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Providing Hands-on Training with Bioinformatics Databases: A Collaboration Between VCU Libraries & Wright Center for Clinical and Translational Research

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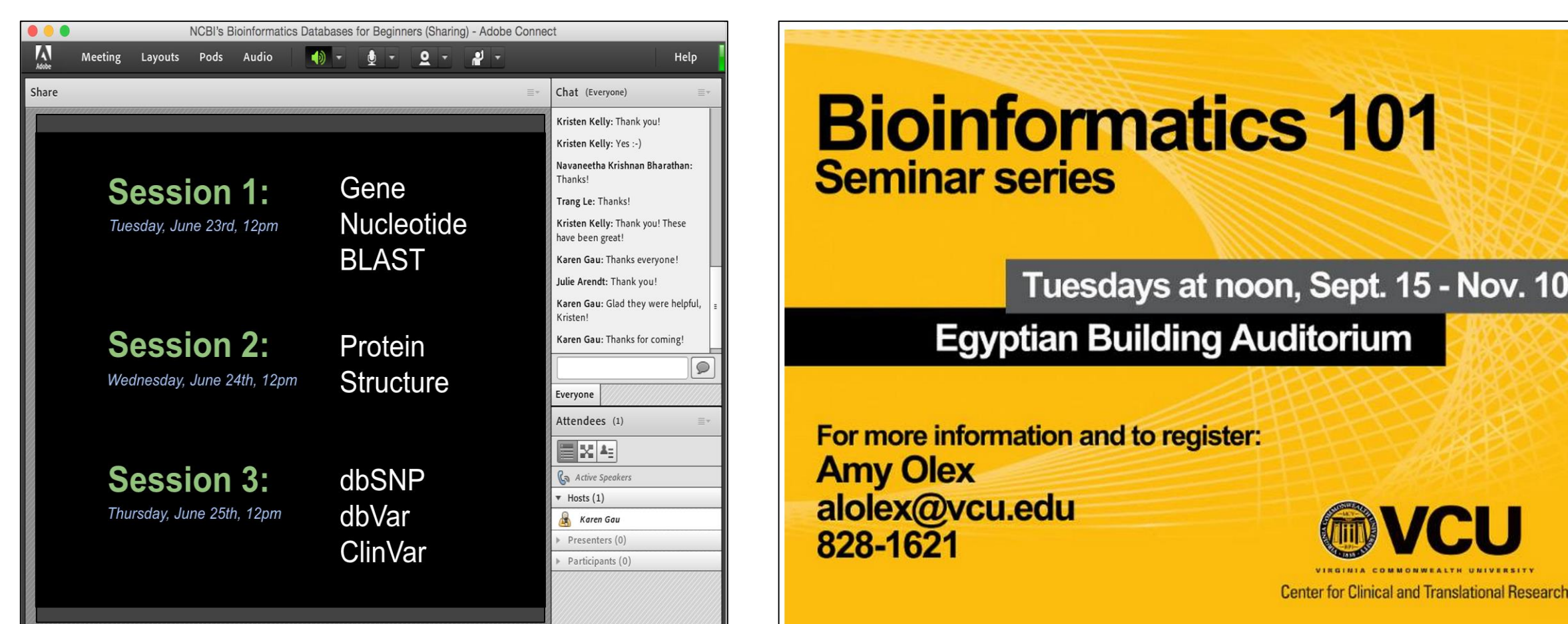
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Background

With the goal of increasing specialized services for researchers, Virginia Commonwealth University (VCU) Libraries sent its basic science librarians, Julie Arendt and Karen Gau, to an intensive training offered by the National Center for Biotechnology Information (NCBI) in 2015, “A Librarian’s Guide to NCBI.” Following this training, the librarians hosted a series of three one-hour “NCBI Bioinformatics Databases for Beginners” webinars from June 23 – June 25, 2015.

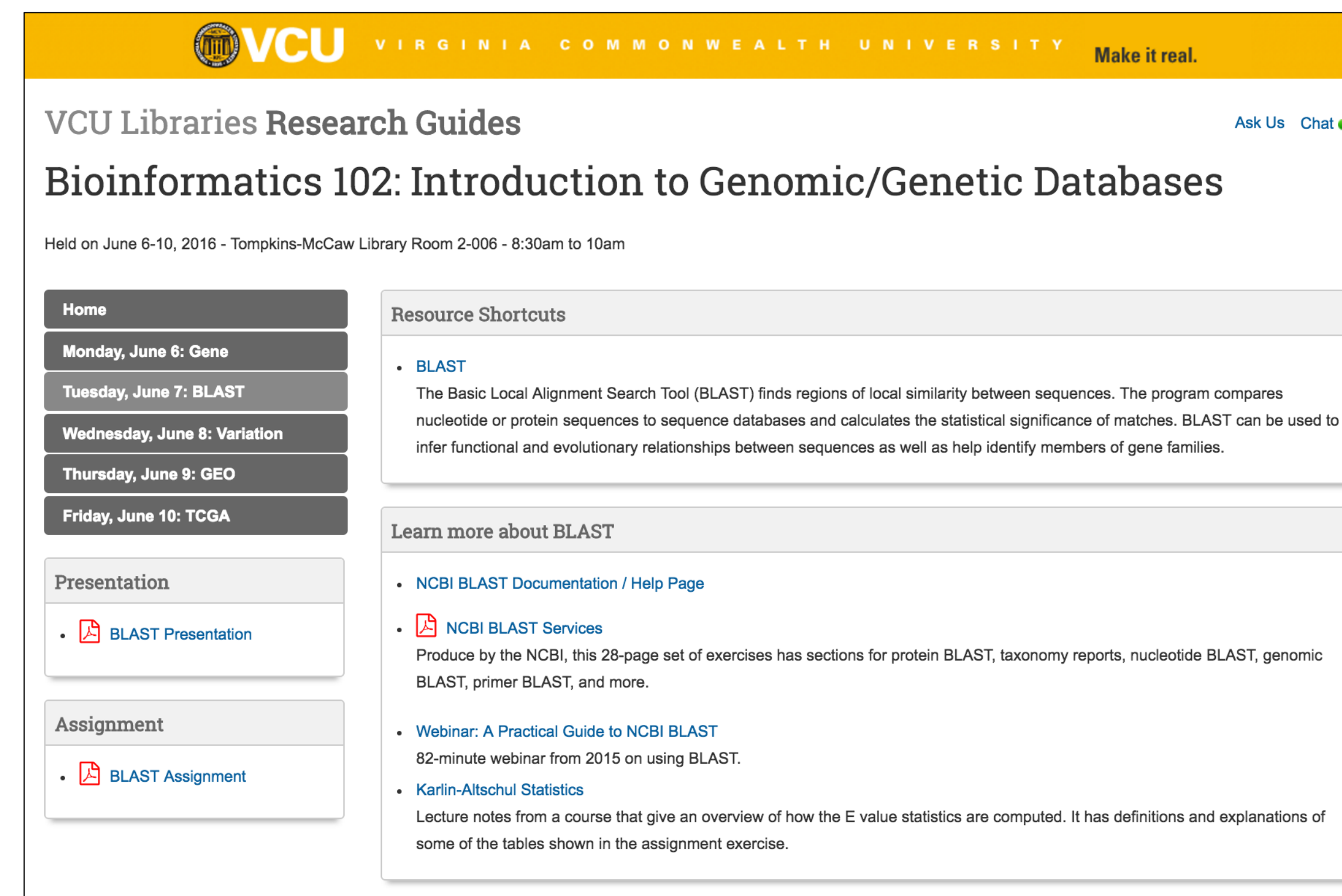
In the fall of 2015, VCU’s C. Kenneth and Dianne Wright Center for Clinical and Translational Research (Wright CCTR) expanded the educational component of its bioinformatics support by offering a Bioinformatics 101 seminar series. Karen Gau attended the series and spoke with its coordinator, Amy Olex, who shared that participants had expressed a strong interest in learning more about how to use bioinformatics databases. Amy and Karen discussed a partnership between Wright CCTR and VCU Libraries to offer an introductory bioinformatics database workshop -- Bioinformatics 102: Introduction to Genomic/Genetic Databases.



Screenshot of bioinformatics webinars offered by VCU Libraries (left) and an advertisement for Wright CCTR’s Bioinformatics 101 series (right), which included 8 seminars.

Bioinformatics 102: Bioinformatics Database Workshop

- WHY:** Feedback received from the Wright CCTR’s Bioinformatics 101 series indicated that the VCU community was interested in learning more about how to use bioinformatics databases.
- WHO:** Registration was open to 30 faculty and staff per session. The sessions were conducted by librarians from VCU Libraries (Julie Arendt and Karen Gau) and bioinformatics specialists from the Wright CCTR (Amy Olex and Aaron Wolen).
- WHAT:** VCU Libraries presented NCBI’s Gene, BLAST, and Variation Viewer. Wright CCTR presented The Cancer Genome Atlas (TCGA) and NCBI’s Gene Expression Omnibus (GEO).
- HOW:** Each session consisted of a 40 minute lecture with live walk-through demos, followed by 20-40 minutes of hands-on time, in which attendees completed a short assignment. A LibGuide was created to support the series. Certificates were awarded to participants who completed 4 out of 5 assignments. Daily 1.5 hours sessions were taught for one week in a Tompkins-McCaw Library classroom.



Bioinformatics 102 LibGuide. guides.library.vcu.edu/bioinformatics102

Results

Attendance

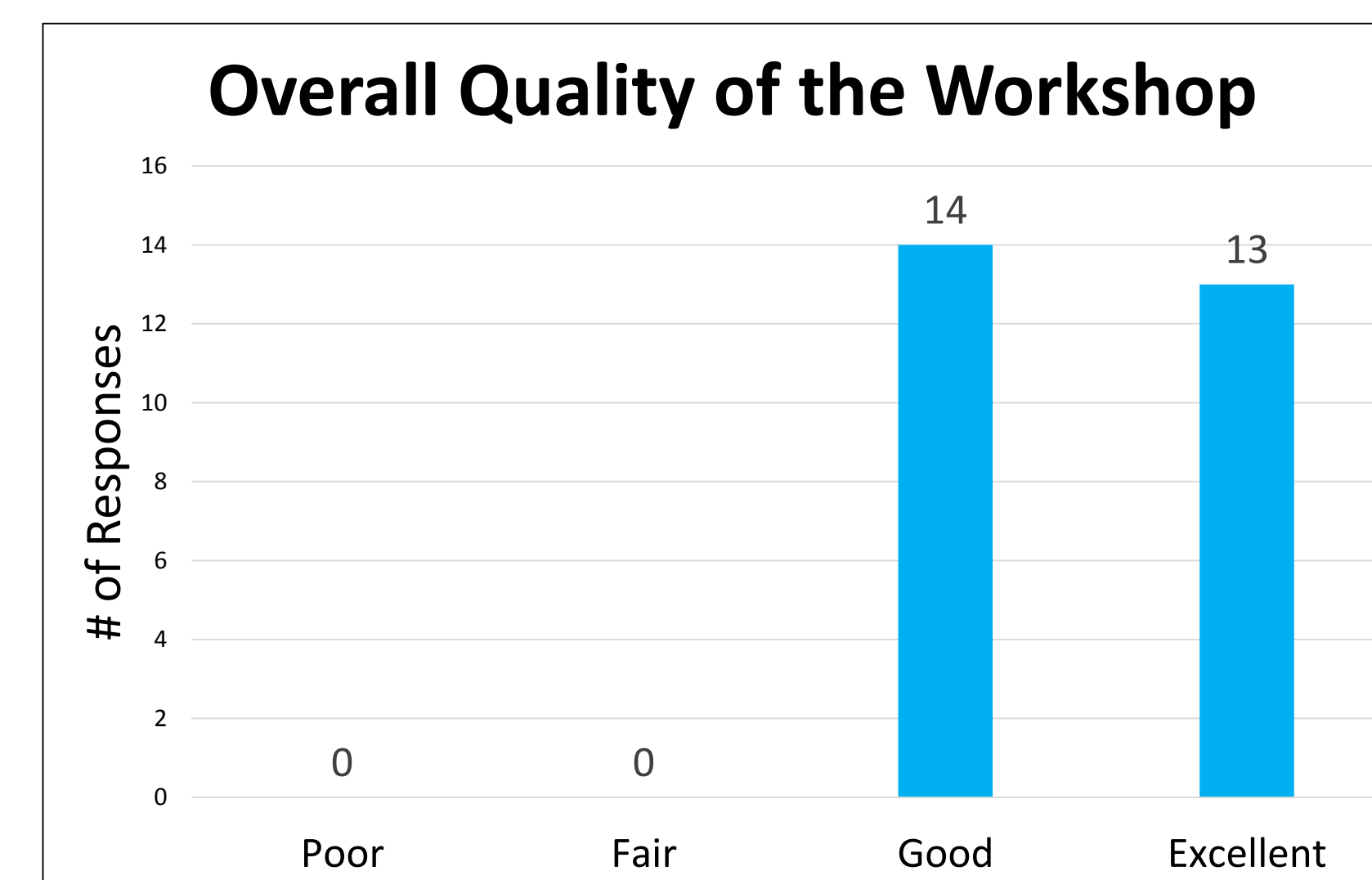
Registration for each session was full in under a week with a waiting list. Although registration was open only to faculty and staff, many registrants were graduate students who were also working as staff in labs.

Workshop Changes

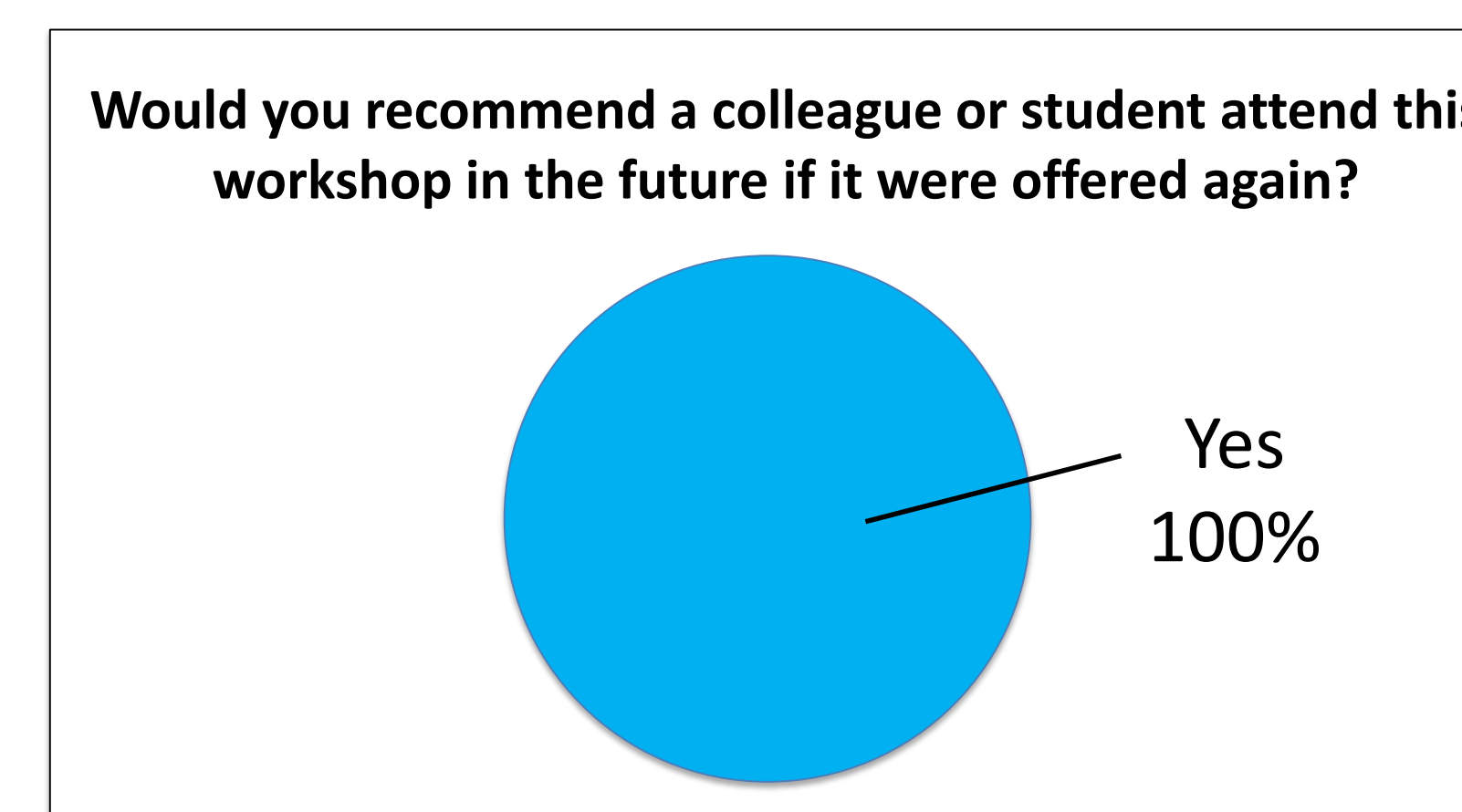
Vice President Biden announced the launch of the National Cancer Institute’s Genomic Data Commons (GDC) on the first day of the workshop. All of TCGA’s data had been quickly integrated into the GDC, making parts of the TCGA session obsolete, so this session was rapidly revamped to include the new GDC.

Workshop Evaluation

A quality assessment of the entire workshop showed that all survey respondents evaluated it as “good” or “excellent.”

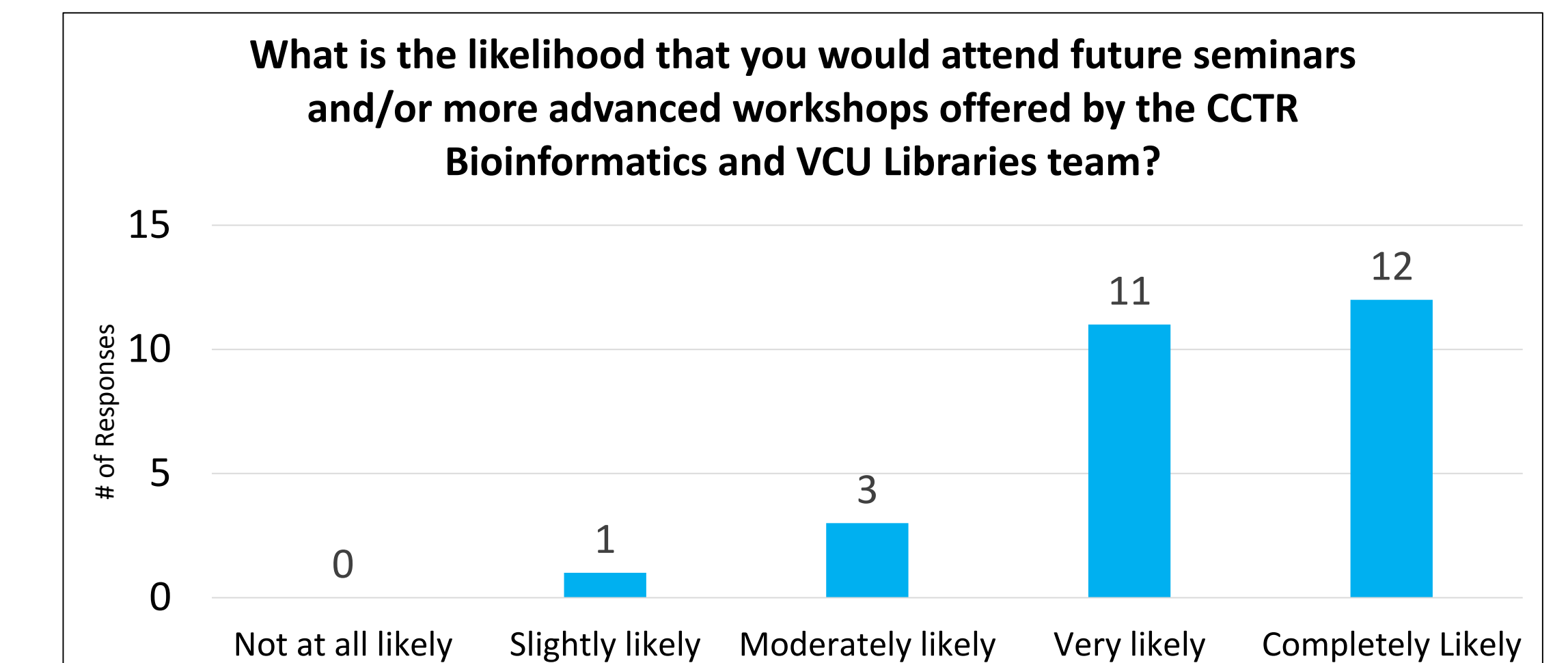


All survey respondents indicated that they would recommend Bioinformatics 102 to a colleague or student.



Wright CCTR and VCU Libraries Partnership

The Wright CCTR and VCU Libraries partnership was perceived positively.



Participant Recommendations for Improvement

- Step-by-step screenshots
- Longer sessions, or two sessions per topic
- Optional homework assignments for more advanced students
- More summer workshops
- Allowing student registration
- Recorded demos

Conclusions

Benefits of Partnership

VCU Community

An expanded selection of databases were taught to the VCU community.

Librarians

The librarians were able to utilize their NCBI training for three sessions and receive feedback from the Wright CCTR on common bioinformatics questions while developing their course materials.

Bioinformatics Specialists

Wright CCTR’s bioinformatics specialists were able to teach on resources they use often and fill a need identified by participants of their Bioinformatics 101 series, without significantly increasing their workload.

Bioinformatics Specialists & the Librarians

This partnership helped both organizations offer a larger-scale workshop without the full burden of preparing everything themselves.

Subsequent Results

- VCU Libraries and Wright CCTR were invited to conduct a few follow-up sessions for a cellular and molecular immunology lab.
- Due to its inquiries in preparation for Bioinformatics 102, NCBI contacted VCU Libraries to ask whether they would be interested in hosting an experimental workshop on EDirect. A subsequent EDirect workshop was co-hosted by VCU Libraries and Wright CCTR in July 2016 and was well attended.

Next Steps

Wright CCTR and VCU Libraries plan to continue offering its Bioinformatics 102 series on an annual basis.