Navigating the AI Tsunami in Pharma: Where Actionable Biology Separates Fact from Fiction

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“Yesterday has gone, tomorrow has not come, Let us begin.”

~ Mother Theresa
“Without big data analytics, companies are blind and deaf, wandering out onto the Web like deer on a freeway.”

~ Geoffrey Moore, Partner at MDV

“I think you can have a ridiculously enormous and complex data set, but if you have the right tools and methodology then it’s not a problem.”

~ Aaron Koblin, Entrepreneur in data and digital technologies
Embracing the challenge of new approaches....

“Insanity is doing the same thing over and over again and expecting different results.”

Albert Einstein

“You’ll never be bored when you try something new. There’s really no limit to what you can do!”

Dr. Seuss
Biology is Diverse and Complex..........
Innovation has to be balanced with economical solutions that improve outcome and cost.
**Medical Treatments**

- Disease-driven
- Aimed for normalcy (normal range)
- Additive
- “One size fit all”

**Medical Treatments**

- Individualized
- Multidimensional use of drugs
- Time-sensitive
- Space-sensitive
- Synergistic
Knowledge engineering is a complex and time consuming process, especially so in life sciences where our understanding of human disease regulation at the micro level is still limited. One approach that leads to more comprehensive knowledge is modeling of cause-and-effect molecular networks. We have been conducting it in a manual, “one gene at a time” manner for decades.

We know how to learn small well-observed systems. The field has spent decades learning context-free basic metabolic pathways.
Dr. Atul Butte MD, PhD
Priscilla Chan and Mark Zuckerberg Professor
USCF

AI is a tool
AI is a tool
We need to be HUMBLE to unravel complex biology
“The great tragedy of science - the slaying of a beautiful hypothesis by an ugly fact”

“Science is simply common sense at its best, that is, rigidly accurate in observation, and merciless to fallacy in logic”

“The deepest sin against the human mind is to believe things without evidence”

~ Thomas Huxley
"The best way to predict your future is to create it"

~ Abraham Lincoln
THANK YOU

Dedicated to the patients and families who make our research possible

And Darrell Abernethy, MD