**S-1083 - Annual Business Meeting 2022**

Date: November 2nd, 2022 (Wednesday)

Time: 10 am -12.30 pm (CST)

Online meeting:

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| <https://uark.zoom.us/j/88625283512?pwd=M3dGME5qQUtqMG93NklkaUlzRXRIUT09&from=addon> |

**Recording:** <https://uark.box.com/s/kd0pgeb2bd7lrec9wryggjpgylhtb313>

**Agenda**

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| **10:00 am** | | Meeting starts |
| **10:05 am – 10:15 am** | | Introductions  Sydney Everhart – U Connecticut, transitioned from UNL to UCONN in the past year, now as Dept. Head  Rachel Koch – USDA working of foreign plant pathogens  Soledad Benitez– The Ohio State University Carla Garzon – Delaware Valley University – Assisted previous versions of writing and renewal  Sharifa – Pennsylvnia State University  Nathan Slaton – Advisor – Univerisity of Arkansas – Division of Agriculture |
| **10:15 am – 11:30 am** | | Research updates |
|  |  | Sydney Everhart  Rhizoctonia zeae – Project focused on fungicide resistance lead by two PhD student Nikita Ghambir and Kodati. In vitro testing of three chemistries using isolates from corn and soybean. No difference by host but most isolates were sensitive. Among the chemistries, azoxystrobin was one of the focus, since SHAM was not effective on controlling alternative oxidation, a greenhouse assay was conducted. Stand counts and disease index showed that azoxystrobin did not reduce disease severity.  Further analysis included population genetics using markers derived from genome sequencing. With a set of markers there was enough resolution to divide the population and the population is mixed, which could mean a higher risk for fungicide resistance. |
|  |  | Sharifa Crandall  Verticillium dahlia VCG to identify populations moving from weeds and other hosts to economically important crops. *V. dahliae* could serve as an endophyte in other hosts that could increase the potential for reservoir populations that increase genetic diversity. There are two main groups VCG4A and 4B, both causing disease on potato. Currently, Sharifa’s group is working on developing and optimizing the primers for detection of the two VCG groups. There is also ongoing field work with different gradients of inoculation using potato and oats to determine pathogen movement and looking at microbiome component to determine the role of rotation and beneficial communities.  Second project is focused on continental movement of soilborne pathogens through a NASA grant in collaboration with Katie Gold from Cornell. Using *F. oxysporum* to understand movement of spores in dust plumes and contributing to spread of major diseases. The questions are could we model pathogen movement in air currents and proof of concept of detection of *F. oxysporum* with spore trapping in key areas in the Caribbean. |
|  | 10:45 am | Alejandro Rojas  Under objective 1. Continue work on taproot decline combining remote sensing, disease severity and molecular diagnostics to understand disease progression and epidemiology of the pathogen. Yield and plant stand were used as parameters, showing an effect of cover crop without pathogen, but the effect increases with pathogen present.  Also looking at the population genetics of *Rhizoctonia solani* AG 1-1A using existing collections at Arkansas but increasing sampling effort in current populations in Arkansas and nearby states.  Obj 2. Working on cover crop rotations within a corn-soybean rotation system, data |
|  | 10:55 am | Soledad Benitez  Phytobacteriology and agricultural microbiomes lab  Obj. 1 – Soil management history, fungal communities and SCN infestation. Soil samples from SCN coalition were stored for microbiome analysis and SCN data. Using full length ITS region using a third-party lab. The idea is to fully classify the fungal species present in the soil. There is no significant difference in diversity across SCN pressure levels. There are key species already identified that could be associated with healthy areas, such as Trichoderma and *Clonostachys*. Also using grid sampling to understand field scale variation in collaboration with Horacio Lopez-Nicora.  Obj. 2 – cover crop rotation and soybean interaction. Different rotation systems including corn-soy rotation, corn-rye-soybean, corn-fallow-soybean-wheat-corn. Most of the analysis is focused corn-rye-soybean rotation to develop an understanding of beneficial nematodes, carbon pools, and the interactions. |
|  | 11:25 am | Rachel Koch-Bach  Cover crops: do they act as green bridge, most studies focused on specific pathogens and qPCR quantification. But there are standing questions on how cover crops could increase overall pathogen populations between cropping seasons. Using a cover crop rotation and soybean with distinct maturity groups to determine the contribution of growth period of the cover crop on accumulation of pathogens. There is proof of concept using *Blumeria* and *Fusarium*.  Peanut emergent disease in South America caused by a basidiomycete, and it is transmitted in the shell. The causal agent is *Thecaphora frezzii* and it causes peanut smut. The aim is to understand the genetic diversity of the pathogen and the type of reproduction. |
|  | 11:05 am | Carla Garzon  Since Carla moved to DVU, the program has diversified into ornamentals, hemp and it is mostly focused on controlled environments. Danielle is research associate working on the development of eprobes for the detection of fungal pathogens in hemp cannabis.  Hormesis in fungicide resistance using *Pythium*. Used a genomic approach to understand the genetic basis of this mechanism, and data is being analyzed and published. |
| **11:35 am – 11:50 pm** | | Opportunities to collaborate:   * Review paper: “Soilborne plant disease across time and space: the next frontier in integrative research”   A final draft of the paper should be share with the full group in the next month. The actual draft is present at this link:  <https://docs.google.com/document/d/16JP_876wZvCXzPckM-sPkBcJ_ePucbHRUIUq3Lkqx3I/edit?usp=share_link> |
| **11:50 pm – 12:10 am** | | Project renewal discussion  The project is up for renewal and the process started in the late summer. However, because of logistics issues we had a later start on this process. We need to focus on submitting Issues and Justification before thanksgiving (Nov. 17).  It is also a good time to re-work objectives making them less broad and more specific to address specific goals. |
| **12:10 pm – 12:30 pm** | | Other business:   * Election of secretary for 2023   Please nominate a participant or self-nominate for the secretary position. This secretary will become the chair for 2024.   * Conversation about the 2023 meeting venue/format   A more formal meeting should be considered since participation could be an issue. If the online option will continue, participation should be encouraged, with the aim of strengthen collaboration between participants. The selection of the venue should be conducive for conducting meetings and presentations that allow collaborations.   * Preparing the 2022 report   Sydney and Alejandro will collect reports for 2022, please send those as soon as possible. |