---too many variables to choose from.
- biggest takeaway: NO amount of chemical inputs would ever have that impact on Jr.'s farm. NONE.

- In reference to Fandel's herbicide residual work, these resources are better: Penn State, U of WI, Purdue
- Residual herbicide topic - EASY to take to farmers
- Best example of long rooted covers; we were able to quantify what he was doing
- We need to find highly eroded land/low OM fields in EACH county and do this type of work. REPLICATE
- Mike Plumer! Cool to see the White farm (U of I research farm) - didn't know it still existed
- This workshop drove home the point that it's not just us working on this – different soils, same concepts
- Jr. made a connection between fragipan and plowpan (in his farm operation)
- Murdoch was great; how he set up the fragipan discussion
- Timing could have been improved. Seeing the cover crop research plots in the SPRING could have been more beneficial.
- SOIL PIT was so great
- Need more data on multiple-species cover crop plantings. Is there research data that shows a yield bump? Why? How much?

March 2017: Arrowsmith, Equipment & Seasonal Strategies @ BCS

- Pragmatic workshop
- Question: Are our systems working @ the expense of soil health?
- Get into COST of each individual system (conventional/soil health system)
- 2nd day scenario development: lack of good way to test in the industry; we're missing a level of integrity
- Could have pushed this topic to beginning of series; fairly basic, more so than workshops #2, 3, 4
- A lot of value in seeing TOOLS
- Popup is necessary on planter
- Planter setup is SO VALUABLE
- Great to see the different equipment: roller crimper, Hagie/high boy,
- Good discussion on down pressure
- Could be made better if Precision Planting was a part of this day. Their equipment is new and necessary for the group to know about.
- BIGGEST challenge to convince farmers to no-till: establishing a good stand of cash crop in high residue
- Does Precision Planting have research they can share showing data of yield/population planting in high res?
- Felt like these topics were elementary, already giving producers these mgmt. tips.
- Could the topics be amended based on group's info level?

July 2017: Chillicothe, AMF & Sociology @ Kirk Kimble Farm

- Big Q: Is herbicide as detrimental to biology as tillage? Did we take time to do this strict comparison?
- With nutrient mgmt. choices in reference to biology, we need to know how to mitigate problems of whichever application. They all have tradeoffs.
- sociologist was good. Could have used this topic sprinkled in the whole training.
- Wendy = incredible!
- Served as a celebration of all we learned----brought it all together
- Good timing—we were ready for this talk
- Dr. Taheri did a great job
- Trainee gave microscope activity to local college to replicate
- Don't agree with broad social categories (middle adopter, innovator), believes it's based on individual personality, sell to that personality type.
- Good flow to start with, rather than end with, the public portion
- Wendy Taheri/AMF and Jess/sociology were the highlights.
- Disappointed that we couldn't do a soil pit in the neighbor's (conventional tillage) field.
- Seeing the farm (for all workshops) is necessary
- Soil pit should have been focused on
    - Most interesting workshop
    - Most advanced, never heard this topic before