



# Utopia

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**H**undreds of years ago, Thomas More described a crescent-shaped island where possessions were communally shared, believers of all religions were tolerated and respected, all walks of life could achieve education, the sick were cared for, the strong carried the weak, and all lived in peace and harmony through a deep communal mindset that prevailed for the good of the community. This island was named Utopia.<sup>1</sup>

Utopia brings to mind platonic philosopher-kings and the simplicity and serenity with which society can operate. A clean, chrome world devoid of the coughing smog of multilane highways, whose milk cartons would never display the faces of vanished children. A world in which issues of public transportation, education, and green energy would have been resolved. The modernity of a global society absolved of the ills with which it coexists,

of the ills from which it came into existence. Perfection actualized. *Utopia* is from the Greek—the combination of *ou*, meaning no, and *topos*, meaning place. A perfect, congenial, ideal world. An asymptotic state. A visage of society that by its very definition can never exist.

## Sepsis

“Mask and goggles. Let’s get to it,” called the attending. Pointing to his medical student he shouted, “The lungs. What do they sound like?” The man was coughing violently, gripped by raging COVID-19 infection.

Preparing to lay the head of my stethoscope upon his chest, I looked down to see a thin layer of skin tightly vacuum-sealed across rolling hills of ribs. I’m sure his sense of taste was long gone by now. How long has it been since he’d eaten? Just looking at him, I could see he was an older man—gray-haired and fragile—but a pause came over me when I saw that he was born the same week as my father. I bet they could swap dramatic stories about where they were when Kennedy was shot. Maybe they had even crossed paths.

Lung auscultation in the emergency department felt like an oasis amidst an otherwise chaotic domain. “Coarse breath sounds with crackles bilaterally,” I reported—exactly what I had expected. The man on the bed, turning his vision toward me with a distant, acquiescent gaze, choked out between coughs, “Am I going to die?”

I had read about sepsis before. In my pre-clinical years of medical school I saw it from the academic perspective. How the intricately complex inflammatory response transitions from a highly organized microbiologic defense system into a chaotic cascade that ends with the fluid squeezing out of the blood vessels until the body begins to break down.

“Dexamethasone. Now,” demanded the attending.

I stared at this man, watching his body shake from fear, or chills, or maybe both, hearing the cellophane crumple of his lungs, seeing the sweat pool at the tip of his nose and drop to the plateau of his chest. Suddenly the immense amount of scientific knowledge I had accumulated over the last few years felt simply inadequate, evaporating from my mind as I watched the man shiver and groan. Without the power to intellectualize and distance myself from what I was experiencing, I could only see a horrified man, and feel horror for him.

Despite knowing his chances of living at best were a coin flip, I asserted, “You’re going to be just fine, sir,” before patting his wet clump of hair in an attempt to console him. Out of his mouth trickled a whimper, “Thank you,” as his body descended into another round of shaking chills.

“The ICU bed is ready. Let’s get him ready to move,” instructed the attending. A mechanized pit crew encircled the patient, disconnected the numerous room monitors and prepared the patient for transport. In an instant, this man was shipped away, leaving his room empty except for a few hanging wires, slowly swinging inaudible pendulums.

## June 2020

Medical students and physicians don their white coats in solidarity with the masked huddled masses in the seething heat of the North Carolina 2020 summer. Sweat coats our bodies in a thick uncomfortable film, condensing around our cheeks and noses, ruining the seals of the N95 masks we had kept from our shifts at the hospital. In the pockets of my damp white coat are two bottles of water, a few sheets of gauze, and ballistic goggles. Police were omnipresent, seemingly occupying every available vantage point.

Winston-Salem is a quiet town. But other quiet towns had seen protesters struck down by rubber bullets and blinded by tear gas.

Standing in the street 10 yards ahead of us, was a man, wearing a hat covering the back of his neck to protect him from the sun. Perhaps hundreds of eyes were fixed on him. In his hand was a megaphone to lead a series of call-and-response cadences. A hive mind of civil unrest.

At once, the man with the megaphone ordered us to take a knee, bringing our bodies even closer to the radiating pavement. A thick drop of sweat pooled on my forehead and fell to the asphalt. Still adjusting to the N95, I breathed doggedly through the mask. From above me, I heard a bizarre metallic drumming and saw the man with the megaphone raise his arm to a brutalist, rust-colored building with small slits for windows. Just enough to know if it is light outside.

“This is for them!” he called. In the following moments, we realized he was pointing to a metal box congested with human bodies during a global pandemic. The crowd was banging their fists against the walls in solidarity. Land of the free. Guttural cries were released for a man who was murdered with a knee on his neck, driving his face into the summer asphalt.

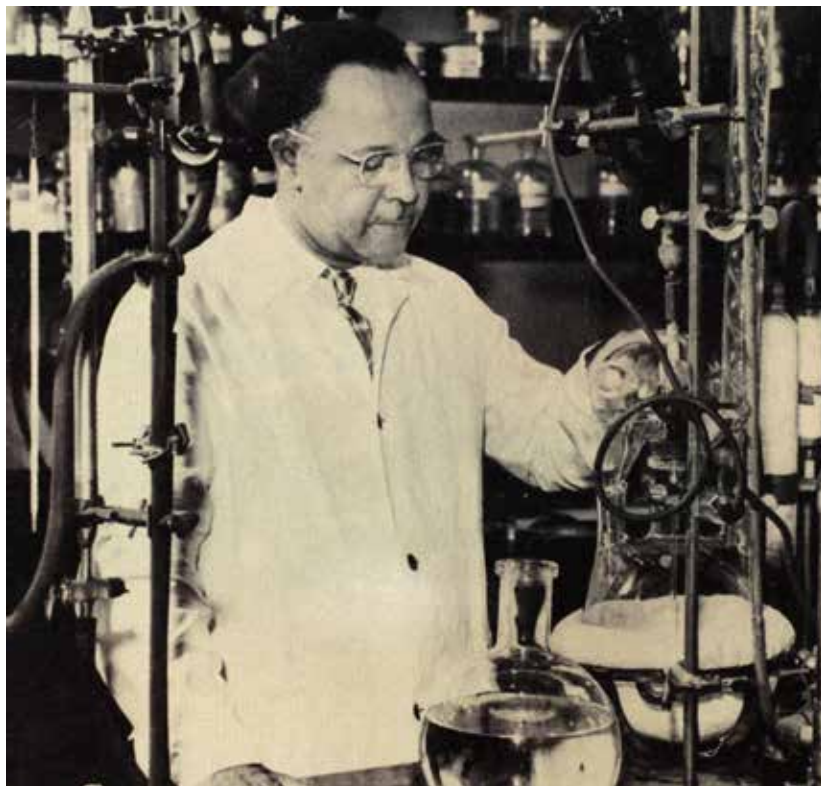
Three weeks after the murder of George Floyd, *Nature* would publish the breaking news that dexamethasone is the first confirmed life-saving drug for those suffering from COVID-19. Two seemingly independent occurrences, in a summer of chaos, were deeply intertwined in a story much older than either Floyd or COVID-19.

## Dexamethasone

A steroid derivative of cortisone. A life-saving drug for COVID. Originally discovered to have clinical utility by Philip Hench (AΩA, University of Pittsburgh School of Medicine 1925, Alumni), Charles Slocumb, and Howard Polley (AΩA, The Ohio State University College of Medicine, 1967, Alumni) in their experience of caring for patients with rheumatoid arthritis.

In his speech to the Nobel Committee in 1950, Hench addressed the potential of cortisone as a revolutionary drug in the management of rheumatic diseases.<sup>2</sup> He also noted the scientific leaps and bounds necessary to make cortisone a relevant treatment for disease.<sup>2</sup> At the time, Lewis Hasting Sarret’s 36-step process to create cortisone required bile from 2,500 cows to make little more than a single tablet.<sup>3</sup> The field of biochemistry required a significant step forward to craft an inexpensive process for manufacturing cortisone.





**Percy Lavonn Julian (1899-1975) an African-American research chemist and pioneer.** Science History Images / Alamy Stock Photo

Dr. Percy Lavon Julian, a Black biochemist, proposed isolating sterols from soybeans. His revolutionary process to synthesize corticosteroids on a massive scale transformed cortisone and its derivatives from fantastic to realistic, revolutionizing the field of rheumatology, and saving countless patient lives.<sup>4</sup>

Julian, the grandson of a slave, was born to James and Elizabeth Julian, whose deep value for education led their son to academic success at DePauw University. There, he would be accepted to the Phi Beta Kappa honor society and achieve the rank of valedictorian for his class.<sup>5</sup> He maintained this academic performance despite experiencing rigid racial stigma in Greencastle, Indiana, being forced to live in an off-campus boarding house that refused to serve him meals. He later found refuge in a fraternity house, where he waited tables and performed odd jobs in exchange for a bed in the attic and the option to eat at the house.<sup>5</sup>

Julian would continue his studies at Harvard University, earning a master's degree in chemistry.<sup>6</sup> Due to criticism that White students would not accept a Black instructor, Harvard rescinded his doctorate (PhD) candidacy, forcing Julian to accept a position in Europe at the University

of Vienna where he enjoyed greater racial inclusivity amongst his colleagues.<sup>7</sup>

Upon returning to the United States from Austria, Julian and his classmate Josef Pikl took positions in the Department of Chemistry at DePauw, though Julian experienced racial barriers to achieving professorship that Pikl did not.<sup>6</sup> After four years of research work, no success at obtaining professorship at DePauw, and numerous developments on the derivation of physostigmine from plant sterols, Julian was offered a job at DuPont. Despite Julian's superior accolades and accomplishments, however, the job offer was quickly rescinded and extended to Pikl.<sup>8</sup> In a letter to Julian, DuPont apologized, stating that they were, "unaware he was a Negro."<sup>6</sup>

After being rejected by DuPont, Julian sought employment at the Institute of Paper Chemistry in Appleton, Wisconsin. Though he demonstrated sufficient qualifications, he did not move there since Appleton was a sundown town with a statute proclaiming, "No Negro should be bed or boarded overnight in Appleton."<sup>9</sup>

Because of these overt signs of racial intimidation, Julian opted to work for Glidden, in Chicago, where his development of cortisone from soybean would crystallize.<sup>10,11</sup>

Despite his scientific accomplishments, he would appear in the headlines of national newspapers for completely different reasons. On a Thanksgiving eve, a *New York Times* headline read, Arson Fails at Home of a Negro Scientist. Dr. Julian would experience similar publicity after an attempted dynamite attack on the same home the following June.<sup>11</sup>

Julian's story is one of science as well as one of race. He achieved notable scientific success despite the ever-present racial gravity facing Black Americans. He experienced discrimination so entrenched that it necessitated moving to another continent to complete his education. He experienced workplace discrimination that prevented him from imparting his knowledge to others. He also experienced ubiquitous police intimidation that prevented a Black man from peacefully existing in an entire town.

Julian's experiences bring into sharp focus the dichotomy between the treatment and contributions of Black Americans in 2020 and the discovery that Julian's

contribution to medical science is the first drug discovered to prevent death in a global pandemic.

The post-pandemic society survives on the discoveries of a Black scientist. Rather than ignoring the problems of police brutality and systemic racism against Black Americans, we as a nation must aggressively identify these ills and meaningfully engage with the necessary remedies in such a way that does not result in tense confrontations with asymmetrically armed police forces. We must address and disassemble the sociopolitical systems that have culminated in generations of fear and racial distrust, and the medical community must stand in resolute and unwavering support of such remedies.

### **America, the Utopia**

In 2020, Americans achieved self-consciousness. When we came to see the true meaning of Utopia, not as an optimistic, advanced future, but as the city on the hill that can, but never will exist.

**As we march for Justice**

**Breathing through salty wet filtered cloth**

**Reflecting on the last 56 years**

**And those who marched before**

**Facing rows of armed police**

**In America, the Utopia**

**I wonder-**

**What has changed?**

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