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Computational Platform using Biological Analytics to Find Hidden Patterns in Data to Improve the Production Process for Pharmaceuticals, Food and Beverage Companies and the AgBio Industry

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"We did an analysis for one company on some kinds of stress in their crops and we noticed that certain kinds of genes were quickly activated once the plant sensed the stress. Our analysis showed them this in a way that they could not see before. They already knew that at some point in the process those genes were activated but they did not realize how early on they were activated and that they caused other genes to start to turn on as well."- David Reed

CEOCFO: ***Mr. Reed, would you tell us the idea behind Mimetics?***
Mr. Reed: The idea is to take certain advanced bio-computation techniques and apply them to improving various processes in the discovery of new traits in crop plants, fermentation processes in food and beverage, production of biologically based pharmaceuticals, and other applications.

CEOCFO: ***How does that work?***
Mr. Reed: The basis of the technology is the insight it gives us into the way biological processes taking place inside of cells are controlled. For example, a yeast cell once it is divided from its mother starts to grow and at a certain point it stops growing and starts to divide again. There is some mechanism inside that cell that tells it, "… you have done enough growing, you are big enough and now you need to divide." This is a control mechanism based on genes and molecules interacting inside of the cell. There are now widely used techniques for sequencing genes and understand the biochemistry of cells, but gaining an understanding of the mechanisms by which these molecules and genes interact with one another has been hard. We have a new and much better technique for doing that than has been available. Once you have that technique, you can apply it in lots of different places.

CEOCFO: ***What is the technique?***
Mr. Reed: The algorithms start with data that you can get from the cells using technology and instruments that are readily available right now. This technology generates large and complex data sets. Our system then applies mathematical analysis from dynamical systems to try to uncover, for example, which gene is causing certain other genes turn on and off and when. Remember that genes are always the same in the cells but they are not always on and not always off; there is some interaction that goes on that changes that. It is this kind of dynamical process that our algorithms can bring out.

CEOCFO: ***Who is turning to you for services?***
Mr. Reed: We are working now with some of the leading companies in AgBio. The ones that produce new kinds of seeds with new traits for crop plants, traits that help the plants to respond to stresses in the environment like drought or high temperature. They are always innovating and trying to breed new plants. This has been a hit-and-miss proposition up to now and it costs them both a lot of time and a lot of money. The outputs from our data analysis can help shorten that process and reduce the amount of time and money spent in finding these new traits and developing new products. That is one example. Another example are the craft brewers who have very complicated fermentation processes that fermentation science as it has been developed up to now cannot analyze effectively. If you understand what is going in inside the yeast cells as they produce the beer you have a much better chance at controlling these processes and making