

Accelerating People Development at Vertex Pharmaceuticals Through IAAE® Learning Sprints

Case Study 2024

The International Academy of Automation Engineering (IAAE) has supported, and continues to support, Vertex in their intentional and proactive development of their personnel through an emphasis on both education and credentialing.

Vertex engaged IAAE to support in the capability building of their current workforce, spanning groups such as manufacturing operations, automation, validation, quality, business systems, and others.

Who are Vertex Pharmaceuticals?

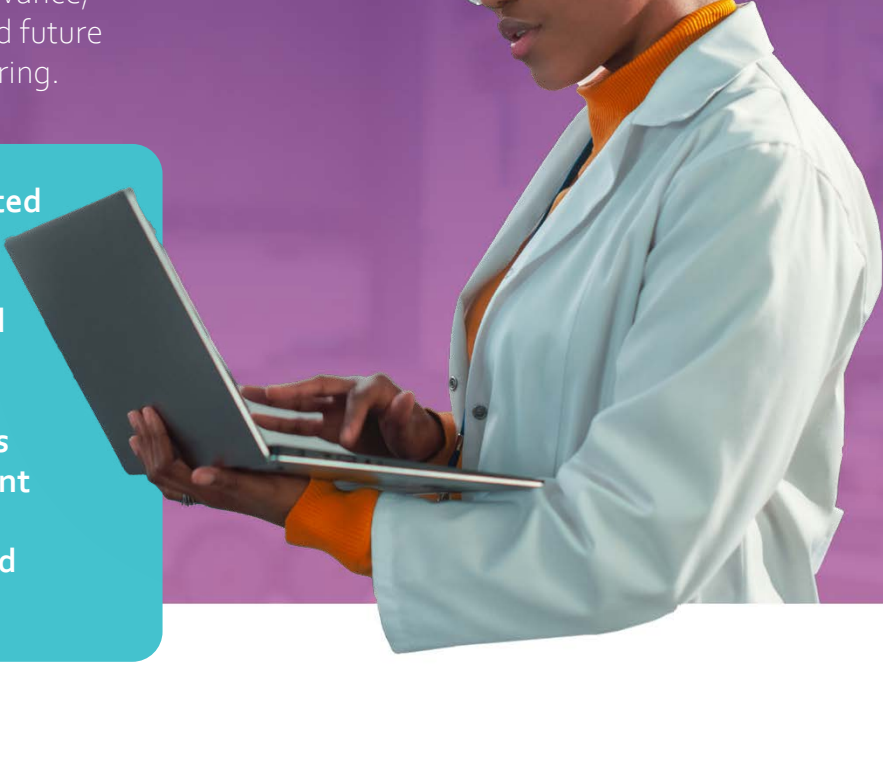
Vertex Pharmaceuticals, headquartered in Boston, Massachusetts, are a biotechnology company that invests in scientific innovation to create transformative medicines for people with serious and life-threatening diseases. Vertex are one of only a few companies that innovated and led the adoption of continuous manufacturing processes for small molecule regulated pharmaceutical products.

Overview

Together with IAAE, Vertex runs periodic Learning Sprints. Each Learning Sprint lasts between 4-6 weeks with weekly online module assignments and group sessions that include presentations from SMEs and hands-on workshops.

The Learning Sprint topics have covered Data Integrity, Cross-Site Automation, Quality + Validation, and Hands-on Data Analytics. Topics are chosen by Vertex based on relevance, interest, and need given their ongoing and future investments in technology for manufacturing.

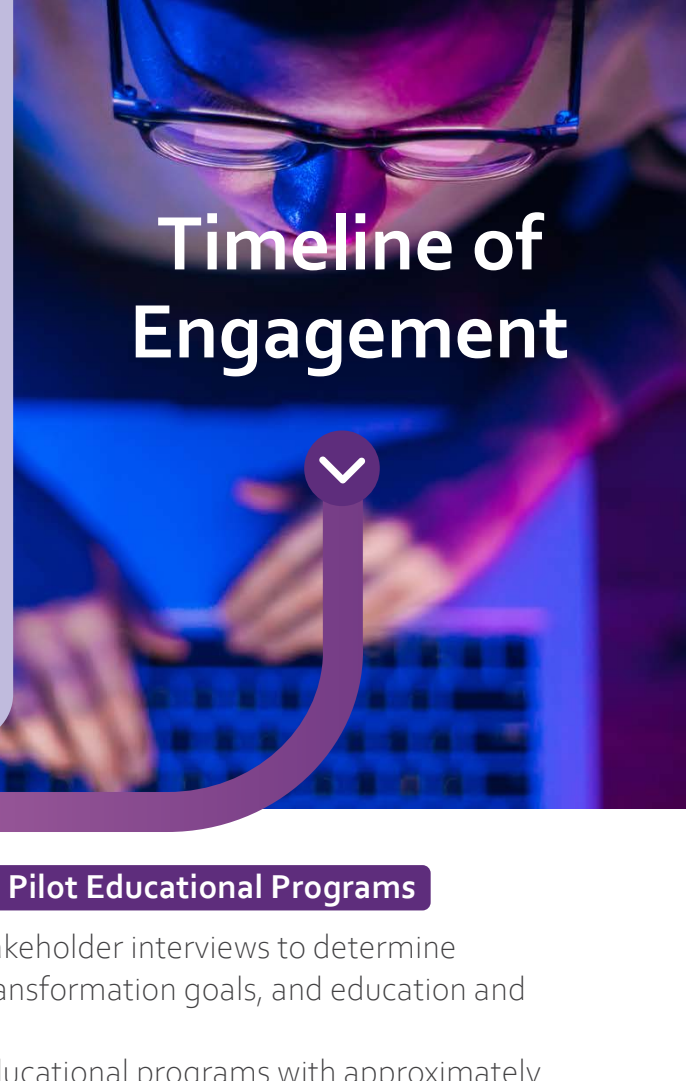
Third-party SME presenters were invited to attend weekly group meetings. For example, IAAE and Vertex invited guest speakers from a company called QbD Vision to present for the Data Integrity Sprint. IAAE also worked with one of Vertex's solution providers called SEEO to deliver a Learning Sprint that included IAAE online education materials, guest SMEs from SEEO, and hands-on analytics training.



The key benefits of these Learning Sprints



Examples of Learning Sprint topics include:



Timeline of Engagement

2020-2021 Stakeholder Interviews and Pilot Educational Programs

- IAAE conducted extensive stakeholder interviews to determine Vertex's digital culture and transformation goals, and education and upskilling gaps.
- Vertex ran a few pilot IAAE educational programs with approximately 25 people from various functions.

2022 Data Integrity Learning Sprints

- Data Integrity Sprints included weekly online module assignments and group meetings, SME presentations, completion reporting, surveys issued, and ultimately credentials sent to participants who successfully completed their program(s).

2023 Quality + Validation, Cross-Site Automation and Data Integrity Learning Sprints

- Participants were assigned specific modules from within the following courses, tailored to the Sprint topic(s) they were signed up for:
 - Essentials of Automation for Life Sciences Manufacturing
 - Digital Technology Enabling Data Acquisition, Visualization, and Analytics
 - Electronic Data Integrity for Life Sciences Manufacturing.

Hands-On Analytics Learning Sprints

- The Hands-On Analytics topic included a partnership with an existing vendor at Vertex, hands-on training worksheets, and the following IAAE module assignments:
 - Data Acquisition
 - Data Visualization
 - Data Analytics
- All 2023 Sprints included weekly online module assignments and group meetings, SME presentations, completion reporting, surveys issued, and ultimately credentials sent to participants who successfully completed their program(s).

2024 Continued Engagement

- Following the success of the 2023 programs and feedback gathered from participants' survey responses, Vertex and IAAE plan to continue delivering Learning Sprints into 2024 - running similar topics with new participants, and also designing new topics that align with the technology roadmaps for manufacturing sites.

Credentialing

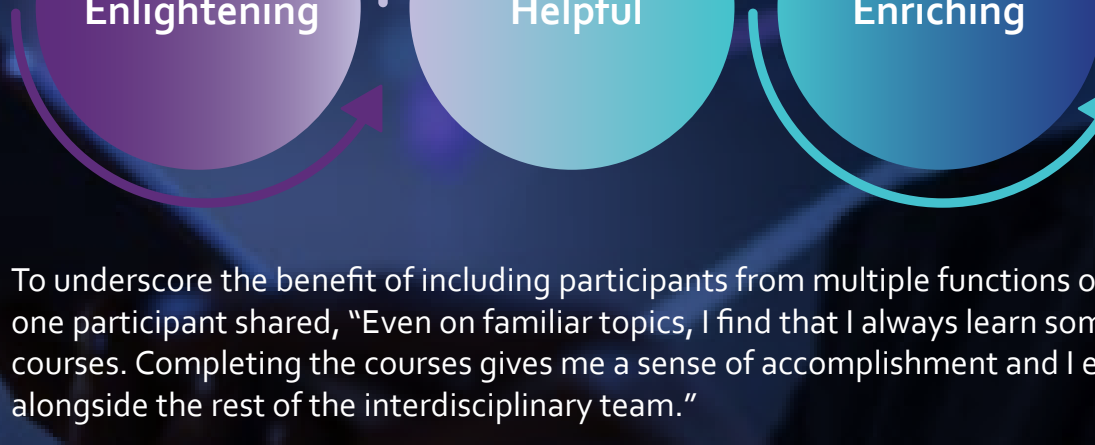
Over 230 credentials have been issued to over 115 Vertex personnel.

Process Impact

This project improved personnel performance through specifically targeting areas and groups within Vertex, and then tailoring the Learning Sprints to support their workforce and build digital capabilities.

From the survey results collected at the end of the various Learning Sprints, 100% of participants who answered said that participation in and execution of the courses offered through these Sprints made them more effective in their current role.

Some words participants used to describe the Learning Sprints included



To underscore the benefit of including participants from multiple functions on similar learning topics, one participant shared, "Even on familiar topics, I find that I always learn something new from IAAE courses. Completing the courses gives me a sense of accomplishment and I enjoy building my skills alongside the rest of the interdisciplinary team."

These ongoing Sprints improve personnel performance not only by supplying new knowledge across various functions, but also empowering individuals within their role - ultimately leading to added value to the company.

Business Impact and ROI

IAAE and Vertex have created materials to encourage internal participation in the Sprints and also to collect feedback. Most recently, IAAE created weekly short surveys to send out to speakers after each session to gather feedback on participants and presentation topics as a way to inform the design of future Learning Sprints, as well as ensure the approach continues to be received well by participants.

Additionally, this project improved cost effectiveness because rather than hiring new experts in specific fields, Vertex was able to upskill current employees in needed areas. This has contributed positively to employee retention and reduces the need to bring on new hires with the related costs of onboarding.

Strategic Impact and Scale

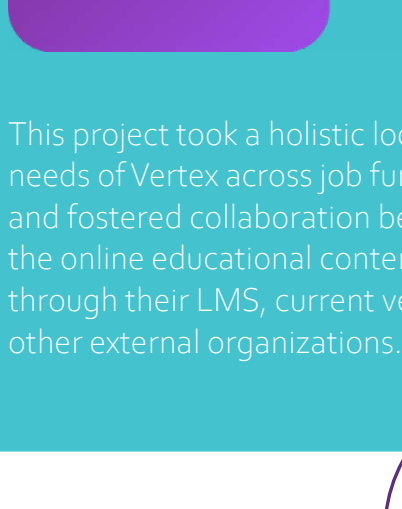
Regarding long-term business goals and furthering digital transformation, Vertex is not only committed to improving skills, but also their overall culture. They have set out to positively shift the mindset about digital transformation and promote a digital roadmap. Vertex believes that in order to reach a data culture they must encourage and provide data knowledge, which is why they have invested so heavily in the education of their people around important topics like data integrity and management.

01 By running these Learning Sprints on various topics across multiple functions, Vertex is actively working toward their business goal of "discovering, developing and producing innovative medicines so people with serious diseases can lead better lives." Their emphasis on continuous learning and development is also assisting with their mission to "train the next generation of leaders on the use and impact of techniques like machine learning and natural language processing in health care."

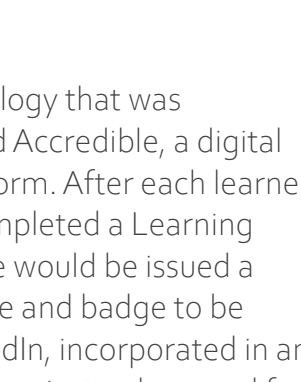
02 In terms of project scale, the Learning Sprints have spanned across multiple sites, functions and topics. In the future, they will continue to be tailored to new targeted areas for advancement in desired skills, and will provide even more participants within the company with credentials.

Achievements and Innovation

Vertex's commitment to supporting the education of its personnel and creating a culture that emphasizes learning and development improves the company's competitiveness in the job market and helps them stand out when compared to other manufacturers in the space. This project is innovative because the type of collaboration shown through the Learning Sprints is not common in this industry.

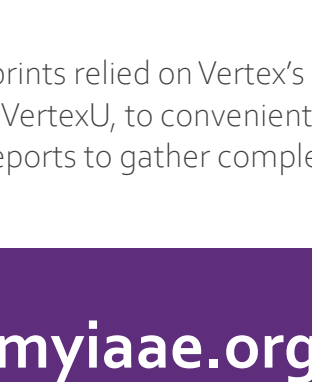


This project took a holistic look at the needs of Vertex across job functions, and fostered collaboration between the on-site educational content offered through their LMS, current vendors, and other external organizations.



For one of the Learning Sprints, titled Hands-On Analytics, IAAE partnered with SEEO - a vendor who provides analytics software to various industrial processing sectors including pharmaceuticals. Vertex was in the process of implementing SEEO software, so we thought it was a perfect complement to IAAE's data-focused online educational content. This Learning Sprint in particular combined courses and presentations on data visualization and analytics with hands-on SEEO workshops for the Vertex learners.

Supporting Technologies



Another technology that was included included Accredible, a digital credential platform. After each learner successfully completed a Learning Sprint, he or she would be issued a digital certificate and badge to be posted on LinkedIn, incorporated in an email signature, or just to be saved for personal records.



Finally, the Sprints relied on Vertex's internal Learning Management System (LMS), called VertexU, to conveniently deploy the IAAE's online content and pull learner reports to gather completion data.