

CHAPTER ONE



My first trip to the principal's office is for something ridiculous, and I'm only a month into my senior year. I would've guessed I'd be in here for something more exciting, like accidentally blowing up one of our science labs or hacking the teachers' gradebooks for a friend. Or getting caught on the school's roof targeting the Orion Nebula with my telescope or genetically modifying some cafeteria food to taste less like cat puke. But no, I'm here because of the fuzzy rat who is sitting in my hoodie pocket. She's a blue rat, which is kind of a misnomer because her fur's actually a bluish gray. Anyway, she wasn't bothering anyone, so this principal's office visit feels a bit over the top.

As I sit in the overstuffed chair in front of the secretary's desk, a few things flash through my mind:

1. These chairs are more comfortable than the ones in calculus, so this situation could be seen as an upgrade from where I was ten minutes ago.
2. Is my dad going to be mad or think this is funny? Getting a call from the school saying your daughter is in the principal's office is not usually a good thing, so I'm guessing mad. My stomach twists.
3. It's a bummer that Five's food is in my locker. She's wiggling around in my hoodie, and she's probably hungry. She hasn't eaten since breakfast.

I pat my hoodie pocket gently, hoping it comforts Five. Then again, since she doesn't know she's in the principal's office, maybe she doesn't need comforting. A banner on the wall displays our school's logo next to our motto: EXPECT EXCELLENCE.

The secretary, Mrs. Ling, taps away on her keyboard, ignoring me—just another kid who missed excellence. Her eyes look like years of staring at screens have dulled them, and ten dollars says the apple on her vest isn't the only pin in her collection. If she were an element, she would be radon: a product in the decay chain of uranium and thorium.

I started classifying people according to what periodic table element they would be in elementary school, when Jon Blatnik called me a poophead. I researched the grossest thing in the world in order to find a good comeback. Turns out livermorium

is known as the smelliest element, so that's what I called him. He started crying because he thought I put a Harry Potter curse on him.

Pretty soon, I'd matched everyone in my class with a square from the periodic table. It made me feel like I finally understood people. For example, livermorium? Extremely radioactive. So of course Jon Blatnik would lash out at me sometimes—it's in his nature. This elemental conclusion allowed me to tolerate him, and I've been classifying people ever since.

The door to the office behind the desk opens, and Mr. Grant flicks a piece of lint from his red-and-black striped tie. "Skyler Davidson?" He looks around like a doctor surveying a waiting room, but in a row of empty chairs, there is only me.

"That's me." I raise my hand. Five wiggles in my hoodie, so I put my other hand in there and give her a scratch behind her ears.

The principal's office is a bit of a letdown. There's a poster of a tropical island and a framed picture of Mr. Grant's degree from some college that must be small because I've never heard of it. His metal desk fills about half of the office, and there's a clear glass bowl of chocolates in the left corner. I help myself to a Crunch Mini. What's so scary about the principal's office?

Mr. Grant frowns at my Crunch bar. Maybe those weren't supposed to be for students. Well, half of it's gone, so I'm not putting the other half back now.

"Skyler Davidson . . ." He says this like he's trying to buy time while looking at the papers in my very thin file. He probably has no idea who I am. In a high school of five thousand students,

principals usually don't bother with ones like me. He reaches for his reading glasses.

I recite my stats like an athlete, hoping we can speed up this process. "Senior. 4.0 GPA. No previous infractions unless you count the time in seventh grade when my science fair project started that tiny fire in the corner of the gym, but I don't know if that ever made it into my cumulative file."

Mr. Grant looks at me over the top of his reading glasses, then shuffles through another couple of pages. "It appears that it did not."

"Oh, good." That means it won't show up on college applications. I finish off the Crunch bar except for a tiny corner that I slip into my gray hoodie pocket. I eye Mr. Grant's candy dish again and spot a Butterfinger, but there's no reason to press my luck.

Apparently finding nothing remarkable in my file, Mr. Grant folds his hands on his desk and looks at me. "Would you care to explain what happened in calculus, Ms. Davidson?"

I hold up one finger to show that he needs to wait until I'm finished chewing. After all, it's rude to talk with my mouth full. "No one cared about Five until Chelsea freaked out."

"Your teacher reported that you . . ." He looks at the discipline slip one more time to make sure he's reading this right. "You brought a rat to class?"

"Technically, yes." I pull Five out of my hoodie pocket and put her on my shoulder. She's holding the small piece of chocolate between her paws and chewing. She pauses for a minute, her bite bulging in the side of her mouth. She looks around, finds the

principal's office as unimpressive as I did, and then goes back to chewing.

Mr. Grant squints a moment and then shakes his head. "Right. I see. And you brought the rat to class because . . ."

"Because she needs electrolytes four times a day. Which I explained to Chelsea *and* to Mrs. Batts, but I don't think they got it." As if on cue, Five sneezes. She uses a paw to wipe her whiskers and pink nose. "See? If this turns into an upper respiratory infection, she'll be in trouble. Her predecessor, Three, died of a URI, and I'm telling you—it looked unpleasant."

"I see."

It doesn't look like he does.

"Chelsea saw me putting a dropper of Gatorade into my hoodie pocket, and she asked what that was all about. So I showed her Five. She screamed and acted like I've been digging around in sewers or something, but rats are the cleanest rodents out there. If you ever find yourself in a sewer, Mr. Grant, you should go where the rats are. It will be the cleanest part of the sewer."

"Is that so?"

"Yes, it is. There has been lots of research done about this. Plus, rats are extremely smart. They're great pets. Watch this. Five, sit."

Five keeps chewing on her piece of chocolate and doesn't move.

"We're still working on it. But they're smart, seriously."

Mr. Grant takes a deep breath. "Is Five . . . part of a project you're working on?"

"My science fair project: the effects of creatine monohydrate on muscle growth in rats. She runs on a treadmill for ten minutes

a day, and I'm attempting to prove that the creatine monohydrate will expedite her gains in muscle mass. We've been training for weeks. It took me forever to even teach her to run on a treadmill, but now she can do up to level 2.1. That's roughly five miles per hour. Pretty impressive if you ask me. It's worth the extra attention she needs right now, especially seeing as there wouldn't be enough time before the science fair to train a successor rat." I hold up the Gatorade bottle like I'm Alexander Fleming with some freshly discovered penicillin.

Mr. Grant stands up as my dad comes through the door.

"Sky, what's going on?" Dad is still wearing his white lab coat. His silver-rimmed glasses frame his alarmed blue eyes. "I got your text that I needed to come in."

"I brought Five to school because she needs her electrolytes. Apparently that's not okay, and I was hoping you could bring her home."

My dad puts his fingertips to his forehead. "Sky, you know you can't bring a rat to school."

"You said you didn't have time to give her Gatorade. Was I supposed to let her waste away?"

My dad runs his fingers through his overgrown blond hair. We don't look much alike. I have my mom's dark hair and dark eyes. I'm also short like she was. My dad is tall and lean. He claims he was ripped back when he played golf in high school, but I doubt it. Hours of fine-tuning microscope slides for the past twenty years have taken away from all the time he spent doing any exercise. He recently started going to a local gym a couple of times a week and said he's "turning over a new

fitness leaf,” but we’ll see how long that lasts. It’s not usually very long.

“I’m sorry, Mr. Grant,” my dad says. “I’ll take Five home.”

He plucks her from my shoulder and puts her on his. Then he shakes Mr. Grant’s hand, and Mr. Grant eyes the massive bottle of hand sanitizer on his desk.

“Are you going to give her the Gatorade?” I ask. The bottle is about half empty, and a dropper is secured around it with a blue rubber band. “Five milliliters at a time? Please?”

My dad closes his eyes and puts his hands together with his fingertips at his mouth, like he’s praying to the God he doesn’t believe in and asking how on earth he ended up with such a weird kid. It’s his fault, really. All of my rats have been from his microbiology lab.

He sighs and turns to me. “I’ll give Five the Gatorade. Today only. My bacteria cultures are probably wrecked for the day anyway since I had to come here.” He rolls his eyes, annoyed but not mad. Life is always interrupting his cultures. Those bacteria are fragile little buggers.

“Thanks, Dad.” I smile. For a guy who routinely gives rats diseases as part of his job, he has a soft spot for them every once in a while. Or maybe it’s just a soft spot for me. Whatever it is, I’ll take it. I turn to Mr. Grant. “So, am I good to go back to class, or . . . ?”

Mr. Grant’s eyes are squinted, and his mouth is slightly open.

My dad takes advantage of the pause and says, “Is this candy up for grabs?” He takes the Butterfinger I was eyeing, holds it up before opening it, and says, “Thanks. I forgot to eat this morning.”

The wrapper crinkles as he unwraps it, and Five's nose wiggles in anticipation.

Mr. Grant regains his composure. "Thank you for coming in, Mr. Davidson. I'm glad you can agree that Skyler's retention of a rodent in class is highly inappropriate."

"Definitely," he says while still chewing the Butterfinger. He turns to me and attempts a stern look. "You're grounded for a week."

We both try to hide smiles. Grounding me is pointless since I'm always home anyway. My dad's phone pings, and he pulls it out of his pocket to read the text.

Mr. Grant adjusts his glasses and searches my paperwork as if the answer to the appropriate disciplinary action is in there. Finally, he looks up. "It looks like you have it handled, Mr. Davidson. Skyler, don't let me catch you with animals at school again, got it? If you bring another rat to my office, I'll have to suspend you."

"Yes, sir." I attempt to look properly chastened.

He puts my papers back in my file. "You can head back to class."

Before we can leave, my dad's phone pings again, and his demeanor changes as he answers a text. He picks up Five and puts her back on my shoulder. "Um . . . That patient I was telling you about with the bizarre fungal infection? The doctors are going through some more testing. I have to get to the hospital."

"What about Five?" I ask.

"Sky." My dad's voice has gone into business mode. "This is a *human* patient. I think we can agree that's a bit more important than Five's Gatorade?"

“But I don’t think I can bring her back to class.” I glance at Mr. Grant.

He shakes his head. My dad is preoccupied, his phone absorbing all of his mental focus.

“Can I go home?” I ask. “It’s already fifth period.”

“That’s fine,” my dad says. He’s already reaching for the door. He hits a number and puts it to his ear. “Hello, Charlie? Yes, it’s me.” He walks out, leaving me alone with Mr. Grant.

I guess my dad wasn’t as mad as I thought he would be. In fact, it seems like he barely cares that his kid landed in the principal’s office. I should feel relieved about this, but the relief feels a little tainted with . . . something else. I don’t know. Could it be disappointment? Sure, I don’t want to be in trouble, but at least he could *care*. Defend me, or defend the school, or somehow invest in the situation a little bit. But he’s already gone.

I look toward the closed door and then back at Mr. Grant. Five starts licking my ear, which tickles, but I don’t laugh. “So . . . can I go?”

Mr. Grant sits heavily into his plushy desk chair. “You are dismissed.”



I’m never home by 2:15. It feels weird to be skipping class. Outside my bedroom window, my street looks like it always does: cookie-cutter stucco houses with red-tile roofing and pebbled yards harboring scraggly trees and an occasional cactus. Standard, boring suburb in Las Vegas Valley.

Still, the architects can't make the insides of our houses look alike. For example, Julie next door has an entire wall of shelving to display her vintage troll dolls. My house has a make-shift microbiology lab in the basement for when my dad either has to bring work home or does his own hobby research here. Sometimes I mention our basement lab when the neighbors are out and about, and I'm pretty sure it's why we don't get invited over much. It's fine with me. The one time we ate at Julie's, shortly after we moved in ten years ago, she talked about the history of trolls for a half hour. I kept wanting to interrupt with "There is no history of trolls because TROLLS ARE NOT REAL," but that would have been rude. Instead, I complimented a blue-haired troll's sparkly tutu in an effort to be nice. Julie ordered me a replica and dropped it off the next week. It sits in my room in a cracked beaker.

I flop onto my bed and start scrolling through Instagram: MIT, CalTech, and Harvard; NASA astronauts; SpaceX; the Hubble Space Telescope and the Webb Space Telescope. I followed a couple of girls from my QuizBowl team once, but they posted too many things about what they were having for dinner and "#blessed" selfies. #Unfollow.

A NASA post stops me. I sit up in my bed and read it again. "Five, does this say what I think it says?" Five runs to the side of her cage and looks out expectantly like she always does when I call her (seriously, rats are the smartest).

This post can't be real.

I boot up my laptop, as if seeing this information on two screens will make it more valid. I check NASA's website to

confirm that the post isn't some hacker pulling a prank. It takes me a second to find the right information page, but then there it is, on a blue background with white stars:

NASA seeks teenager for Teen in Space internship. One teenager to be chosen to assist in research on the International Space Station (ISS) next summer. See application instructions for full details.

The application details are straightforward. The intern needs to be a healthy teenager (check), available for training and a two-month research flight next summer (check), and committed to astronomy research (CHECK!). Applicants need to include a three-minute video on why they should be chosen for this project. I don't know how to make a video, but it can't be that hard.

NASA says they're doing this internship because they want to "invest in young minds" and "encourage the scientists of our future," but I know the real reason why. I follow the Russian Federation's space agency, Roscosmos, on Instagram, too, and a few months ago they posted about putting up the youngest cosmonaut to ever work at the International Space Station: Viktor Ilyokavich, age twenty. While we didn't see much of it on the news, I bet our super-competitive president was all over that. This is probably NASA's direct response to Roscosmos. You send a twenty-year-old? We'll throw a teenager up there. #AmericaFirst.

This is like being five years old, playing Candy Land with my mom, and I just got the Queen Frostine card. That's the one

that basically lets you skip the whole board and go straight to the end. Since middle school, I've had my whole life planned out: get into the Massachusetts Institute of Technology like my mom did, graduate with honors like my mom did, get into their astrophysics doctoral program like my mom did, and then be accepted to NASA's space program to complete the research that my mom *didn't*.

A car accident when I was in third grade brought an abrupt end to her promising career in astrophysics. Some people shoot to change the world, but she was going to change the universe.

I crash onto my bed, grabbing a familiar doctoral dissertation I've read too often. It's hardbound in black with gold lettering on the side: FORMATION OF STRONGLY MAGNETIZED NEUTRON STARS AND IMPLICATIONS FOR DIRECTIONAL ASSISTANCE IN INTERPLANETARY TRAVEL. Below it is the Massachusetts Institute of Technology logo and then my mom's name: Renae Davidson. The gold ink has started to smudge on her name because I've run my fingers over it so often, but I do it again now.

"I'm going to get there," I whisper to the name. "I'm going to finish this for you."

Just last week, my MIT dreams were in jeopardy. My SAT scores came back significantly lower than I expected, and I was wrecked for that whole night. One of my QuizBowl teammates said that doing poorly on one test is no reason to binge-watch seven hours of *My Fast-Food Life*, but she got nearly a perfect score. Also, her mom isn't counting on her like mine is.

I've been too ashamed to tell my dad, especially since he paid for all those prep classes, but now it's like I have another chance.

What kind admissions board would turn down a NASA intern? I can pretend like those SATs never happened.



It's nine o'clock by the time my dad gets home.

"Good news," he says. "They think the treatments have worked. We'll keep doing follow-ups, but looks like we zapped it. I wish I could magnify bacteria a million times so I could punch it in the face." He smiles at his joke, but the dark circles under his eyes betray how many late nights he's spent at the hospital trying to solve this one.

"I made you dinner," I say. "Chicken piccata. It's in the oven on warm."

"Oh yeah." He slaps his forehead. "Food. Thanks. What would I do without you?"

If I didn't cook, my dad would either die of starvation or live off the Chinese take-out place that's a mile from our house. He's a loyal follower of General Tso.

I sit on the barstool next to my dad while he eats. "You're not going to believe what NASA announced today." It's hard to sit still. Before he asks what it is, I slam the printed copy of the announcement on the counter. "I might be going to space next summer."

He takes a drink of water and another bite of chicken while he reads the article. His eyes should be widening by now. He should be hugging me or cheering. Instead, his eyebrows furrow.

He picks the papers up to read them again. Then he puts them down, swallows his bite, and says, “Interesting.”

Interesting? This is probably the most exciting opportunity I’ve ever had, and all he says is “Interesting”?

“Dad, are you serious? This is NASA. The big leagues. The dream. The fact that you collect antique petri dishes is ‘interesting.’ This is . . . I don’t know. This is monumental.”

“SkyBear.” I hate when he calls me SkyBear. The nickname doesn’t even make any sense. “I don’t know if this is a great idea.”

It feels like someone pulled the barstool out from under me. “Not a great idea? How is this not a great idea? We’ve been talking about this for years. I could finish Mom’s research.”

“And I support you in that.” He holds up his hands. “When you’re old enough. When you have the background and the necessary knowledge.”

“Dad, I know more about neutron stars than most grad students. I’ve read every single piece of literature that I’ve been able to find. There are notebooks in my room full of notes and flow charts of what needs to be done to get the data mom needed.”

“I know.” He sets his fork on our granite countertop. “But NASA isn’t for teenagers.”

I wave the papers. “It is now!”

“It’s not.” He wipes his mouth. “Space travel is dangerous. To be honest, I’ve always figured you’d change your mind. Or maybe there would be technology that would allow you to finish Mom’s research from here. I already lost your mother, Sky. I can’t lose you, too.”

“I’m not dying, Dad. I’m going to space.”

“No, you’re not.” His mouth is set in a hard line.

“Wait, are you saying I can’t even apply for this?” That was the last thing I expected. As a matter of fact, I hadn’t even considered it.

“Apply to college, not NASA. That’s what normal teenagers do.”

My guilt morphs into anger. “So I’m a normal teenager now?”

When my mom died, I went straight from child to adult. There was no teenager. The summer after third grade, our electricity got shut off. That’s when I learned what a bill was. Now I’m in charge of paying all of them. That fall, I built a Barbie dream house out of pizza boxes and Chinese take-out containers. A toilet paper tube served as Barbie’s telescope. My dad wasn’t as impressed as I’d hoped, and cookbooks started coming from Amazon soon after. He had a few “cooking dates” with me, but as his nights at the lab stretched longer, the cooking became more of a solo affair. While waiting for my dad to come home each night, I would study my mom’s dissertation. It was my bible—it had all the direction I needed in life, and I worshipped the author. My dad would come home, apologize for being late, then tell me what a great kid I was and promise to be home sooner next time. We would talk about neutron stars and bacteria while he ate the plate of food I left in the fridge for him, and life wasn’t all that bad. Not bad, but not normal.

“Sky, that’s not what I meant.”

“Then what did you mean?”

“Just please don’t. Leave this one alone. You know it’s a publicity stunt because of Viktor What’s-his-name.”

“Viktor Ilyokavich. So what? It’s my break.”

My dad takes a deep breath. “Mom’s not here to appreciate you even if you do finish the research, SkyBear. You have to move on.”

Hot tears sting my eyes. “Like you have?”

My mom’s Chanel perfume still sits on his dresser. Her necklace with a Saturn pendant is next to it. Her reading glasses are still in the drawer of her nightstand, right next to the book she was reading before she died. The bookmark will never move to the next page.

After my mom died, it was a slow evolution to friendlessness for my dad. “Let me bring you dinner” turned into “Tell me if you need anything,” which eventually became “We haven’t seen you in forever, man.” And then one day, no one checked in anymore.

“We all have our own ways of coping. I’m not hurting anyone by dedicating time to my work.” It looks as if he’s talking to his plate.

“I’m not hurting anyone by trying to finish mom’s research.”

“It’s too risky. You can’t do it.” He takes a drink of water as if this is settled. Like he’s washing back the bitterness of the words coming out of his mouth.

“I can’t do it? Now suddenly you’re parenting me? You haven’t told me what to do since I was ten years old.”

“That’s because you always do what you’re supposed to. You’re an easy kid.”

“Maybe it’s time I became difficult.” I take a drink of his water and set the glass down a little too hard. “This is my dream, Dad.”

He doesn’t forbid me to do things. He’s working so often that he probably wouldn’t even notice if I started making what my

teachers call “negative life choices.” The last “crazy party” I had was for my birthday, and it included Five and me helping my dad with his research. My cake (which I made) was in the shape of an Erlenmeyer flask. I even put a little indentation at the top for a baking soda and vinegar reaction to make it foam over. It was really cool, but it made the cake taste kind of gross.

Wait a minute. I’m eighteen now.

As a legal adult, he can’t stop me from applying even if he wants to. The thought is triumphant and terrifying. “I’m an adult, you know,” I say. “You can’t technically stop me.”

My dad’s shoulders sag even farther down. He puts his elbows on the counter and his head in his hands. When he looks up, his eyes are glassy. I’d prefer he was angry. I wasn’t ready for glassy. My dad is classic tungsten—the element with the highest melting point. It takes a lot to break him down.

“Please don’t do this, Sky. You can’t put yourself in this kind of danger. If you didn’t come home, it would kill me.”

My love for my mom and my love for my dad battle inside me. To abandon this chance might mean abandoning the only opportunity to finish my mom’s research. There have been so many whispered promises to her: to her photos, to her gravestone, to her dissertation, to the night sky itself—I have promised all over the place that the research would be finished. Then again, my dad’s right. She won’t know whether or not her research is ever completed. And although I’m willing to risk my life in pursuit of this research, I saw what losing a family member did to my dad. We stayed at the gravesite so long that first night that the sky was a dull predawn gray when he nudged me awake, picked me

up, and trudged back to our car. Then he cried at the steering wheel until the gray turned to a pale rose. I remember patting his shoulder and saying, “It’s okay, Daddy. Don’t cry.” Not because it was okay, but because seeing my stoic dad falling apart made it feel like I was losing both parents. In a way, I did. But my love for my dad means that I would do anything to keep him from going through that again. He wouldn’t have anyone left.

“Fine.” I cross my arms and study the chicken piccata. “I won’t apply. I’ll focus on college.” My eyes are still burning as I crumple up the printed pages and throw them in the trash on the way up to my room.

It’s the first time I’ve ever lied to my dad.