

/A·nas·to·mo·sis/

n. A connection between two normally divergent structures. From the Greek *anastomoun*, to provide with a mouth.

Letter from the Editors

They say that learning to practice medicine is like learning a new language. They say that in four years of medical school, we learn 15,000 new words.

What they don't tell us is that learning the language of medicine doesn't stop at figuring out how to pronounce "membranoproliferative glomerulonephritis" or spell "l-e-v-e-t-i-r-a-c-e-t-a-m." Instead, this new language shapes our perception. It changes how things look, sound, and feel.

Think back to the first anatomy lab, when arteries felt exactly the same as veins and nerves; or the mad scramble to simultaneously listen to the histology lecturer and Google the phrase "umbrella cell". But soon enough, we start to forget a time before tissue slides looked like Impressionist paintings. We begin to see the Orphan Annie eyes and tram-track basement membranes. Identifying a systolic ejection murmur becomes easier than describing it.

In this issue of *Anastomosis*, we invite you to consider and play with the intricate relationship between language and perception. Can you look beyond the constrictor and dilator muscles of the iris to appreciate the hundreds of shades in an eye? What is the sound of a verapamil woman's heart? What was dying like before Walgreens?

We've thoroughly enjoyed working on this issue with our wonderful collaborators, and we hope that you will enjoy reading it as much as we have enjoyed putting it together.



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Table of Contents

1 Evergreen
Elizabeth Beam

6 A Passion of the Heart
Nischal Acharya

2 Hatti's Eye
Milli Trimm

7 Bitter White Hope;
Unbroken Surface
Jane Thomas

4 Lessons in Uncertainty
Emmy Shearer

9 Two White Coats
Lillie Reed

10 hOw
Georgia Toal

15 The Ironies of a Doctor
Vivian Ho

13 My Sister
Milli Trimm

16 Body as Tool
Jonathon David Tijerina

14 Sinoatrial
Vivian Ho

17 Californians Love
Gorillas in String Bikinis
Nick Love

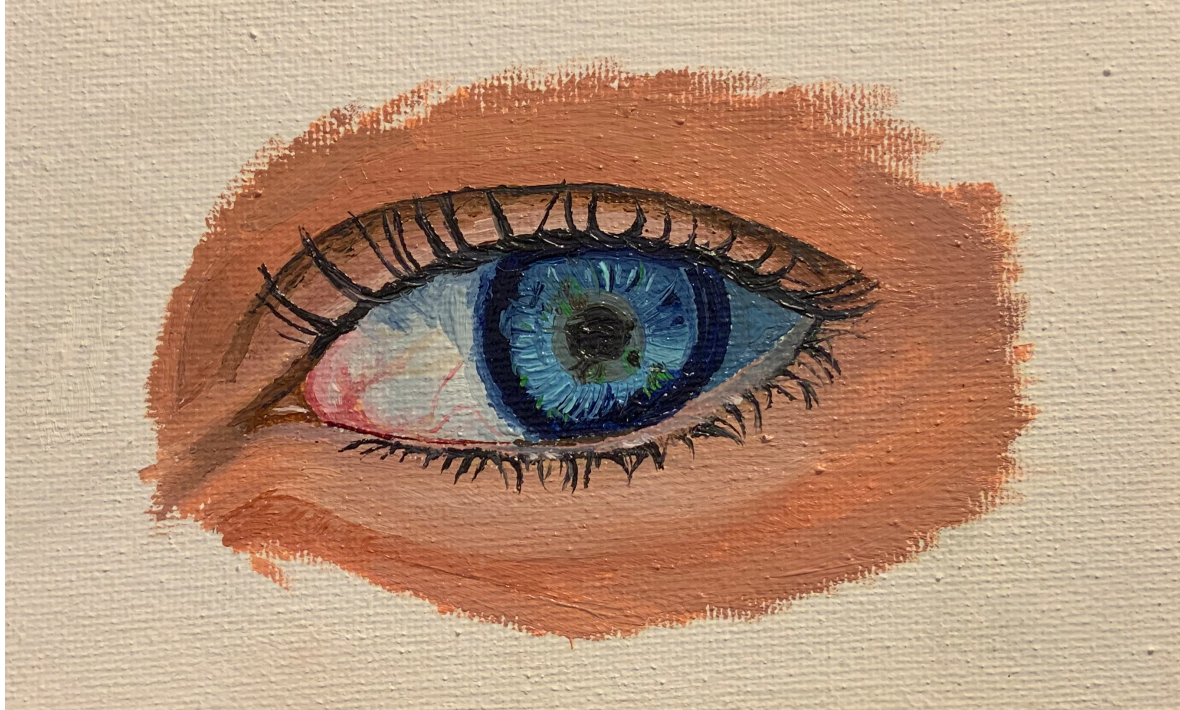
Retire to Ohio for a drugstore getaway.
Pack in like pickles among the plastics,
The pops and pills; bask in fluorescence;
Desiccate the organic; out-science decay.
On cheat days, splurge on cigs they sell
Behind the check-out (for public safety).
Purchase years of life back aisle by aisle
Stocked with anti-aging serum, energy gel,
And a technicolor vegan vitamin gummy.
Cash in overtime nights on the factory floor
Until it's us that's been manufactured.
Time is cheap. It's youth that ain't free.
What was dying like before Walgreens?
In pre-drugstoric lore, bodies would mature
Inch by inch with birthdays in the backyard
Until bowing to the final tick of love's machine
We up and fell. We've since salted our lawns,
Sanitized the seas, scorched the last forest.
Death is dead, sealed in bottles of antiseptic,
Save the hint of pine-fresh ash on our yawns.

Elizabeth Beam is a third-year Neurosciences PhD student in the MD/PhD program at Stanford.

Hatti's Eye

Millie Trimm

2



The human eye has inspired artists, scientists and doctors for centuries. It can detect light at the resolution of a single photon and convey a world of emotion with a single glance. Although I've long admired eyes, I didn't have a full appreciation for their aesthetic complexity until I tried to paint one. Hundreds of shades went into this particular painting of my sister Hatti's "swimming pool" eye, and so it's funny to think that we often just reduce them to a single color.

Millie Trimm is a first-year medical student at Stanford.

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It is this readiness to
sit with uncertainty
that, somewhat
ironically, makes the
inevitable unknown
feel okay.

Lessons in Uncertainty

4

Emmy Shearer

I don't know if I have ever felt so illiterate, or so clumsy, as I did during my first few months in the Stover lab.

The first time I went in to complete an experiment on my own – a Saturday morning in early September, the first of many my sophomore year – I naively promised my roommate that I'd be back to take her grocery shopping in a few hours. 80 minutes in, zero steps done, and four ruined buffering solutions later, I remember blankly peeling off my blue latex gloves as I stomachached a disconcertingly familiar feeling: I had underestimated what I was in for.

As a distance runner, I had experienced this sensation many times prior. It usually came 2 or 3k into a 5k race on occasions that, for whatever reason, I had been bold enough to start out at a pace quicker than I ever had before. On these race days, I knew the last few miles would inevitably be painful: lactic acid build-up, glycogen depletion, and ventilation-perfusion mismatch in my lungs would assure that. But years of racing had also taught me that even worse than those last few thousand meters would be the realization – that first inkling of knowledge – that I had put myself in a difficult position, and that there was no way out other than to simply

bear it out. To reach deep inside of myself for a solution that must exist. To lean on myself, to rely on my training, to find a way to the end.

The similarity of these two feelings, I thought as I sat emptily at the bench that day, was uncanny.

As time wore on during that long sophomore year, I gradually gained fluency in the language of our lab. I learned the techniques I needed to carry out my projects, to adapt experiment protocols, and to troubleshoot when things did not go according to plan. I learned how to ask for help when I needed it. I found myself beginning to enjoy late nights or weekends in the lab by myself, listening to the dull whir of the incubators as I meticulously set up reactions and pored over results.

Years later, when I was pursuing a master's degree at the University of Cambridge, some of my fellow Americans would at times poke fun at the hands-off, "here's your library card" approach that characterizes the British educational system. "Why let every single student reinvent the wheel themselves?" I remember one asking late one night, after we were two pints deep at the local pub (the same one, incidentally, where Watson and Crick allegedly celebrated discovering the

double-helix). “It’s so inefficient. If there’s already an established literature, why not just send that out as the reading list?” Though I was there studying public policy, not hard science, I had a feeling it was my experiences at the bench – and on the track – that held off my laughter those nights just a bit longer than the others.

Now when I wear blue latex gloves, I wear them in a hospital – one 3,000 miles away, no less, from the dimly lit third floor in Savage Hall where I first tried them on. Though my bench research years are, for now, over, I feel those long days in lab tapping inside of me still – like a metronome in my unconscious that beats on.

My time in the lab – like my time on the track – enhanced my ability to problem-solve and adapt in ways my taught courses could not. It showed me the importance of precision, foresight, and direction in applied work; the humility that comes with repeated failure; and the simple joy of finally getting it right. It taught me to take pride in my professional work, and to be creative in my application of knowledge. Indeed, it was through wet lab research I began to think of the hard sciences as imaginative and exciting – it was the humanities, I felt in those days, that were overly methodical and exacting.

But most of all, what both bench science and distance running gave me is a willingness to be comfortable with, and even embrace, unfamiliarity. A willingness to, for lack of better words, be uncomfortable. And in a world where few, if any, patients are ever “textbook” cases, and there isn’t, nor ever will be, an answer key posted online, it is this readiness to sit with uncertainty that, somewhat ironically, makes the inevitable unknown feel okay.

Emmy Shearer is a fourth-year medical student at Stanford, who ran competitively before medical school.

A Passion of the Heart

Nischal Acharya



Nischal Acharya is a Clinical Research Coordinator Associate in the Departments of Neurosurgery/Neurology at Stanford University.

Bitter White Hope; Unbroken Surface

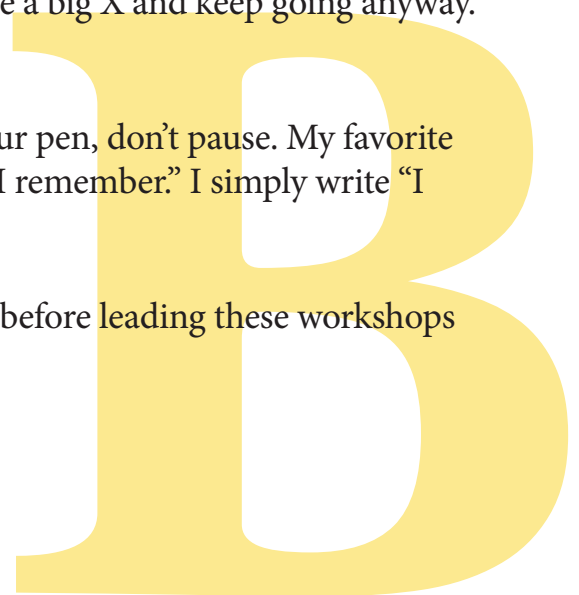
Jane Thomas

In San Miguel de Allende, I attended a poetry workshop led by the poet Judyth Hill, and learned the technique she calls “Wild Writing.” I began writing every morning, cup of coffee in hand, working to reel my mind back from the brink and onto the blank page. Later when I worked as a counselor at McLean Hospital, Harvard’s psychiatric hospital, I passed along the technique to my patients. At Stanford, I decided to teach this style of writing to psychiatric inpatients in the context of a research project aimed at studying the utility of the workshop as a psychiatric intervention.

In the poetry workshop, I offer three suggestions with the goal of setting aside the inner critic and learning to create freely, knowing that you can always come back to the piece to edit later:

- 1) If you cannot think of a particular word, then write a big X and keep going anyway. You can fill in the word later when you think of it.
- 2) Do not cross out words.
- 3) Most importantly: keep going! Don’t put down your pen, don’t pause. My favorite go-to phrase when creating a first draft of poetry is “I remember.” I simply write “I remember...” then fill in the blank.

The following pieces are my own wild writing— one before leading these workshops and one after.



Bitter White Hope

Don't tell me I haven't surrendered.
Don't tell me the Inside Place is bundled in self-will,
strangled in swaddling cloths.

Gulped down with the first morning sputters,
Mouth scalded by bitter hope, choked down with grainy
grounds.

This is a thin, peeling veneer of maybe-it-gets-better,
and that's-better-than-nothing.

She said six weeks. Six weeks. I can wait six weeks.
Five weeks, six days. I can wait five weeks, six days.

How can there be a little white pill to treat sin?
This, then, cannot be sin.

What's once God's remains God's,
That cannot be undone,
Though it may yearn for its own destruction,
What's once surrendered cannot be taken up again.

Jane Thomas is a second-year medical student at Stanford and founder of the Poetry Workshop on the inpatient psychiatric units.

Unbroken Surface

It was a gritty fight to keep the quiet
But the lake is now so smooth.
The fish of thought flit near the top,
But the surface does not move.

The smell of lilacs floats across
the surface---soft and sweet.

A stellar jay is in the distance, singing in the trees.
I stoop to scoop a handful of mud to see what surprises I find.

The osprey soars and dips and flips and knows no limits
in the properly medicated mind.

Two White Coats

Lillie Reed

Stiff with ceremony and smudged with coffee, my white coat engulfs me and my thrifted professional clothes. It feels somehow too big and too small — as ill-fitting from the inside as it is from the out. And try as I might, I can't flatten out the wrinkles.

In the clinic, the coat is a pleasant lie I tell “my” patients. It is a promise I can't keep — an insincere reassurance that I will save the day. Like an over-starched great white whale, it swallows me whole. This white cape — I mean, coat — a savior complex cast upon me, trapping me like a heavy net.

I can't take it off, and I drown in it.

As I pull on the coat, do I push the patient away? This decoration creates distance and hierarchy where I want there to be closeness, comfort, sameness. But you can't argue with statistics: The white coat makes patients feel better. It inspires trust and confidence. Patients are comforted by a white coat in the room. But it might as well decorate a chair. A white coat can do more than I can.

It feels disingenuous. It feels unearned. It feels familiar.

It feels like a lie I've worn before.

“Mzungu!” Stage whispers follow me as I follow through the crowded Malawian hospital wards. Four, five, six children to a bed. Children with watermelon tumors growing in their bellies, with no surgeon or money to act. Diagnoses overlooked because there aren't enough doctors to look for them. People who had walked miles to care, only to wait for days or be turned away. Children whose

9

hearts were born with holes in the wrong places, born in the wrong places to fix them. People dying of nothing but circumstance — right in front of me.

It feels somehow too big and too small.

Doctors, nurses, patients ask me for my advice. They hand me equipment, and needles, and children — deaf to my protests. “I'm not a doctor.” I say it more than my name. “I'm just here to learn. I can't do anything.” But generations of imperialism, of missionary medicine, of colonialism disguised as humanitarianism done by people who look like me cannot be undone in a few quick words. The patients are relieved. A real doctor has arrived. Not A Doctor, the most sought-after physician in Lilongwe.

And try as I might, I can't flatten out the wrinkles.

All I can do is smile and nod, share moments and candies and hold the little fingers that reach up for mine. Parents clasp their hands, bend their knees, bow their heads — grateful, before I can explain there is nothing to be grateful for. I am nobody — no doctor, no donor, no answer to their prayers. I can do nothing.

I can't take it off, and I drown in it.

I hand the babies, the equipment, the syringes back to their rightful owners. But each day I receive new gifts I can't return — hopeful smiles, gracious thanks, grateful nods I don't deserve. And though I can do nothing, they are reassured by me simply being there — comforted by the presence of my white coat.

Lillie Reed is a first-year medical student at Stanford. Prior to medical school, Lillie worked in global health, largely focusing on improving clinical care and community health in Malawi and Zambia.

hOw: Part 1

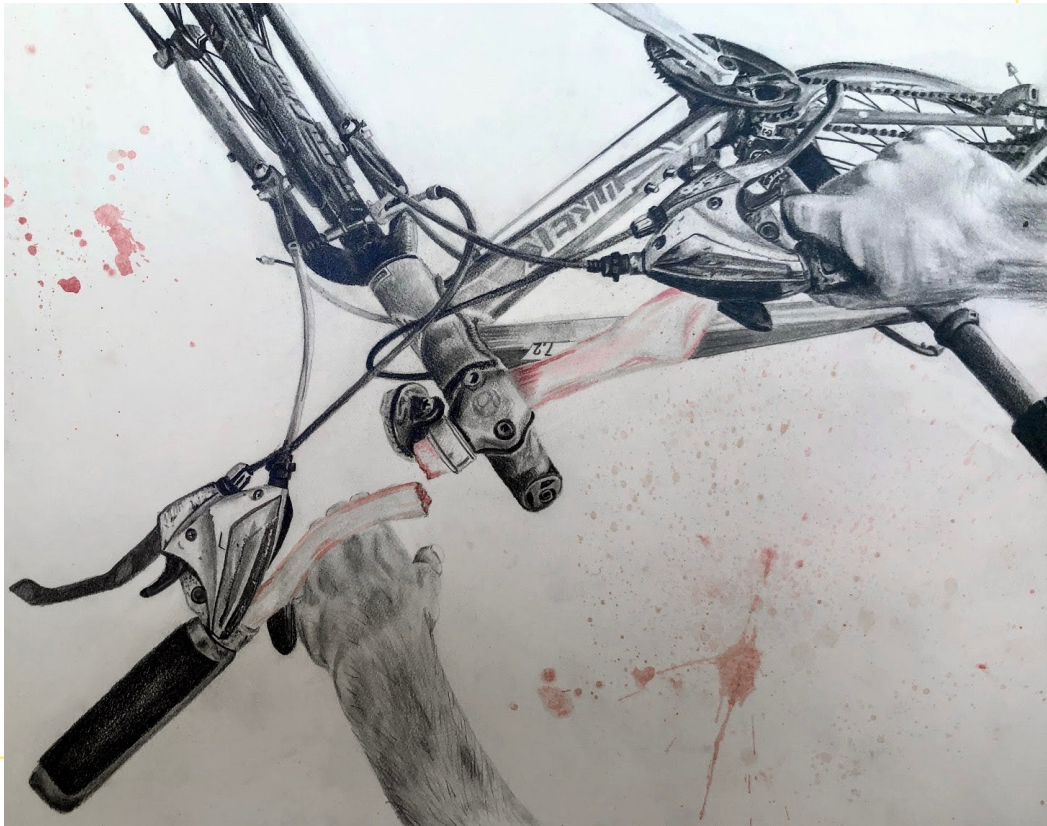
10

Georgia Toal

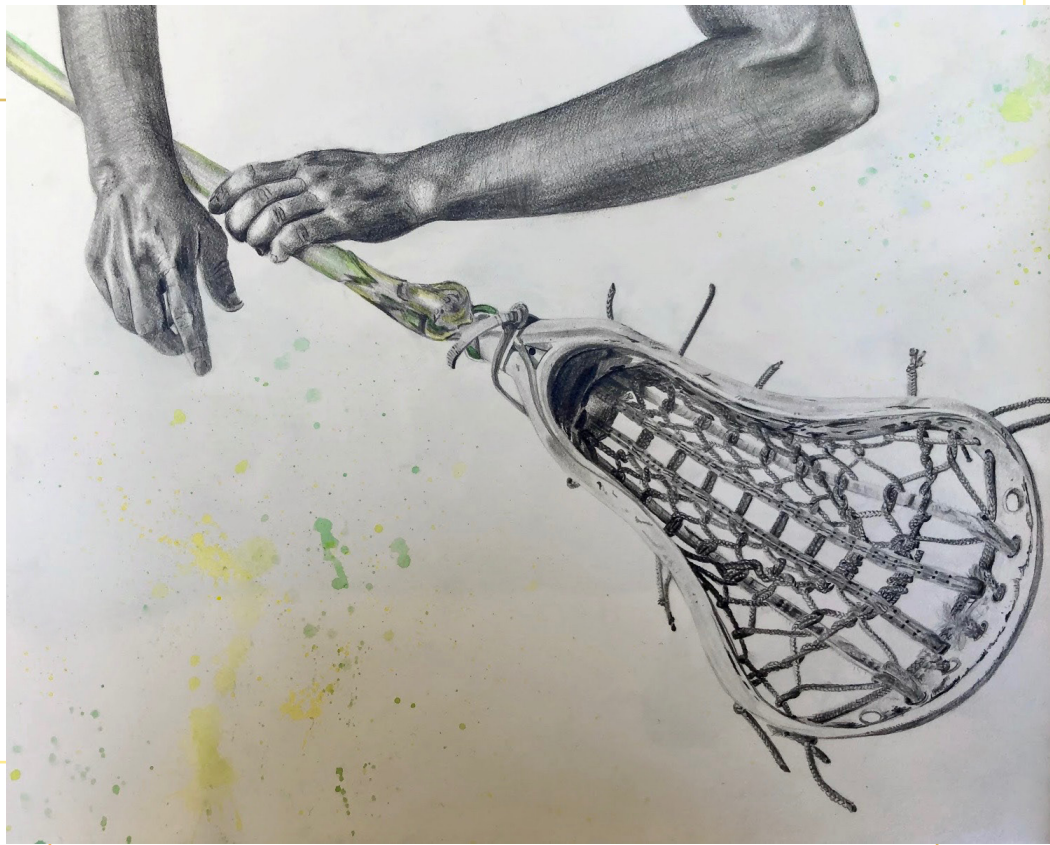


Georgia Toal is a second-year medical student at Stanford.

hOw: Part 2



hOw: Part 3



My Sister

Millie Trimm

13



I started this painting of my sister on the beach in Florida a few weeks before coming to medical school. Since then, my life has completely changed and I'm the furthest that I've ever been from my family. Although it's been tough to find the time to paint in-between learning the extensors of the upper arm and getting to know my amazing classmates, every time I put brush to wood I am reminded of the humanity behind my new identity as a medical student. We all have people, places, and things that we love that extend beyond medicine and the borders of campus. This painting is a personal reminder of that fact and a little piece of home.

Sinoatrial

Vivian Ho

14

S

Masked in t-shirt, from stretched canvas
shook the quiver rhythmic
too fast to be an ocean wave
 too slow for birds' wings
She, the unrelenting rhythm
pulsing from the dark forest floor
un stopping marching
having never seen the outside bright
She resides in buried brush, the rhythm the trees breathe
She, having conducted symphonies
Within chemo-chiseled chests
She, having journeyed alongside two-year-old boy
muffled words mouthing "congenital"
or verapamil woman, She, superhero by day
She kept beating, willfully or not
bound to no constraints but her own freedom
She, nourisher of the arterial forest
Their leaves reaching toward the light.

Vivian Ho is a second-year medical student at Stanford.

The Ironies of a Doctor

15

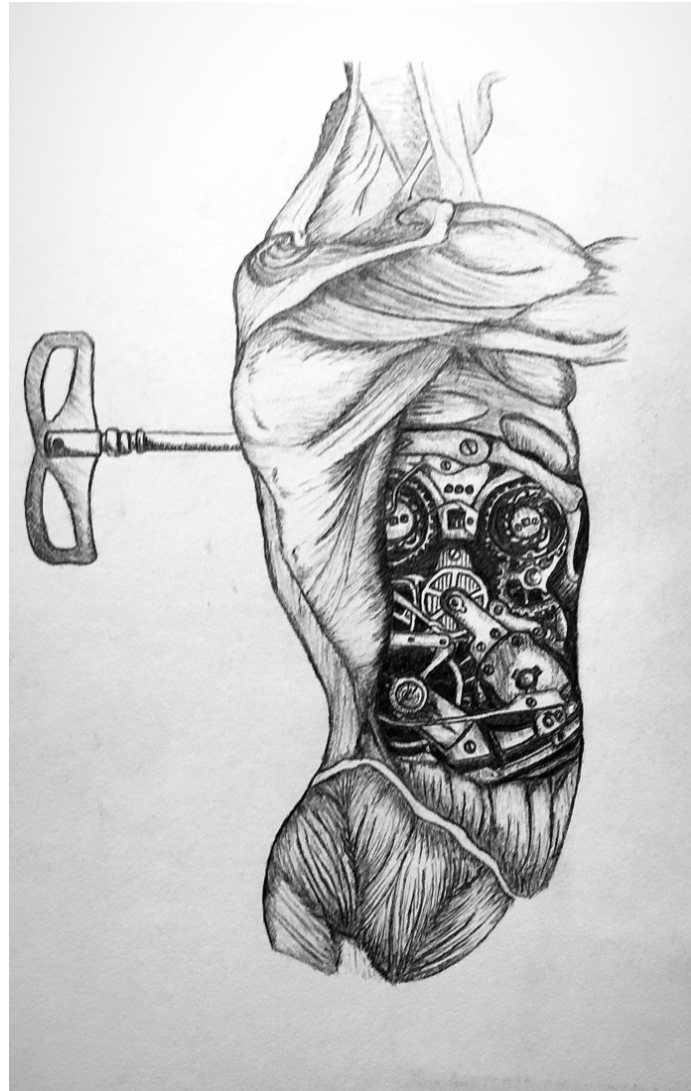
Vivian Ho

too many days I take residence in my mind
confined, a place to stay but not to rest
the flight, active kitchen drawers opening and spices
spilled
on the counter I am constantly cleaning up
my half-baked goods embodied as the taut leather
on my shoulders, repository of heavy thoughts
yet broken-necked and kinked slightly
I treat the same manifestations in others
as that which pains me. blatantly human
we the sufferers of mental mirages
and bodies temporary flesh
dissipate into sand while we grasp
at the grains dancing through our fingers
lost in the world that is the mind

Body as Tool

16

Jonathan David Tijerina



Jonathan Tijerina is a fourth-year medical student who enjoys sketching, cooking fancy things for his friends, and going on trips planned by other people.

Californians love gorillas in string bikinis

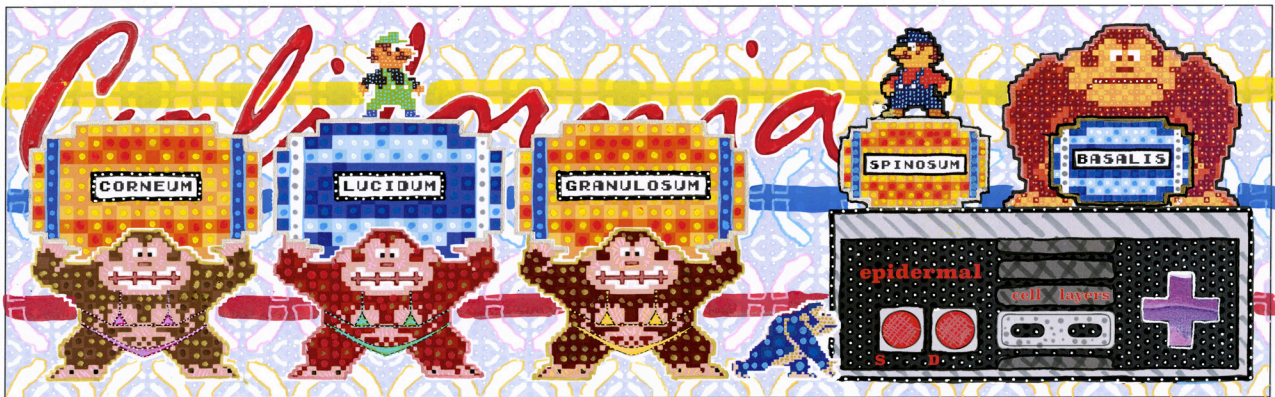
Nick Love

The epidermis is the outer most layer of the skin and is composed of distinct layers, in which certain pathologies can manifest. From superficial to deep, these epidermal layers, called “strata” (singular “stratum”), are the stratum corneum, lucidum (found only on the “acral” surfaces i.e., palms and soles), granulosum, spinosum and basalis. By taking the first letter of these strata, one generates the often cited mnemonic shown here. I was drawn to this mnemonic due to its referencing our school’s location as well as my childhood memories playing Donkey Kong. Like other quasi-risque medical mnemonics, however, I wonder if its days are numbered.



Nick Love is a final-year medical student at Stanford.

histological layers of epidermis,
superficial to deep:



**Californians love
gorillas in string bikinis**

