Milan Radovich & Indiana University Health:
Iterative Analysis Allows Faster Discoveries

Life Sciences

Key Takeaways

Same data, same researcher, new data experience
results in 3 new discoveries in 1 evening.

About Milan Radovich, PhD

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"Dr. Milan Radovich, PhD is an Associate Professor at the Indiana University School of Medicine and Vice President for Oncology Genomics at Indiana University Health. He is also co-director of the IU Health Precision Genomics Program, a clinical program dedicated to the integration of cutting-edge genomics for the care of metastatic cancer patients...He is also actively involved in national precision medicine research as the ORIEN network scientific committee co-chair, a member of the Big Ten Cancer Research Consortium Basket Trials Working Group, and also served in the NCI Cancer Genome Atlas (TCGA)."

– Excerpt from https://www.cancer.iu.edu/research-trials/member-bio.shtml?id=3659

Challenges

After we uploaded the Thymoma TCGA dataset to our analysis platform, we wanted to test out the accuracy of our technology. Below were some of the questions we asked ourselves:

- Can we verify that our results are accurate?

- Can we confirm that new results make sense biologically?

- How would we show that researchers could use Tag.bio to see new discoveries in their data?

Solutions

We concluded that the best way to test the results was to have the experts themselves review our technology. This led us to reach out to Dr. Radovich who we had worked with previously. In the initial meeting, we were pleasantly surprised to find that the TCGA Thymoma study that we had uploaded was the same study published by Dr. Radovich himself. Who better to review this data than the researcher who published it. So, we gave access to Dr. Radovich and set up a subsequent meeting to review.

Results

A few days later, Dr. Radovich emailed us and said that not only was the data valid, but we should also submit his results as a poster at the 2019 meeting of the American Association of Cancer Researchers (AACR). Below are the three novel results that Dr. Radovich discovered in his data:

- Overexpression of the tumoral muscle-autoantigens: PPARGC1A, NEFM, and NEFL links thymoma to myasthenia gravis

- The FGFR3 oncogene is highly overexpressed in the rare subset of thymomas that metastasize.

- Chromosome 16q loss is a genomic hallmark of thymic carcinomas. The CYLD tumor suppressor on 16q is co-mutated leading to activation of STAT3
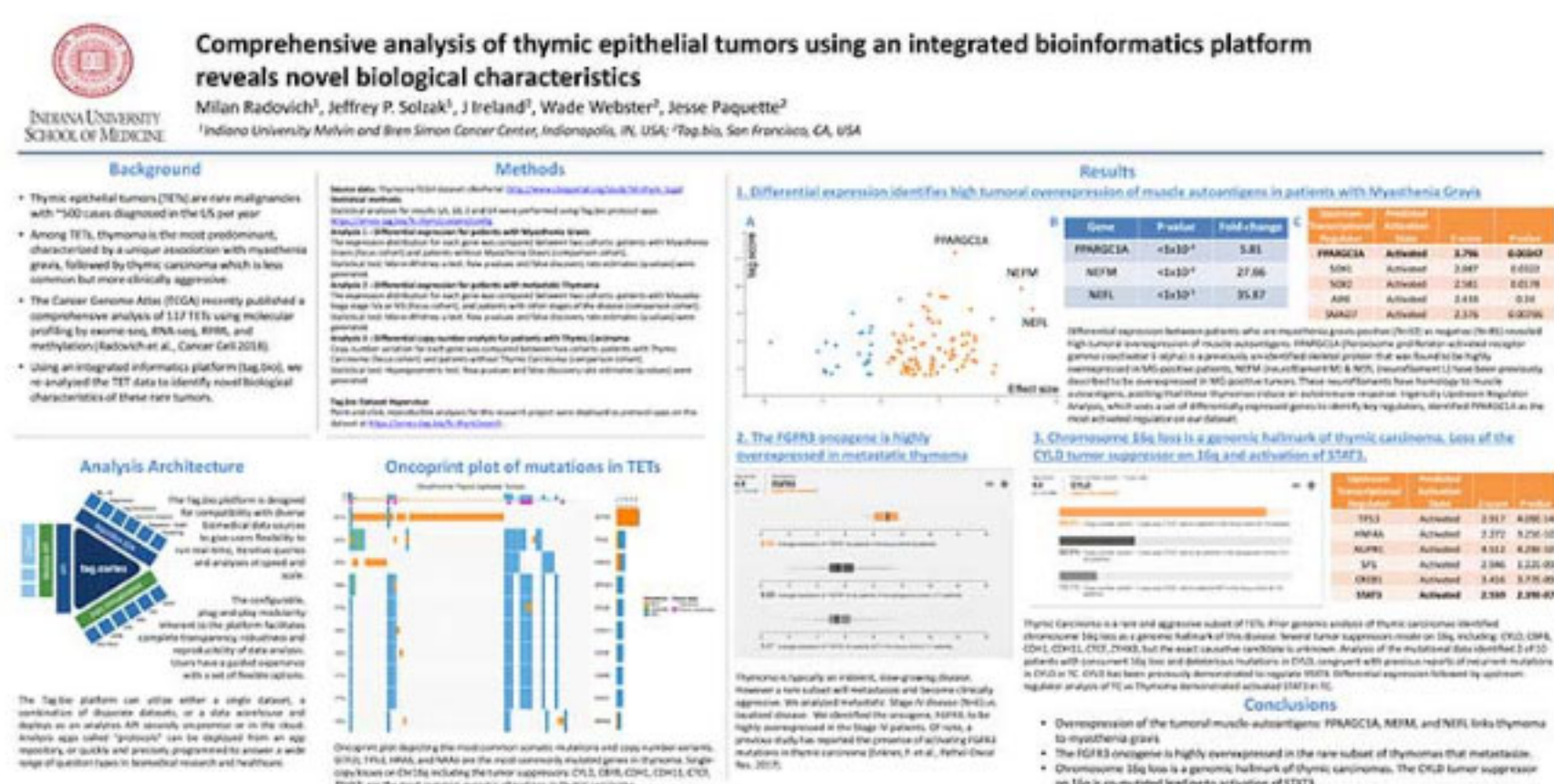
These results were then submitted as a poster for AACR: http://bit.ly/tagbio-tcga-thymoma

Dr. Radovich was pleased to be able to find new discoveries in his own data. What was surprising to all of us was that he was able to find them in the course of one evening.

This is a confirmation that our platform design enables researchers to query data rapidly and follow an investigative line of thought. From collaborating with Dr. Radovich, we know that the fact he could ask and answer his own questions rapidly enabled him to reach new discoveries so quickly.

If Dr. Radovich can uncover more value in his own data within a few hours, imagine what you could find in yours.