

Scholarship in Greenkeeping for Students and Community

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Introduction/need for innovation or idea

Academic poster presentations are a critical component of many academic and professional research conferences (Leach, 1998; Rowe, 2017; Khadka et al., 2024). Students and professionals alike are able to disseminate their findings to a broad audience and the exercise often leads to improved competency in their discipline (Beamish et al., 2015). Presenters and attendees can engage in one-on-one conversations and view other posters to gain critical inspiration for future work (Salzl et al., 2008). While poster presentations are often found in graduate and undergraduate spaces with evidence of successful assessment and formative feedback (Peeters et al., 2025), there is a dearth of evidence on their use in workforce development programs at the community college level as an intercurricular component of training, or, with individuals in applied agriculture spaces from underrepresented backgrounds. Workforce development avenues like apprenticeships often lean into applied field experience and customized training as primary components of the academic experience, but research has not discussed with detail the benefit of providing an outlet for disseminating research findings concurrent to field experience. Moreover, many individuals engaged in alternative education pathways at the post-secondary level cite a fear of public speaking (Gallego et al., 2020; Grieve et al., 2021;) or difficulties with social engagement due to a disorder (Hutson, 2022). Intimate interactions present during poster symposiums may prove to be a viable first step in approaching a public speaking phobia and leverage intrinsic motivation in students to seek additional opportunities to build self-efficacy in speaking in front of an audience (Dwyer & Davidson, 2021).

How it works/methodology/program phases/steps

Research posters can leverage both critical thinking in a unique population of students and community partnership. Apprentices in the United States Golf Association Greenkeeper Apprenticeship Program (USGA GAP) were tasked with conducting applied scholarship that led to the presentation of findings at a research poster exhibition. The apprentices began the process with proposals for study at the end of the spring semester that required collaboration with their field-based mentor to craft a research study protocol. The topic and protocol were required to be (a) carried out at their apprenticeship site and (b) focused on findings and data that would inform improved agronomic practices at the golf course. Projects were submitted for review during the last class session in the spring semester. Students then collected data over the summer using tools from their course, USGA Green Section staff, or from the college. Regular emails and correspondence was made to remind students to keep up their studies and given the non-traditional student demographic, resources were shared to students via email that helped with the review of basic scientific techniques that may have been lost over the duration of time since they were in a traditional program of study at a secondary or post-secondary level.

Results to date/implications

From turf health to cart path construction, the apprentices covered a broad range of topic areas that illustrated both the story of their studies as well as the impact that their work has made

back on the agronomic management of the golf course they work at during the program. Students began the first two weeks of the fall semester with a split class session; the beginning spent working on data analysis and presentation, the second half of class spent designing the posters they would eventually present. Students used either Canva or Microsoft Powerpoint and were encouraged to keep in mind the branding of their posters to reflect the course where they apprenticed during USGA GAP. Poster development was monitored and one week prior to presentation, the posters were saved and sent to the print shop. During the remaining class session before the exhibition, students prepared a small note card with sixty seconds of dialogue that would help them discuss their findings with a stranger. They practiced their talk in front of every student in the room, and left prepared to present. The exhibition was held in the World Golf Hall of Fame where easels were set up around the room to showcase the printed posters that were affixed to foamboard using t-pins. The event has welcomed on average over 100 members of the local and regional community in the first two years. Students both defended their work as well as engaged in critical conversations that built their network and inspired future research to carry on their findings. During the class session that immediately followed the symposium, students reflected on their experience and wrote out messages on a sticky note for next year's cohort that offered either pearls of wisdom or tips for improving the experience.

Future plans/advice to others

Future symposiums will continue to follow the summer to fall model but will incorporate the sister campus in South Carolina to display the full breadth of work being done in the Carolina's. Additionally, an emphasis will be placed on bringing in students from the previous cohorts to observe the new posters and mingle with previous members of USGA GAP as a networking function. Given that the students in USGA GAP vary in research practice and competency with turfgrass science material, a focus has been put on elevating the activity for those who have previous experience by taking one-on-one time to run advanced statistical analysis with the data. Conversely, those who do not have that same level of skill and confidence are assisted one-on-one with poster design and emphasis on graphical representation. Recommendations for future work in the space include: (1) more attentiveness to the value of pictures as a way to showcase data (2) the offering of template poster designs to those in need of learning accommodations, and (3) deployment of a pre-post survey instrument to capture changes in knowledge, skills, and/or dispositions towards presentation of scientific findings by those in applied agriculture spaces and potentially to an even younger audience showcasing their findings in school-based agricultural education settings like FFA who are challenged by public speaking anxiety or social disorders.

Costs/resources needed

Use of the World Golf Hall of Fame space was donated and the foam backing on the posters was borrowed. Easels were purchased at a cost of \$16/unit.

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