

KATE McGOVERN

Farrar Straus Giroux * New York

Farrar Straus Giroux Books for Young Readers An imprint of Macmillan Publishing Group, LLC 175 Fifth Avenue, New York, NY 10010

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1 3 5 7 9 10 8 6 4 2

fiercereads.com

Library of Congress Cataloging-in-Publication Data

Names: McGovern, Kate, author.

Title: Fear of missing out / Kate McGovern.

Description: First edition. | New York: Farrar Straus Giroux, 2019. | Summary:

Despite the loving intentions of her mother and boyfriend, sixteen-year-old Astrid wants to make the decisions about her life and death when her cancer returns, including exploring the possibility of cryopreservation.

Identifiers: LCCN 2018020372 | ISBN 9780374305475 (hardcover)

Subjects: | CYAC: Terminally ill—Fiction. | Cancer—Fiction. | Choice—Fiction. | Cryonics—Fiction.

Classification: LCC PZ7.1.M43524 Fe 2019 | DDC [Fic]—dc23

LC record available at https://lccn.loc.gov/2018020372

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Any sufficiently advanced technology is indistinguishable from magic.

—ARTHUR C. CLARKE

I'VE ALWAYS THOUGHT AN ASTROCYTOMA

sounds like a shooting star. Right? Like something you'd want to watch from the roof of your house or the top of a really tall hill, probably lying on your back on a wool blanket and eating popcorn. On the news, they'd be all like, "Don't miss the astrocytoma shower tonight! It'll be most visible from nine to midnight, weather permitting. Once in a lifetime!" You'd lie there on your back on the blanket, waiting for it, and then it would cross the sky over your head and you'd think, "That's the *brightest, most beautiful* astrocytoma I've ever seen."

And it would be.

"Astrid. Astrid."

I blink. There are tiny bursts of light swimming at the corners of my vision. My astrocytoma.

An astrocytoma is not, in fact, a shooting star, though it

should be. It's a brain tumor, made of star-shaped cells. Astrocytes. Things of beauty, and instruments of death.

I blink again and my mother comes into view in front of me. She was sitting next to me a minute ago, and now she's hovering over me, her face too close to mine. "Astrid?"

Yes, my tumor matches my name.

"Yeah?"

"Did you hear Dr. Klein?"

My mother's face is splotchy. Her eyes are rimmed in red. I look from her to Dr. Klein, who's giving me her Serious Face.

"I'm sorry, guys," Dr. Klein says, clearing her throat. "I wish I had better news."

Poor Dr. Klein. I shouldn't be thinking about her feelings right now, but I am. Dr. Klein likes me. She already saved me once, when my brain first got tumored. Ninth grade. There was the surgery to remove it, and then the radiation, and then the chemo. It took nine months—my mother likes to say it took the same amount of time to start my life as it did to save it—and then everything looked good for a while. Like, doesn't-happen-that-often, almost-enough-to-make-you-believe-in-God good.

I don't believe in God, though. I believe in science, and there's a reason for that. Science is a kind of miraculous thing of its own, miraculous enough to make a star-shaped tumor go away for two years, which a lot of people said was impossible. But science is also reality, and it can only do what it can do. And now, according to the scan we're all staring at on Dr. Klein's computer screen, science has run up against its natural limitations.

That's my *brain* on the scan. My brain, the traffic control center of everything that makes me me. Just staring back at us in all its light and shadows. It never gets old, looking at a human brain.

Dr. Klein swallows. "Astrid, you know how to read this scan. I don't need to tell you what it says."

She's correct. The thing Dr. Klein did, besides saving me the first time, was make me love the brain—which, if you think about it, was pretty badass of her, considering that I had only recently come face-to-face with my own brain's potentially fatal flaws. She let me do an internship in her lab this past summer, and since my hair had mostly grown back by then, no one in the office knew I'd been one of her cancer kids just a year earlier. I was just a high school student with an interest in neuroscience, and she let me look under the microscope at slivers of normal and abnormal brain tissue, at scans just like this one, for patients with all kinds of astrocytomas and gliomas and medulloblastomas.

So she's right—I can read this scan. And it is not a good one. There's my brain, both hemispheres, and right there at the base of the brain stem, a foreign object of my body's own making: a jellyfish, a bubble floating away from a child's liquid-coated wand, a bright asteroid. A tumor made of stars.

"So where do we go from here?" Mom has her notebook out, the thick black one that's fraying at the corners, her keeping-track-of-Astrid's-cancer notebook. She clicks her ballpoint pen into action. My mother expects that there is always somewhere else to go from here.

I wait for Dr. Klein to break it to Mom: Do not pass go. Do not collect two hundred dollars. There is nowhere else from here.

"We can try more chemo, right?" Mom pushes.

"Yes, we can try a new drug combination. The options have improved somewhat in the last couple of years. There are no guarantees, but . . ." Dr. Klein hesitates. "There is one other thing that I think has some promise."

Not what I was expecting.

"There is a clinical trial launching in the spring, for an experimental immunotherapy that targets Astrid's particular type of tumor. You may be a good candidate for it."

I feel Mom's body physically lighten next to me, like she's about to levitate. "Okay," she says, her voice shooting up an octave like it does when she's excited. "Okay! We can do that. How do we get her into that? You can get her in, right?"

"I don't want to get your hopes up, guys. I need to be honest with you that this is . . . a long shot. At best. First we have to do more testing to make sure Astrid is in fact a candidate. Then she would have to be accepted—they'll look at a lot of factors to make sure she is healthy enough, relatively, to be part of the trial."

"So I have to be healthy enough to take part in a clinical trial for a cancer treatment?"

Dr. Klein cracks a smile. "I realize that's a tad ironic. But yes. That's why we'll do a chemo regimen regardless. Look, obviously, it's a trial. Some patients will receive the treatment; others will receive a placebo. We won't know which one Astrid receives, and we'll have no control over it."

"But if it works well, they'll cut off the trial and give the treatment to all the participants, right? They won't withhold it if it's working well?" Mom's talking fast now. She's read too much about all of this.

"They would, yes—but that's pretty uncommon, to be honest. The early results would have to indicate that we are causing harm to patients by giving them a placebo, that it is an ethical imperative to deliver the treatment to all the trial participants. It's a high bar."

Dr. Klein pauses. Mom is scribbling in her notebook, probably notes of things she wants to google when we get home, or even when we're stopped at a red light en route. (Some days I think I'm statistically more likely to die from my mother using her phone while driving than from cancer.)

"You should also know that the potential side effects from the trial could be intense."

"Chemo intense?" I ask.

"Potentially, yes, or more so, depending on how you respond. And there would be a good deal of time spent in-patient because of the frequent infusions. I don't say that to discourage you. I just think you should know the full picture there."

We're all silent for a moment. Mom's still jotting notes. I can feel her energy vibrating next to me. I've spent so much time in hospitals already. The idea of signing up for more—volunteering for it—makes me feel like the room is tilting.

Mom looks up from her notebook. "We can handle the side effects."

We? I love my mother. She'd do anything for me. But we do not have cancer.

Dr. Klein smiles gently. "Maxine, I want to be candid with you both. The trial has potential to lengthen Astrid's life. It may, or it may not. But it's unlikely to cure her completely. I'm really urging you not to pin all your hopes on this."

"Alison," my mother says in response, "you're telling me this is our best shot, right?"

Dr. Klein takes in my face, my relative reticence in this conversation. Then she looks back to Mom and nods. "That's where we're at now. I'd say so."

"Right," Mom says. "Can you really expect me not to pin my hopes on it?"

In the car, my mother takes deep, calming breaths in the driver's seat. I stare at the white of her knuckles, gripping the steering wheel as she drives.

"Astrid," Mom says, finally breaking the silence in our more-than-a-decade-old Honda. "It's okay. This is just a hiccup."

I knew the tumor was back well before we saw the scan

in Dr. Klein's office. There were the light bursts clouding my vision, for one. Then I started tripping again, losing my balance. And there were the headaches. A headache turning out to be a brain tumor is one of those crazy things that almost never happens. Like, when you get a really bad headache, you might think for a single, fleeting moment, "Man, this could be the big one." But it's pure hypochondria. It never actually happens in real life. Until it does.

I didn't tell my mother right away when it came back, because I knew she'd go all freaky maternal on me, and I wasn't ready to hurt her again. Maybe I wasn't ready to be sick again, either. So I lived with my tumor made of stars, just the two of us, for about a month. Until one morning, when the headache bloomed so hard and so fast that I puked all over myself, and fell on the way to the bathroom, and then I didn't have to say anything, because she knew as well as I did. I wish I could forget the look on her face when she came bursting out of her bedroom and found me on the hallway floor, covered in vomit. I stared up at her, my only participating parent, and me, her firstborn baby, and watched the panic come into her face like a cloud rolling in before a summer thunderstorm.

"I think this clinical trial has real promise. I mean, immunotherapy, right? That's what everyone's talking about." We stop at a light and, sure enough, Mom pulls out her phone and starts tapping away with one hand, the other still resting on the wheel.

"Mom, you're going to get a ticket."

"They can't ticket me unless they pull me over for some other reason."

"I think that's for not wearing a seat belt, Mom. I'm fairly certain they actually can pull you over for using your phone."

"I just don't want to forget what I'm . . ." The light changes. Mom drops her phone and we lurch into the intersection. "This could really work. I feel good about this."

I take my phone out and pull up Mohit's last text: *How'd it go?* it reads.

He doesn't need to ask. He knew, too, as soon as I told him the headaches were back.

I start to type a text in response: *Doomsday*. Then I delete it. I want to say something clever to Mo, to reassure him that I'm still *me*. But I can't. I close my eyes, press my head against the seat of the car. I'll call him when I get home. It will break my heart to break his heart all over again.

As we drive on, my mother keeps talking. About more chemo, more radiation, more trials, more, more, more.

"Mom. Please. Just stop."

She turns to me. "Babe, we still have time. We have options. You know that, right? We're not done here."

I run my tongue over my lips, which have gone very dry all of a sudden. I want to tell her that she's wrong. I *know* about clinical trials and new drug cocktails, I do. I know more than I should, thanks to my internship. Enough to be pretty much a shoo-in for the best neuroscience programs in the country for college, with Dr. Klein's recommendation, which is what I'd imagined I'd be doing after high school, right up until the

headaches and the light bursts came back. I know that the chance of any kind of novel treatment working for me now, given everything, is about as close to zero as you can get without already being dead.

And more to the point, I know that sometimes—often—the treatment is worse than the cancer itself.

Instead of saying that, though, I nod. "Yeah, Mom. I know."

I DON'T NEED TO CALL MOHIT WHEN WE GET

home, because he's waiting on the front steps when we pull up. Mom idles the car and leans toward the window on my side. "You go ahead. I'll find a spot." There's no parking lot for our building, but Mom knows all the secret side-street spots in the neighborhood. She claims she's mastered the art of VPS (Visualizing the Parking Space), and then, *poof*, it appears.

Mo looks focused, and worried. He stands, taking his scuffed saxophone case in one hand, and wraps his other arm around me when I get to him.

"So?" he says as I fish my keys from my bag and let us into the front vestibule. Junk mail and bills are poking out of our mailbox, but I don't bother to collect them. We take the elevator to the second floor and slip into the apartment.

"Liam?" I call down the hall. I think my brother is still at his friend's house, but I want to be sure. No answer.

Mohit closes my bedroom door behind us. "So?" he asks for the second time. "What'd she say?" I bury myself in his chest and wait until his arms are firmly wrapped around my shoulders to take a deep, exhausted breath. Then I pull my face away and look up at him. I shrug. "What we thought she'd say."

The confirmation of what we already knew ripples through him. I can see the muscles in his jaw tighten, and his eyes flicker away from my face and then back again.

"Shit," he says, finally. "Well. Now what?"

If you've read a lot of chick lit (or let's call it something less sexist and gross, like "lighthearted literature featuring quirky female protagonists and romantic plot lines"), and by the way I have read a lot of said literature—because, frankly, the better part of a year with cancer isn't the best time to catch up on your Dostoyevsky—you might imagine that Mohit would have a "crooked smile," whatever that means, and that his T-shirts would smell of fresh laundry, and so on. In fact, though, he has a perfectly even smile (when it's on display), with dimples as deep as tiny wells drilled in each cheek, and very nice teeth, and he never smells of fresh laundry because his parents buy the unscented, chemical-free, totally organic kind of detergent that doesn't smell like anything. The kind of detergent that costs twice as much as the regular store brand and that my mom used to splurge on, too, before she had, you know, brain surgeries to pay for. Kind of ironic, really, that as soon as I got sick Mom had to stop buying all the pricey natural products she'd hoped would keep us safe from getting sick in the first place. Now it's all chemicals and GMOs all the time around here. Doesn't seem to be

making much difference one way or the other, as far as I can tell.

I shrug. "More chemo. And there's some trial in the spring. My mother has basically already signed me up for it."

Mo's face brightens, just like Mom's did in Dr. Klein's office.

"But I don't even know if I'm eligible yet. And even if I am, it's just so . . ." I trail off. I don't want to kill all his hope at once, but Mohit doesn't understand as well as I do just how slim a chance any clinical trial has of working in a meaningful way for any one patient. "Let's just . . . pretend it's not happening for a minute."

"This trial, or the tumor?"

"Both?"

He runs his fingers through my hair—my hair that practically just grew back, and now it'll be gone again—and then kisses me, and I close my eyes and exhale and let him pull me gently onto my bed.

Mohit and I met in ninth grade, BT (Before Tumor). It wasn't a magical first meeting—not particularly "auspicious," as Mo's father, who's a phlebotomist by day and officiates Hindu weddings on occasional weekends, might say. We were just in homeroom together. He'd moved from California for his mother's work, and he was all West Coast-y with kind of shaggy surfer hair. I'd never seen an Indian American kid with surfer hair, really, and I frankly didn't know they

existed (which, I know, was stupid and/or a little bit racist of me). Anyway, I wasn't even particularly thinking about boys or boyfriends or anything remotely romantic. My best friend, Chloe, and I were really into this particular word game on our phones that was a super-trend at the moment, and that was what we were talking about in homeroom that morning when Mohit walked in and told Mr. McDowell that he'd just transferred and was he in the right room?

He was.

He sat down next to me, unfolded his schedule, offered me his hand for a shake, and introduced himself in a whisper. He pronounced his name clearly: *Mo-hit*. "You can say it, like, if Moe Szyslak from *The Simpsons* is playing baseball?" he said, as if he expected I'd need the help. "Moe hit the ball. Mohit." Then he asked if I knew where he was going for math.

I walked him there that morning, and all the rest of the mornings.

Four months later, a week after he'd first asked me if he could put his hand on my boob—over my shirt, obviously—and I'd said sure, I started noticing the headaches. And by spring, just when everyone at school was starting to think of us as one of Those Couples, Dr. Klein showed me a scan of my brain for the first time.

I hear Mom come in. There's a knock at my bedroom door.

"Mohit, are you staying for dinner?"

Mo looks at me and mouths, "Want me to?"

I nod. Mohit's presence at dinner will prevent Mom from talking too much about the clinical trial, and how she's *sure* I'll be eligible, and how she'll call the acupuncturist again and that'll help with the headaches in the meantime, and how I should really put on my Optimism Pants. Except she'll be completely, obviously, gripped by fear. She thinks I can't tell, but . . . come on.

"Sure, thanks, Maxine!" Mohit calls toward the door.

I listen to hear if Mom's retreating down the hall or hovering. After a moment, footsteps pad lightly back toward the living room.

Mohit rolls over, throwing a leg across mine. "How's your head?"

"Um, well, it doesn't feel like an eighteen-wheeler is driving back and forth over my brain stem at the moment, so that's an improvement. My vision's . . ." I look toward the ceiling, watching those circles of light dance around the room. I'm trying to think of the words to describe the blurring around the edges, the bright flashes, the dreamlike quality of what I see in front of me right now. "Kind of psychedelic. Some people would pay good money for this."

Mohit sighs. "Why do you do that, Astrid?" He flops on his back, one hand draped across my chest.

"Do what?"

"That thing. The minimizing thing. You can just tell me when you're in pain. I can deal."

I resist the urge to roll my eyes, because Mo hates it when

I do that and I'm not looking to pick a fight right now. But this is not the first time we've had this conversation.

"I'm not minimizing. I'm just . . ." I pause. It doesn't have anything to do with protecting Mohit; I *know* he can handle it. It's about me. I'm trying to retain half an ounce of my former self. The person I was BT. That's hard to explain, even to this person who knows me better than basically anyone.

"Remember what we were doing a minute ago?" I ask finally.

"What were we doing a minute ago?"

I flip over on top of Mo, straddling his waist with my legs, and press my whole body against his. I can feel his heart beating through his totally unscented, fair-trade, GMO-free sweatshirt, and my body rises and falls with the movement of his chest.

"Oh, is this what we were doing?" he asks. He slides a hand under the waistband of my jeans and rests it at the base of my spine. His hand on my bare skin makes me melt a little bit.

"Something like that," I say, running my hands up under his sweatshirt.

"Dude, your hands are like icicles right now!" he squeals, recoiling.

"I know they are, and your chest is very warm. Be nice to your cancer-ridden girlfriend."

He laughs. "So we're going there already, huh? You're a little bit cruel when you have a brain tumor, you know."

"Sorry. Can't help it."

We lie there for a few minutes, our breathing never quite in unison.

Eventually, Mo stretches an arm out from under me and takes the book from my bedside table. "Where are we going today?" he asks, flipping it around to look at the cover.

It's a Lonely Planet travel guide to Kenya.

"Kenya, huh? Anything good?"

"Safari in the Maasai Mara, but that's kind of cliché. Lamu seems like a must-see."

My used-travel-guide habit started the first time I got cancer. Someone had left one—The Rough Guide to Japan—in the chemo lounge and I started thumbing through it absentmindedly, the way you do anything when you're in the middle of a chemo infusion. I'd never particularly wanted to go to Japan, but browsing through the descriptions of people-packed Tokyo and the Shinto shrines in Kyoto made the infusion go by more quickly. So I bought another one online—for Greece—and then another, and another, for far-flung islands and European hot spots and random parts of the United States, too. Places I'll probably never see in real life, and never knew I wanted to until I read about them. Traveling via guidebook isn't as good as the real thing, but it's better than nothing.

I take the book from his hands and put it aside. "Mo?" "Astrid?" His dark eyes alight on my face expectantly.

I pause to think of how I want to say what I want to say. "I'm a little bit scared this time."

"Yeah," he says, so quiet I can barely hear him. "I'm a little bit scared, too."

Then I kiss him until my vision might be blurred from pleasure instead of pain and my lips swell and the weight is almost, almost, almost gone.

It's two in the morning when I wake up to pee. My head feels surprisingly clear, almost normal, and I roll over and run my hand over the Mohit-shaped wrinkles in the sheets next to me. He didn't really leave those wrinkles, of course; he left after dinner and a round of Wii bowling with Liam. But I can still feel him in the empty space next to me.

I tiptoe to the bathroom, careful of the creaky parts of the hallway. Outside Mom's door, I pause. There's muffled noise, like the TV is on. She must have passed out watching something, trying to dull herself into sleep with a late-night talk show or a PBS mystery on repeat.

The door is cracked slightly—ever since Dad left, Liam sometimes still likes to climb in bed with Mom in the middle of the night if he has a bad dream or something, even though he's eight now—so I nudge it open farther with my toe, careful not to make any noise, and peer in. I expect to see her asleep, tangled roughly in the blankets, with the blue glow of the television pulsing in the room. Instead, it's completely dark; the TV is off. And her body isn't limp like it would be in sleep. Even in the shadows of the room, I see her curled toward the opposite wall,

in a fetal position under the covers, rocking back and forth. With every rock, she makes a low moan, almost a growl.

A floorboard groans under me and I freeze, watching Mom's shadow to see if it seems to register the noise. A moment later, she sniffles, rolls over, pulls the covers closer around her. She never turns toward the door, and I let my breath out slowly and step back into the hallway, toward the bathroom.

It feels like an impossible intrusion, like reading someone else's journal or checking their email, listening to my mother's private grief. The parts she doesn't want me to see. I have to shut it out before it sucks me in and I can't think about anything else.

"TELL ME AGAIN WHY YOU THINK ANYONE AT

this symposium knows more about my tumor than Dr. Klein?"

Mom pushes through the revolving door at the Expo Center. "Maybe they won't, Astrid," she says when we both come out the other side. "But Dr. Klein said even she was looking forward to checking out the most cutting-edge research in the field. So you never know, do you? Plus, the doctors leading the clinical trial will be here, and I don't think it would be a bad thing to make a personal connection with them."

I sigh. My mother has no idea that patients don't get into clinical trials by being friends with the research team. It's not like an AP class with the best teacher: you can't just talk your way in by bringing cookies to the guidance counselor.

Then again, it's true that Dr. Klein's comment about the cutting-edge research is the real reason I let my mother drag me along to this brain research symposium. I'm curious what they've got. But if Mom thinks I'm going to follow her around

while she goes up to random researchers and pulls my scans out of their envelope, she's dreaming.

The symposium is supposed to be the biggest international conference of neuro-types anywhere. The lobby is teeming with science nerds weighed down with branded tote bags probably full of research papers, brochures, other people's business cards. In every direction, there are signs directing traffic toward the main exhibition hall, the bathrooms, the café, and others featuring the highlights of today's schedule. I grab a program, which is as thick as a phonebook for a small city, and flip through it. There's a long directory of all the exhibitors, plus a day-by-day schedule for the weekend. Today at one o'clock Dr. Klein is giving a talk on radical therapies for high-grade pediatric astrocytomas. I think I can skip that one.

"I'm going to do a lap," I tell Mom when we've registered and draped visitor badges around our necks.

Mom gives me one of her I-can't-with-you looks. "Fine, just don't leave without me, will you?"

"You have the car keys."

"You're really a pain in the ass, you know."

"You have only yourself to blame."

She smacks my arm with her program. "Meet me back here in an hour."

"You know, we have these crazy contraptions these days, they're called cellular telephones—"

"One hour, Astrid. Don't make me come looking for you."

"Roger that, Maxine."

Mom cocks one eyebrow at me. "Maxine?"

"It's just something I'm trying."

"Well, don't. One hour, Daughter."

"Yes, yes, *Mother*," I call over my shoulder as I wander toward the exhibition hall.

Inside the hall, I'm immediately overwhelmed by the chaos. Row after row of booths, all of them decorated in brightly branded tablecloths and trifold banners, stacked high with papers, books, baskets of souvenirs in the form of key chains and bottle openers and brain-shaped stress balls. My head throbs under the fluorescents. I take a stress ball from a table as I pass by, avoiding eye contact with the obviously twenty-something research assistant behind the table, and squeeze my fist around it as I wander down what appears to be aisle J.

I try to meditate on the squeezing as I walk, imagining that my brain is the stress ball and I'm massaging the pain out of it. Mom always tells me to try to visualize away my pain. Not in like a condescending way—she knows I need actual medication, obviously, like a lot of it sometimes—but she's a CNM (certified nurse midwife) when she's not in full-time Brain Tumor Management mode, and she's used to telling her own patients to breathe and focus and visualize things to manage their pain. Of course, I guess when your pain is temporary and in service of birthing a human, it may be more inclined to respond to mental pressure.

Anyway, my headache doesn't go away from squeezing the stress ball, but some of the anxiety brought on by the chaos around me seems to. Not that I have any kind of serious problems with crowds or anything, but with a few minutes of focused squeezing and deep breathing, I can already feel my heart rate slowing and the queasiness I recognize as nerves calming. Bonus of having a brain tumor and going through a crap ton of treatment for a year: I'm reasonably attuned to the signals my body gives me.

I pause to catch my breath at a table featuring research into a new blood test for variant Creutzfeldt-Jakob disease, one of those nasty human prion diseases that kills you slowly after taking away your motor skills, speech, and normal personality. Once again avoiding eye contact with a research assistant, I pull my phone out to text Mo while I perch against the edge of the table.

Then I pause and think better of it. I know he's going to ask if I've talked to the directors of the clinical trial; he can't help himself. Mohit is just like my mother, wanting to figure out the best course of action, the best next steps. He wants to feel like he's doing something other than watching me die. Which, let's be real—it's not like I'm terribly keen on croaking before I graduate high school either. And I guess I wouldn't want everyone around me to throw up their hands and be like, "Well, you're toast. Let's call Make-A-Wish and go to Harry Potter World." (Although I really, really want to go to Harry Potter World.) So I don't know what I want, exactly. But it feels like the positivity is forced, like we all have to rush toward optimism or the Angel of Death will somehow notice and take our despair as permanent defeat. Maybe I just

want them all to give me a minute. With the despair part. A minute to feel really mad about this whole situation.

I text Chloe instead. She always lets me have a minute.

This place is a madhouse. Almost literally, considering the number of people with compromised neurological function probably roaming around. Present company included.

Clo writes back right away: Questionable use of "literally," but I'll allow it on account of your brain tumor.

My phone buzzes again. Can we hang out later? It's book club night over here and I need to avoid All the Cambridge Ladies.

I laugh. "Cambridge Ladies" is code for the abundance of uber-liberal white women in our neighborhood who wear tunics and leggings and make their own granola and drive used Subarus, among other common characteristics. Which basically describes our own mothers (minus, in my case, the Subaru).

Clearly, I type back. I think Mo and I are doing a movie night. You in?

She doesn't respond immediately, and I know she's probably momentarily pouting about spending another Saturday night with me *and* Mohit. It's not like Chloe hates Mo or anything. But she didn't take to sharing me all that well, especially at first. These days, she and Mohit have a kind of unspoken agreement that they put up with each other's constant presence in my life because what else are they going to do about it?

Finally, I see two dots appear on my screen while she types a reply. I suppose I could third-wheel it yet again. For you.

And don't tell me, the movie must be something that gets more than three stars. I know your weirdo boyfriend's weirdo Rule of Movies.

She's not wrong. Mo's Rule of Movies is that he never—never—watches anything that gets less than four point five stars on All the Rating Systems of the Internet. It's manageable, except when Chloe and I want to watch a really bad thriller with Liam Neeson and call it a day. Sometimes I just don't care if everyone else hated it because I am going to hatewatch bad Liam Neeson thrillers for as long as I've got left, and I am going to love them.

A voice comes over the loudspeaker announcing the start of the one o'clock presentations. I think of Dr. Klein, getting her PowerPoint deck ready so that she can show people my brain and tell them how the radical therapies fixed it for a year and then failed miserably. I'm sorry I let her down. I wish we'd waited another week to get the latest scans back. Then at least she could've made this presentation while I was still supposedly in remission.

I hang a left down aisle K, and a table catches my eye primarily because there's no one there. I mean, most of the tables have a few people at least hovering around them, perusing the literature or asking questions. This one is empty, except for a youngish guy behind the table, fiddling with the display.

I wander over. It's an exhibit for the American Institute for Cryonics Research, which I've never heard of. The guy seems far too young to have any kind of real job—he looks not that much older than me—but I don't see anyone else

with him and he's wearing an exhibitor badge around his neck. He's trying to straighten one of the pop-up banners, and the top disengages from its frame and bounces back against his face.

"Dammit!" he says, under his breath.

"Want some help?" I ask, stepping in and grabbing one end of the banner.

"Thanks. Sorry. These banners are just . . . My boss doesn't understand the concept of 'get what you pay for,' know what I mean?"

I help him clip it back in the holder and straighten it out. Then I step away from the table.

"Thanks," he says again. "I'm Carl. Uh, sorry, Dr. Carl Vanderwalk. I'm still getting used to the 'doctor' part. I just graduated from med school. Anyway, Dr. Carl Vanderwalk, MD, PhD. Doctor, two ways." He laughs awkwardly.

I take his outstretched hand. "Astrid Ayeroff. Just a regular human."

"Lucky you—you won't end up drowning in debt like I am."

"Something like that," I say. I must look slightly distressed, because he furrows his brow and looks around.

"Water?" He passes me a bottle across the table.

"Thanks."

"So what brings you to the symposium?" he asks while I take a long swig of the water and try to visualize it moisturizing my brain and melting the headache away. It doesn't work.

I put the bottle down, half empty. "I love the brain."

He smiles. "It's a thing of beauty, isn't it?"

He's right about that. "Mmm-hmm. Thanks for the water, Dr. . . ." I've already forgotten his name, so I look at his badge more closely. "Dr. Vanderwalk."

"Please, just Carl. The doctor thing makes me feel old. They keep telling me I have to use it when I introduce myself because, I don't know, otherwise people think I'm like twelve or something and totally unqualified to talk about our work."

"Who's 'they'?" I ask.

"Oh, my boss. Here." He rummages around behind the table and pulls out a business card. "Dr. A. R. Fitzspelt. His first name is Argos, but don't tell him I told you that."

I take the card and drop it into my tote bag. "So what is cryonics, anyway?"

His face brightens, like he's suddenly been asked to rattle off a list of all the As he got in med school or something. "I'm glad you asked! Cryonics is the most advanced and exciting extension of cryopreservation. It's the science of body preservation. It's the future."

Images of industrial-strength freezers in a warehouse clouded with cold mist pop into my head. A team of mad scientists pore over glass caskets of freezer-burned bodies. I can almost smell the formaldehyde from here. For a moment, it feels like the room is spinning.

"I know what you're thinking," Carl says. "It sounds like science fiction."

"Something like that."

"I get that a lot. It's not, though, believe me. It's a legitimate choice more and more families are making for their loved ones at death, to preserve either their entire bodies or, in some cases, just their brains. Our facility is in Sedona, Arizona. It's the oldest cryonics lab in the nation. Our youngest client is just two years old. Our oldest is eighty-four."

I swallow, thinking of a two-year-old body engulfed in a deep freeze. "Preserve them to what end, though?"

"We're just beginning to explore the possibilities, of course," he says. "But the ultimate goal is to one day revive our patients."

I never say this, but I think the hair on the back of my neck is literally standing up. And for Chloe's sake, I mean "literal" in the dictionary-definition way this time.

He hands me a brochure. "You seem smart. Call us when you're looking for a job. I started as an intern. Now I'm the associate medical director."

My mouth has gone completely dry, and I suck down the rest of the water in one long swig. When I've finished, Dr. Carl Vanderwalk is staring at me quizzically.

"Are you okay?"

"I won't be looking for a job," I say. "I'm dying."

Before he can respond, I've walked away.

4.

PRECALCULUS IS NOT MADE FOR BRAIN TUMORS.

"So what do you have to know about your triangle, in order to use the law of sines?" Ms. Dahlmann scans the room for her next unsuspecting victim. I avoid eye contact. The numbers and symbols on the whiteboard at the front of the room—even from the front-row seat I had to take when my vision took its recent nosedive—are blurring.

"Come on, gang, you know this stuff." She keeps roving. "Mohit?"

Hearing Mo rustle in his seat, I turn around. He's at the desk directly behind me. I cock my head at him ever so slightly, challenging him to give Ms. Dahlmann what she wants. He gnaws on the end of his mechanical pencil.

"Well, you need two sides."

"And?"

He scrunches his face and stares at the board. "And $\, . \, . \, . \,$ a corresponding angle?"

Ms. Dahlmann lights up. "Right, excellent. Or you could

have . . . what?" She moves on from Mo, and even with my eyes planted on my desktop, I can feel her staring at me. "Astrid? What else could you have and use the law of sines?"

I sigh and shift my eyes back up toward her. I feel suddenly exhausted, and resentful. My teachers know about my . . . brain. Against my wishes, Mom told the principal that the tumor is back, that my energy might be low and my vision is increasingly affected. Dahlmann was the one who suggested I move to the front of the room. I didn't want my teachers to know in the first place, since I'd prefer not to be branded as Cancer Girl all over again quite so soon. But if they *must* know, at least they could cut me some slack.

I shake my head. "Not sure," I mutter.

"Come on, Astrid. You've got this." Her voice is gentle, but she's not giving me an out. Dahlmann is very comfortable with uncomfortable silence in her classroom.

"Umm . . ." I stare at the board. It's not that I mind math, per se. I loved algebra, and precalculus is a lot of the same stuff, just more of it, like fancy algebra. But now I can barely muster the will to comprehend the equations and images staring me in the face. "I don't know, Ms. Dahlmann. Sorry."

Dahlmann looks at me for a moment more, as if she's trying to ascertain whether she should push me any harder, and then she moves on. "Sofia?"

Sofia Mayhew, who has hair so long she can sit on it, squirms at her desk. "I mean, I guess if you had two angles and a corresponding side . . ."

"Thank you! See that? Was that so bad, my friends? I didn't think so." She goes back to the board and starts sketching out an example problem of each type. I zone out, figuring since she's cold-called me once already, she's not likely to do it again.

On our way out the door after the bell, Dahlmann stops me. "Astrid. A minute, okay?"

Dahlmann's desk is sloppy with tests to be corrected and orphaned homework assignments. I try to focus my brain and eyes on her.

"Astrid," she says again, slowly. She watches the rest of the class empty out before continuing. When we're alone in the room, she clears her throat. "Look, I know you're struggling a little bit."

"I'm okay."

"I know, but . . . you're having trouble seeing. And you're having headaches again, right?"

She waits for me to answer. Finally, I give her a nod.

"Listen, I don't know what's next for you in terms of your . . . treatment."

It's obviously awkward for her to talk about this. I can't really blame her; it's awkward for everyone.

"But . . . I just want you to know that you can be honest with me about how you're feeling. Okay? If you're not up for class, I can give you some work to do in the library. But if you're here, I have to treat you like everyone else. You get that, right?"

I nod again.

"Okay. That's it."

"Thanks, Ms. Dahlmann." I start toward the door.

"And, Astrid."

Her eyes look a little watery. *Please*, don't let a teacher cry on me. Come on.

"I'm praying for you."

I swallow. "Thanks." I guess.

WHEN I FIND CHLOE AFTER SCHOOL, SHE'S

rummaging urgently in her locker. On the floor is her navy canvas backpack, practically every inch of which is covered by pins with this or that social justice slogan—coexist written in symbols from different religions, STRAIGHT BUT NOT NARROW within a pink triangle, and CHILDREN BY CHOICE with a smiley face, among others. I pick up the bag and let it dangle from my wrist. I'll never understand how Chloe just dumps her stuff on whatever grime-encrusted surface is nearby.

"Greetings," I say, announcing myself.

"Found it!" She pulls her head out of her locker and holds the box aloft triumphantly—store-brand hair dye in a color called "Blue Razz!" The model on the box looks like Violet Beauregarde from *Charlie and the Chocolate Factory*, after she's chewed the blueberry gum, while also performing a musical number from *Chicago*.

"Good?" she asks.

"Works for me."

"Where's the Protector of All Things Astrid and Killer of All Things Fun and/or Inappropriate?"

I roll my eyes. "Come on."

"Sorry, I meant your boyfriend." Truce or no truce, Chloe still takes the opportunity to give Mohit a little dig where she can.

"Jazz band."

She takes her bag from me and slings it over her shoulder. "Great, so your personal stylist can work in peace today."

"You could cut him some slack. Like occasionally. Just saying."

Chloe's already halfway down the hall, and I hustle to keep up with her, even though my right leg aches a little. She pauses by the stairwell while I catch up. "I'll cut him some slack when you're dead. In the meantime, we have living to do."

It never sounds harsh when Chloe says it. It just sounds honest.

We walk back to Chloe's place, which is empty except for Stanley, her crusty old beagle mix. "Hi, Stan," she says, nudging him with her foot as we enter the apartment. He whines at us. "He's not adjusting that well to the current living arrangement." Annalisa, one of Chloe's moms and the dog person in the family, moved out over the summer for a trial separation from Chloe's other mom, Cynthia. I can empathize with Stanley, since my father moved out when I was twelve.

Stanley trails us into the bathroom.

"Shirt off," Chloe orders me. "Sexy, huh?"

Chloe and I have been friends since middle school, when it became readily apparent that if there are two kids in your whole school who can't pick the latest boy band members out of a lineup and want to play word games and talk about science, they should probably team up.

In the bathroom, Chloe kicks aside various hair dryers and curling irons and mildewed washcloths and drops a towel on the floor by the tub so I can kneel on it.

"It's clean," she says. "I know with whom I am dealing."

I'm not actually that much of a germophobe. I mean, I am, sort of, but not clinically or anything. It started with an episode of Shark Tank Chloe and I watched several years ago, in which two start-up bros from MIT pitched a product that was essentially a disinfecting pod for cell phones, and they had all this data on how much fecal matter is lurking on your phone. Your crap is all over your phone, in other words. That kind of thing is hard to get out of a person's head. My head, anyway.

My head, which is spinning a bit now, like I've just stepped off a carousel that was moving a little too fast. I kneel on the towel and take some deep breaths. Chloe gently eases me under the faucet. She massages my scalp like she works in a hair salon. Then she towels me off, settles me on the edge of the toilet seat, and starts combing out my tangles.

As soon as the first snips of hair hit the floor, I feel lighter.

When most of my hair is on the floor around my feet, Chloe uses an electric shearer to get the back even. It's not a buzz cut like she gave me last time, when my hair started falling out in huge clumps, but it's on its way: a soft, boyish pixie, the front a little bit longer across my forehead. She admires her work.

"Good, right?"

I have to hand it to her—she's really very good at this. Years of YouTube self-haircut videos and experiments with varying degrees of success, coupled with tutorials from her "hairy godmother," Steve—Chloe's mothers don't believe in God-with-a-capital-G either, but they did assemble a cast of friends to teach her important life skills, such as cutting hair—and Clo has become quite reliable with a pair of scissors. She even does the thing where she holds up a chunk of hair and comes at it from an angle, although I have a feeling that might be more for show than for any actual effect.

"Hey, if the whole astrophysicist thing doesn't work out for you, you should really consider a career as an aesthetician," I say.

"And if this whole brain tumor thing doesn't kill you, you should really consider a career as a comedian."

"Fair"

Chloe turns my head gently to check each side. She nods, satisfied, then cracks open the box of dye and pulls on a pair of rubber gloves.

OUR APARTMENT SMELLS LIKE FISH WHEN

I get home hours later. Delightful. I wrinkle my nose and follow the scent into the kitchen, where Mom is taking a dish of salmon out of the oven.

"It smells in here."

"Keen observation, my girl." Mom turns around. "Whoa! Look at you!"

"Chloe."

"I assumed." She kisses my forehead, then steps back and examines my hair, fluffing it with one hand while she considers my new look. I duck out of the way. "Chloe learns how to do this stuff online?"

I pull up a chair at the kitchen table. "And from her hairy godmother, Steve. But yeah, she's sort of obsessed with You-Tube how-to videos."

Mom stares at me, her brow furrowed. "You know what, though?"

"Yes, Mother?"

"I like it. I really do. It suits you. You know I'm not massively into the artificial hair colors, but . . . what can I say? The blue works."

"Thanks." I nod toward the salmon. "The kitchen's going to stink for days, you know."

"Omega-3s!" She turns back to the fish and starts fussing over it. "The better for a healthy brain!"

"A little bit late for that, don't you think?"

Mom pauses. From behind, I watch her back tense and relax and tense again. Even without saying anything, I know she's focusing on her breath for a moment, her way of collecting herself. Then she turns to me.

"Astrid, I understand that you're cutting your hair off in anticipation of losing it again." Her voice is calm and flat. My mother is nothing if not a master of her own emotions, ninety-nine percent of the time. "I get that you are preparing yourself for what's next. But for my sake, and Liam's, and frankly your own, how about laying off the total morbidity just for a night, huh?"

I swallow. I want to object, since it's my life and my death and I should get to react however I want to react. But then I think about the sound of my mother's grief in the bedroom that night after our last visit to Dr. Klein, and the look on her face—absurdly full of hope—whenever she talks about the stupid clinical trial. It's hard for me to begrudge her what hope she has left. I'll be dead, after all. And she's going to be the one left behind.

The front door opens and Liam comes bounding into the

kitchen, smelling of soccer practice, all little-boy sweat and mud.

"Whoa, whoa, shoes off in the hall, mister!" Mom says.

Liam ignores her, just romps over to me and throws his arms around me. "Your hair is crazy!" he exclaims, ruffling it just like Mom did a minute ago. I mind it less coming from my little brother.

I breathe in his musty smell. "You stink, kid." He does, but I love it. "Want to bowl a round while we wait for dinner?" Liam's face lights up like he's just been told he's going to Disneyland, which makes my heart contract.

"Clean yourself first!" Mom says over her shoulder as we bound out of the kitchen. "And you only have ten minutes!"

I get the Wii set up in the living room while Liam scrubs down

"All right," I say, handing him a controller when he reappears in pajama bottoms and a T-shirt. "Lightning-round bowling."

"That's not a thing."

"Whatever. I just meant, let's do this fast. Before dinner."

Liam bowls first, and he's much more expert at maneuvering the Wii controller than I am. His little Liam-like avatar bounces on the screen, and then he sends the ball straight down the center of the alley. Strike.

"Shit, dude," I say.

"Quarter in the swear jar!"

I roll my eyes. "Come on. That's only for when Mom catches us swearing, Lee."

Liam's blue eyes are wide and twinkly, and for a moment, it feels as if he's looking at me like he's never seen me before, like I'm not the sister he's never known his life without. There's a smudge of dirt on his forehead that tells me he didn't quite wash up the way Mom intended him to.

"Give me one free swear?" I whisper. "Our secret?"

He gives me an earnest thumbs-up. This kid, I'm telling you. I love the guy.

I bowl, first a two, then a goose egg. Liam giggles.

"Hey!" I say. "Don't laugh at the cancer patient! I should get a handicap or something. Brain tumor, automatic five-point bonus."

His smile dissipates, and I immediately regret mentioning the brain tumor.

"I was kidding, Lee. It's a joke."

He stares at the floor and mutters something.

"What? I can't hear you when you mutter like that." His teacher says he does it in class, too, more and more frequently, withdrawing into himself.

He raises his voice only slightly. "I said, do you only want to play with me because you got your tumor back?"

I put the controller down. "Bro, come on."

He won't make eye contact with me, so I pat the couch next to me and wait for him to saunter over on his own time. Eventually, he perches next to me, leaving plenty of air between our bodies. "I always liked playing with you. BT and AT. Before Tumor and After Tumor."

"Not true."

"It is true, Lee!" Realizing that arguing with an eightyear-old about this is not going to yield any satisfactory outcomes, I try a different approach, one Mom has always drilled into us—feelings. "Okay. I'm sorry. How does it make you feel when I don't play with you as much?"

He shrugs. "I miss you. And I feel like when you weren't sick, you didn't have time for me."

I resist the impulse to defend myself. It's not exactly accurate, but he's not totally wrong either. I think back to the last year, my good year, and all the time I spent away from home, exploring the city with Mohit, lying on the floor of his bedroom, talking nonsense, slipping back into the apartment after Liam was already asleep. Mom let me get away with it, probably because she'd almost lost me once for real, and losing me to a boyfriend didn't seem nearly as objectionable. When I wasn't with Mohit, I was with Chloe. So I can see Liam's point.

"I didn't mean to abandon you, kid. You know, when I finished my treatment the last time, it was kind of like having a new life. And I wanted to do all the living I could. Does that make sense?"

He shrugs. "I guess."

"But I didn't mean to leave you hanging. I always want to spend time with you. You're my favorite brother."

"I'm your only brother."

"Okay, well, that makes you lucky, because the competition for favorite is not that stiff."

He sticks his tongue out at me. "Your hair looks crazy."

Mom clears her throat, and I wonder how long she's been hovering at the living room entrance. Her eyes are glistening a little bit, which makes me think she's been there for a few minutes, just watching. "Dinner, guys."

In bed later, I think of Liam with his big eyes staring at me across the dinner table like a freakin' lost puppy. Goofy, sweet Liam. Hopeful Liam. Next year, or next month, or whenever the end comes, he'll be the kid with the dead sister. In school, other kids will watch him for signs that he's coming undone. He'll come home to a sad mom who will buy him too many Christmas presents to make up for how absent she's been. He'll become the worst kind of only child, the kind who's lonelier than if he'd never had a sibling in the first place, because he'll be living with the ghost of me.

I roll over and watch the neighbor's motion sensor light flash on. A raccoon going by, maybe, or a skunk, hunting in the trash cans for dinner.

I can't quiet my brain, thinking of my brother being that kid.

Dammit, Liam.

I guess it won't kill me to apply for the clinical trial.

A FEW WEEKS AFTER MOHIT AND I MET IN

homeroom, after we'd started accidentally-on-purpose finding each other at lunch and in the hallways at random intervals throughout the day, he told me he wanted to show me something I'd never seen before.

I raised an eyebrow. "You're pretty confident. How do you know I've never seen it?"

"I'm fairly certain."

I was intrigued, by him and his West Coast swagger and everything else. "So what's this something?"

"Just a thing. You'll have to wait and see." When he smiled, it was like death-by-dimples for me. (It still is.) Those deep pockets of joy dug into Mo's face, and I had to go along with whatever absurd plan he'd come up with.

That Friday evening, just as the sun was setting, he picked me up at my apartment and took me all the way downtown on the subway. It was a new thing, going on a "date," and my mother had looked apprehensive and enthusiastic and nostalgic, all at once, when she closed the door behind me.

"You're going to have to do better than this," I told him when we got off the train at a random stop on the Orange Line.

"Shush, shush. Just wait for it."

It was fall, still early enough that New England hadn't packed it in yet for winter and the streets were buzzing with couples taking an evening stroll along the cobblestones, wearing light, expensive-looking leather jackets and fashionably draped scarves.

I recognized the neighborhood, if mostly from movies directed by Ben Affleck. "I've *been* to the Bunker Hill Monument, if that's where we're going," I said as we huffed up Breed's Hill in the middle of Charlestown. "We went there in seventh grade. So if this is the thing I've supposedly never seen, you're wrong."

"Shhh. Don't ruin it."

"Fine, fine." I watched him from behind as we ascended through this quiet corner of Boston, lit softly by gas lamps. His hair was just a little too long in the back, ready for a trim. I already knew the contours of his face well enough that even from behind, I could picture where he had a fine spritz of pimples on his forehead, where one hair curled defiantly away from his eyebrow.

When we got to the top of the hill, the monument glistened in the fresh light of the moon, a huge sword rending the night sky in two. The wrought-iron gates around the park were locked.

"Oops," I said. "So much for that."

But Mohit shook his head. "You think I'd bring you all the way here at night only to show up at a locked gate?"

"Are we going to break the law?" I asked, as Mo led me around to the other side of the park.

He smiled at me. "Are you hoping the answer is yes, or no?" Then he stopped by a patch of shrubbery. "Here."

As Mo parted the shrubs, I saw that a section of the gate had been damaged, as though a car had careened into it years ago and no one had bothered to fix it. The damage left a gap barely wide enough for a small-to-average-size human to squeeze through. Mohit went first, then put a hand out to guide me through.

It was just the right amount of illegal—kind of bad, but not go-to-jail bad—to make me like him even more than I already did.

At the base of the monument, I caught my breath. My astrocytoma hadn't made itself known yet, but it was probably already growing there, blossoming inside my skull and wearing me down in ways I couldn't put my finger on. There were almost three hundred steps to the top of the monument.

"We're going all the way up?" I asked.

"I told you you hadn't seen this."

We put our cell phone flashlights on, lighting just enough to see two steps in front of us as we made our way up the obelisk. We climbed and climbed, not speaking. It was quiet enough that I could hear his breath a few steps ahead of me.

When we emerged at the top, he reached his hand out to help me up the last few steps, and it felt so normal—our hands in each other's. It sent the sparkliest shiver through me.

"There," he said, obviously proud. "See."

"Damn."

He took in the view and sighed happily. "If that doesn't make you believe in God . . ." he said, almost to himself.

I laughed, on impulse. I so rarely heard anyone talk about God and sound like they meant it. "I'm sorry. I didn't mean to laugh." I could feel my palms starting to sweat with nerves. Here I was, having a possibly romantic moment with a person I barely knew but very much wanted to know more, and I'd already managed to make a mockery of his apparent religious beliefs.

But Mohit just shrugged it off. "It's okay. I'm not offended."

"Okay, good." When the relief passed, curiosity—and a hint of boldness—replaced it. "Then can I ask you something? So you, like, believe in that? You look at that view and think it's all thanks to some higher omnipotent being?"

"Yeah, I do. That and architects. I'm guessing you don't?"
"I believe in the architects part."

He nodded as a small smile stretched across his face. "So there is a possible Venn diagram of our belief systems, then."

I pictured it: two overlapping circles. Faith in his circle;

in mine, I suppose, science. In the overlapping center, architects. Our Venn diagram.

"This view is my favorite thing about the East Coast so far," he said, going on. "Other than you, I mean."

Beneath us, the city unfolded in every direction. The brightly lit triangles of the Zakim Bridge stretched toward the sky, tucked between the skyscrapers. Tiny dots of headlights moved across the bridge, headed home and away.

On the other side, the rest of Charlestown was all low row houses and dim streetlights and blocks of public housing, and then the harbor.

We were standing just inches from each other, not touching, not speaking, but somehow it felt like our bodies were sending quiet bursts of energy back and forth.

"Good, right?" he said finally. "God, architects, whoever. Good?"

I couldn't help but smile. "Good."