

STANDARD DEVIATIONS: Recapitulating My Ontogeny

Greetings,

Is there anything worse than having to look at lousy pictures of somebody's baby?

Well, of course there is! But, lucky for you, I'm going with the lousy pictures!

It's that time of year when smarmy poseurs harangue us with their "**Best (*fill in the least interesting topic*) Of 2021!**" lists because they can't think of anything worth writing about. They are probably sick with COVID-19, sick of relatives, sick of eating sweets, or sick of trying to think of something new and interesting.

Not me!!

Sure, I'm sick of 2021 (2020 didn't do much for me, either) but I'm also looking forward to a new year, a fresh start, and a bright future. Uuuunnnfortunately.....I'm also a smarmy poseur. And since this is my baby, here are some lousy pictures (so lousy they're just words)! I'm condensing a "Best Standard Deviations Of 2021!" into a single phrase from each topic I attempted to explore this year.

Recall that we spent each month of '21 looking at a particular subject? Here is a recap:

- January - Mitochondria
- February – Eunice Rivers- Tuskegee Syphilis
- March - Madness
- April - Foolishness
- May - Mistakes
- June - Bugs
- July – Biosafety controls
- August - Fungus
- September – PPE, misc.
- October – FSAP (Federal Select Agent Program)
- November - Depression
- December – Time

And now, with great fanfare, deep regret, and a pinch of hubris, here is ***one take-away from each month*** that I have already bored you with once, and want to make sure you never forget (or forgive?). I hope these tags will stand alone, without explanation.



January - Mitochondria.

“A whopping 90% of all the oxygen you consume is used to fuel mitochondria.”-STANDARD DEVIATIONS: Hot under the Collar? 1-11-21

February – Eunice Rivers- Tuskegee Syphilis

“The evidence of racial disparity in American health care is incontrovertible.”- STANDARD DEVIATIONS: Who Is Eunice Rivers? Part 4 2-22-21

March – Madness

“We can mitigate risk into obscurity, but if we stop our vigilance, it will come back to bite us.” - STANDARD DEVIATIONS: March Madness – Out of Sight, Out of Mind? 3-22-21

April – Foolishness

“Safety in the laboratory requires us to anticipate that we will be fools. Some risks occur because we see things incorrectly and some because we can’t see them at all.”-STANDARD DEVIATIONS: Perception vs Deception 4-26-21

May – Mistakes

“We have engineering controls, and administrative controls and PPE controls to battle risk in our work. Perhaps the least-mentioned but most important safety control is our ability to understand risk and to act on that understanding before that risk becomes reality, and danger becomes disaster.

Expecting the unexpected is vital; so is preventing the preventable.”-STANDARD DEVIATIONS: Calamity Control 5-24-21

June - Bugs

“... bugs will survive. Guaranteed. They will be here long after humanity has found a way to go extinct. The same is true for



the pathogens we kill every day on our bench top. Tomorrow the threat will be back.

The decisions we make about biosafety on the bench are the choices we make to either persist or perish. Our decontamination protocols and pathogen awareness are critical to keeping bugs in their place and us in ours.”-STANDARD

DEVIATIONS: The Big Bug Battle 6-28-21

July – Biosafety Controls

“Removing all material from the BSC to clean may not always be practical. Tough. Routinely disinfecting the entire BSC is good laboratory preventive maintenance, and good biosafety.

The biosafety cabinet is simple, yet vital tool in our toolbox of engineering controls. Its safe use and function depend on our understanding, proper use, and care.”-STANDARD DEVIATIONS: Do You Know The Lab

Blowhard? 7-19-21

And, this...

“Vaccines are an engineering control that makes our work safer.

The ugly truth is that vaccine hesitancy is justified. A history of bad outcomes reminds us that the science of vaccines is neither fool-proof nor fully understood. Good science and good stewardship are necessary to ensure that vaccines provide protection.”- STANDARD DEVIATIONS: The Good, The Bad, and The Ugly 7-26-21

August – Fungus

“Pan-resistant *C. auris* is a canary in the coal mine for emerging resistance. Biosafety may be our best tool to battle this serious and emerging threat, if we can’t treat with drugs.

Contact precautions, hand hygiene, and environmental cleaning and disinfection are essential to preventing the spread of *C. auris*. These are the things we preach in biosafety and in



good laboratory technique on the bench.”-STANDARD DEVIATIONS: This Yeast is a Beast 8-16-21

September – PPE, misc.

“Handwashing is a work practice control that actually offers better protection because it removes the pathogen and disinfects the area, when performed correctly.

A recent study published in the August 17 edition of Physics of Fluids confirms that those magic 20 seconds of vigorous scrubbing are absolutely necessary to dislodge germs from our hands.”-STANDARD DEVIATIONS: Offhand Biosafety 9-06-21

October – FSAP

“But inspections are inspections. They all have value and promote good science. Maintaining secure inventory documentation, adhering to structured routines, ensuring instrumentation performance, and following best practices for safety and security are fundamental to any successful inspection.””-STANDARD DEVIATIONS: Watching Out 10-04-21

November – Depression

“Depression is a real and debilitating disorder. Alone it kills thousands of people across the country every year, and its effect on the sick is exacerbating a global pandemic. The best drug treatments are acting on the neural junctions and neurotransmitter concentrations. But the underlying cause(s) and the mechanisms of therapies in depression are still enigmas. We are still in a scientific infancy with our understanding and knowledge.””-STANDARD DEVIATIONS: The Other Elephant 11-08-21



December – Time

“The biosafety message here is that we mustn’t forget the past. Our understanding of risk requires that we constantly be vigilant and prepared for exposure to occur. Every time we don gloves, lab coats, and safety glasses it’s not because the pathogens come and go; it’s because they are always there.”-

STANDARD DEVIATIONS: Forget Forgetting 12-13-21

The original intent of today’s newsletter was to get out of thinking and throw something together slap-dash to shove out and be done with. Turns out that I had to go through every edition and rethink everything I had written for the entire year.

Sitting at the kitchen table pondering this daunting chore, my lovely wife, and editor, asked if I was okay?

“Sorry, I was lost in thought,” I said.

“Hmmm, sounds like unfamiliar territory,” was her astute reply.

Have a great week and be safe,

Bryan

We may not be eternal but hope is.

