

THE IMMORTALITY CODE

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First Edition

PART 1

“Let’s be clear: the work of science has nothing whatever to do with consensus. Consensus is the business of politics. Science, on the contrary, requires only one investigator who happens to be right, which means that he or she has results that are verifiable by reference to the real world. In science consensus is irrelevant. What is relevant is reproducible results. The greatest scientists in history are great precisely because they broke with the consensus.”

—Michael Crichton.

1

Dr. Allison Keane entered the modest home she was renting and collapsed onto a comfortable beige sofa. She had just returned from treating herself to a rare breakfast out and her taste buds were positively *humming*. She took a deep, cleansing breath, closed her eyes, and let herself drift through the cavernous darkness, alone with her thoughts.

Could it be that she might finally be getting back on track?

She was afraid to even think it, to allow herself to believe it for a moment. In a more innocent time, she would have been giddy, literally dancing in celebration and fantasizing about a glorious and consequential future.

But this was not a more innocent time. This was long after she had had her dreams torn from her as cruelly as a bully might yank the legs from a spider. Long after she had been confronted by pure evil, and had lost.

Lost her dreams. Lost her belief in justice. And lost her way.

But for the past three years she had begun to claw back. To inch her way out of the pit of Hell. And the step she had just taken was far greater than just an inch. It was an exhilarating explosion that could launch her from the depths of despair to towering new heights.

As jaded as Allie Keane had become, even she had to admit that her life was finally looking up.

If one could call what she had a *life*. She spent every waking hour she wasn't eating or exercising pursuing her passion. And while she considered herself lucky to be able to do so, there was such a thing as *balance*, which was something she had woefully neglected.

But she vowed that this would begin to change starting now. No time like the present.

Three mornings earlier, she had finally gone public with the results of her last two years of work, a pre-publication of a theory that she was convinced was groundbreaking, and would finally garner the respect and acclaim that had been stolen from her.

She had only published the big-picture version of the theory, and only in an online physics forum, but the more formal, thorough version wouldn't be far behind. First, she wanted to test the waters, get an initial reaction. This way, she could better address the vicious critiques and dismissals she knew would be par for the course from scores of smug, entrenched physics luminaries, who might be brilliant, but who were often trapped by group-think and fearful of venturing wildly beyond accepted physics dogma.

Every truly revolutionary advance was met with harsh resistance when first introduced, and she expected her ideas to be treated more brutally than most. As the German philosopher Arthur Schopenhauer had famously expressed, "All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident."

Of all the quotes she had ever read, this was her favorite. Followed by one from the great pioneer of quantum physics, Niels Bohr, who had said, "We all agree that your theory is crazy. The question that divides us is whether it is crazy *enough*."

Online comments regarding her revolutionary ideas were already flying in. The last time she checked, right before retiring the night before, she had found dozens of savage, biting critiques. But also two responses from world-renowned physicists who had issued guarded praise of her ideas. Shocked praise, really, which almost seemed pried from them against their will, but praise nonetheless.

She could only imagine their dismay as they read her work, expecting glaring, amateur-hour errors and relishing the chance to poke holes in her ideas, math, and conclusions large enough to swallow continents. Relishing the chance to put the lowly Associate Professor of Quantum Physics, just recently promoted from the even lowlier rank of postdoctoral fellow, back in her place. An associate professor at the University of South Dakota no less—an institution that few of

the elite physicists at MIT, Stanford, Princeton, or Cambridge could even find on a map.

But instead, these two giants had grudgingly admitted that her work was original, groundbreaking, and in some ways, breathtaking. She had to give them credit for this admission, which she wasn't sure would be forthcoming, and which couldn't have been easy while commenting on the work of a physics peasant. It was as if Luciano Pavarotti found himself upstaged by a tenor he had stumbled upon singing opera to a herd of cows in a pasture.

Allie hadn't always been considered a physics peasant. In fact, many years earlier, she had been thought to be quickly moving toward physics royalty. She had been a child prodigy beyond compare, but with a personality that didn't draw attention to this fact. Many she encountered had marveled that she came across as a fun-loving and well-adjusted "normal" kid. She had frequently been compared to a character on a show called *Young Sheldon*, a little blonde girl named Paige Swanson.

The show centered on a pre-teen genius named Sheldon Cooper, who was portrayed as being stereotypically quirky and socially inept. But Paige Swanson was a character who broke this mold. As brilliant as Sheldon, but personable, extroverted, and anything but robotic. Allie had been told she resembled this character, not only with respect to her personality and genius, but her appearance as well, although Allie's hair was light brown instead of blonde, and her eyes were green rather than blue.

At the age of fifteen, an only child, Allie and her parents had moved from South Dakota to Acton, Massachusetts, so she could live at home and attend MIT. She graduated three years later at the top of her class, and then continued on at the same revered institution, working toward her Ph.D. in quantum physics.

But as she approached her twenty-second birthday, just as she was putting the finishing touches on her Ph.D. thesis, her life took a tragic turn. In the blink of an eye she was swatted from her towering pedestal and impaled on jagged rocks below. Her beloved parents were hit in their car by a drunk driver on the interstate, killing her father instantly and leaving her mother barely alive.

Her mother, Mary Keane, did manage to hang on by a thread for six months, through dozens of surgeries, which did little but provide false hope and prolong Allie's agony. During this nightmarish stretch, Allie's emotions were laid bare, as despair and heartbreak suffocated her normally upbeat spirit, and stress shredded her gut as surely as if she had eaten a bucket of broken glass. It was the most horrible six months of her life.

But this was only the beginning.

After taking off two additional months to mourn the loss of her parents and get her head on straight, Allie returned to MIT to finish her doctorate, only to discover that her advisor, Abraham Sena, whom she had admired, had stolen her thesis while she was gone, publishing it as if it were his own work.

Instead of losing herself in her work to help recover from the tragic loss of her parents, Sena had seen to it that Allie was pushed even further under the murky seas. And held down. Because robbing her of the fruits of her labor and genius wasn't cruel and horrific enough. Sena needed to twist the knife, to insulate himself from Allie's certain fury, accusations, and attempts to prove his theft.

So he had framed her. Obliterated her reputation and credibility.

Esteemed Professor Abraham Sena had managed to perform a hacking magic trick, erasing all traces of her work from her computer and even from her account in the cloud, and adding overwhelming evidence that *she* had been the one planning to plagiarize *him*.

Sena's defamation of her had been genius, his manipulation of hearts and minds an evil masterpiece. And he had the reputation, the legitimacy, that she did not. He even had the gall to pretend to be sympathetic to her for having carried out the crime for which he had framed her, insisting only that she be thrown out of MIT in disgrace, but pleading that this should be her only punishment. It was tragic, he had said, that this poor girl had entered a stressful graduate program too young, got in over her head, and had flamed out.

And given the even more tragic loss of her parents recently, she should be pitied rather than loathed.

It was all too much for what was left of Allie Keane, and she came very close to a nervous breakdown. She spiraled down into the depths of Hell, finding drugs, and sex, and alcohol—and always despair.

But, somehow, after a number of lost years—little more than a drug-addled blur in her memory—she had slowly, painfully, turned things around. She had sobered up, and had begun to put her life back on track. And while it had taken time, she was still only twenty-eight, and there now seemed nowhere to go but up.

She frowned deeply, her eyes still closed in contemplation.

Nowhere to go but up, she repeated in her mind. Sure. She wasn't about to fall for *that* again. After all, she had thought this once before, six years earlier.

So now, despite the unexpectedly positive reactions her work had earned, she found herself more wary than hopeful. She had become so traumatized by the loss of her parents, and the theft of her work, that she now cowered in fear after being handed a beautifully gift-wrapped present, sure that it was only a matter of time before the box would blow up in her face.

She shuddered as she imagined eagerly pulling open a red-satin bow on a magnificent gift, only to have the package explode, vaporizing her entire head in an instant.

A loud rap at the door interrupted Allie's reverie, just as she was envisioning this grisly scene, and she almost jumped out of her skin. Her eyes shot open and she bolted off the couch, an anxious expression now firmly frozen on her face.

Who could it be? She wasn't expecting any deliveries, and it was still only nine in the morning. And she hadn't had a single visitor in over a year.

Her phone was off, resting on an end table in her bedroom, so her door cam was no help. She would just have to learn the identity of her visitor the old-fashioned way, by actually opening her door, as barbaric as this method now seemed.

Given when the knock had occurred in her stream of thinking, she couldn't help but imagine that it portended something truly horrible. Part of her wanted to pretend not to be home, ignore it. But she knew to fight this instinct. Just because her world had been gutted before,

at the most optimistic point in her life, didn't mean it would happen again.

But it also didn't mean that it *wouldn't*.

Dr. Allison Keane took a deep breath, braced herself, and reached for the doorknob.

2

Allie swung open her front door to reveal a slim woman wearing too much makeup and too much jewelry.

“*Kathy?*” she said in shock as the visitor came into view.

Her neighbor, Kathy Angus, was the last person she expected to find standing there. Allie had only seen this woman a handful of times since their initial introduction two years earlier. Not entirely surprising, since Allie had made it a point to keep to herself, and typically left early for the university and returned late. “Is everything okay?” she added warily.

“Hello, uh . . . Allie,” said her visitor, as though having to dredge up this name from the depths of her memory. “Sorry to bother you so early.”

“Not at all,” replied Allie, still wary, making no move to invite her neighbor inside. “Actually, I’ve been up for hours. What can I do for you?”

“Did you just post some kind of . . . *physics* paper online?”

Allie’s mouth fell open. Her neighbor worked as a hairdresser. If Allie had made a list a thousand pages long of possible questions Kathy might ask, this wouldn’t have been on it. She tilted her head in dismay. “How do you *know* that?” she said. “Only a few thousand people in the world should know—at most. And they’re all frequent visitors to the Cambridge Quantum Physics Forum.”

Kathy shrugged. “Well . . . here’s the thing, one of the people who know about it just called me on my cell about ten minutes ago, asking about you. A guy. Deep voice. Called himself John. Said he had read your work but was having trouble contacting you. Suspected your phone wasn’t on.”

Allie shook her head, barely able to believe what she was hearing. “So why did he call *you*?”

“Yeah, no kidding. I asked him the same thing. Turns out he wants to offer you a job. I told him that this was great and all, but it still didn’t answer why he was bothering *me*. You were bound to turn your phone back on at some point today.”

Kathy frowned. “Speaking of which,” she continued, “since you’re awake and dressed, why *isn’t* your phone on?”

She asked the question as if it was one of the deepest mysteries of the cosmos. As if the idea of *not* having a phone on and by one’s side every waking instant was *inconceivable*.

The answer was simple. Allie’s job required very deep, very sustained thinking. And cell phones were the ultimate distraction, carefully designed and evolved to become as addictive as possible. She had been sucked into the satanic device’s irresistible black-hole pull completely just after she had emerged from what she called her dark years, having traded one set of addictions for another. But she had finally managed to beat this back also, to the point of maintaining an almost monk-like phone celibacy. Prior to this, even having the cursed device in the same room with her resulted in her checking it every five minutes, a drug addict willing to kill, if necessary, for a desperately needed hit, each time destroying her train of thought and forward momentum.

And maintaining a laser-focused train of thought was *everything* for a theoretical physicist. Yes, she read literature and conducted other research, but radical breakthroughs were most likely to come about through thought experiments and insane leaps of imagination. Which meant hours at a time of lying on the couch in her office with her eyes closed, looking to be asleep, and trying to force her tortured brain to forge unique connections between unrelated physics knowledge and theories that she had crammed inside. Only stopping each day when her mind screamed for mercy. Then rinse and repeat, day after day, year after year.

Most of the time this exercise was pure, unadulterated torture. Flailing blindly in the abyss of her own thoughts, almost panicking as she went around and around in circles, unable to force a connection, drowning with no sign of a single buoy to grasp onto.

Her job description sounded like heaven to outsiders, being paid to lie around and be creative. Generate ideas.

If only truly revolutionary ideas didn't require such agony to achieve, the mental equivalent of pushing the biggest of newborn babies through the tiniest of pelvises.

When Allie was flailing around in her own tortured skull, she'd seize on any excuse to come up for air, and a cell phone was far too tempting. If she wanted to attack the mysteries of the universe, her phone needed to be off and out of reach—for days at a time. It was as simple as that.

Not that her neighbor would have interest in any of this, or that Allie wanted to take the time to explain it. "My phone's in the other room charging," she lied instead. "The battery died while I was sleeping."

She leaned forward intently. "But let's get back to the conversation you had with this *John*. When you asked him why he was bugging you about me, what did he say?"

"Just that he'd like to offer you a job, and didn't want to waste even a minute. Said he wanted me to stop by and ask you to turn on your phone."

"You do know how crazy that sounds, right?"

"Tell me about it. I thought it was some sort of prank call. Or a scam. Or a guy who might be some kind of demented killer. I mean, it's creepy how he knows I live next door to you, and also my phone number. How did he manage that?"

Allie arched an eyebrow. "Well, there are probably ways. By checking county records of home purchases and so on. But it would take some work." She paused. "Not that you aren't right to be concerned about his motives. But you're here, so you must have decided he was legit. Why?"

"When I hesitated to do what he asked, he had me check my bank account. When I did, I saw that five grand had just been wired in. Five grand! He said he'd deposit five more if I'd stop by and ask you to turn on your phone."

"Ten thousand dollars? To stop by a neighbor's house for a few minutes? Just like that?"

Kathy nodded. "Just like that."

"And that didn't make you even *more* suspicious?"

"It did. But it also made me a lot wealthier. So I figured, what the hell?"

Allie considered. He could have probably gotten Kathy to do this for free, but if not, for a few hundred dollars at most. Wiring this much money into Kathy's account, when she hadn't even given him routing numbers, was his way of showing off. His way of getting Allie's attention.

And it had worked like a charm. He *definitely* had her attention. And then some.

"How did he get the information he needed to wire you the money?" she asked.

"I don't know. But my bank told me that it's much easier to put money into someone's account than take it out. Which is, you know . . . comforting. But the bottom line is that this guy must be loaded, and he's got some serious interest in talking to you."

Kathy raised her eyebrows, extending eyelids that were painted a dark shade of blue. "So if I were you," she added, "I'd turn on my damn phone."

She shrugged innocently. "You know . . . just saying."

3

Commander Zachary Reed, dressed in civilian clothing, looked up from his tablet computer to briefly admire his luxurious surroundings once again, still finding them hard to believe. He was used to being crammed inside the dark belly of a transport plane, flying with lights off and under the radar, waiting to parachute into hostile territory to conduct deadly incursions.

And now? Now he was the sole passenger inside the latest Gulfstream luxury jet, with a fully stocked bar and refrigerator, sitting in a chair and a cabin so spacious, so comfortable, so *decadent*, that the finest first-class compartment of any commercial airline seemed like a cattle car by comparison.

He allowed himself a brief, satisfied sigh before shifting his eyes back to the tablet, where he had been absorbing the latest developments in genetic engineering made possible by the miracle of Crispr/CAS9 genetic engineering technology.

He had a lot of catching up to do.

Technological innovation was erupting across the world far faster than at any time in history, as scientists with fertile imaginations stood on the shoulders of giants and had access to an array of exponentially evolving scientific building blocks.

And Zachary Reed was expected to get up to speed on much of it—at least at a workable layman’s level—in record time. He had been assigned to an off-the-books black ops group called Tech Ops for two weeks now, and had never crammed more.

Tech Ops military personnel often dressed and operated as civilians, both inside and outside of the country, with elaborate false identities and lavish bank accounts that legitimized them. This helped them spy on emerging game-changing technologies, influence scientists, commit espionage, or carry out counter-espionage operations

as required. As a field operative within this black-ops organization, Commander Zach Reed had been given the broadest of latitude to do anything necessary to complete his missions. *Anything*.

And this type of wide latitude had been given for good reason. Because the stakes behind what Tech Ops was chartered to do were exceedingly high. Reed had just left SEAL Team Six, where he had been a special operator, a commando, so he knew something about high-stakes missions.

But in the big picture, the work he would do for Tech Ops would have a much greater impact on world affairs, on the future of humanity, than that of his all-too-famous former unit. Leaving the SEALs after almost seven years hadn't been easy, but he had finally decided that he had seen too many horrors, too many atrocities, and had been forced to kill too many people.

Besides, Reed wanted to avoid leaving the unit the way many of his comrades had—zipped up inside a body bag.

So at the age of thirty-three, after seeing more bloodshed than most soldiers would in five lifetimes, it had been time to move on. Not that he hadn't loved his old job. He and his team had saved more lives than anyone would ever know, from more horrific plots than anyone *could* ever know, lest the population of the country be turned into a nation of insomniacs, never to sleep soundly again. He loved the skills, athleticism, and almost superhuman physical conditioning required—not to mention the vital nature of his missions and the adrenaline rush that came with the job, which made free climbing sheer cliff walls seem almost boring by comparison.

SEAL Team Six was possibly the most elite unit of any in the world. And while this nickname for the Naval Special Warfare Development Group confused many into believing that it was a single, twelve-member A-team, the reality was that the group was almost four hundred operators strong.

Even so, Commander Zachary Reed had been considered one of the best. He had been told that if SEAL Team Six did consist of a single twelve-man A-team, he would have been on it.

But despite leaving his sterling reputation and brothers-in-arms behind, he was already convinced that the powers that be had put

him in the right place. Since Tech Ops was a black program, he hadn't even known it existed, but was told that both human experts and AI algorithms had examined his profile and agreed that this was his best destiny. He loved science and science fiction and was exceptionally adept with technology. And, apparently, he had scored as one of the brightest of the SEALs—which was quite the compliment given that raw intelligence was just as critical a criteria for choosing recruits in this elite group as was bravery and extraordinary combat abilities.

So here he was. Assigned to a large, powerful organization that wasn't acknowledged to exist, run by a woman named Colonel Sarah Hubbard. An organization that had only come into existence a handful of years earlier, but had grown at breakneck speed, both in size and importance.

Although rarely brought up in polite society, the world was in the midst of a new kind of cold war. A war for technology supremacy.

For millennia, countries with the biggest or most effective armies reigned supreme. Size, might, and economic capacity led to dominance.

World order was determined by fourth-grade playground rules. The biggest bully won. Period. Brawn over brains, without exception.

But in modern times this was no longer—necessarily—true. Vast national resources and a Manhattan Project were no longer required to dramatically change the global power structure. Large, rich countries were more likely to dominate technology than small, poor ones, to be sure, but there was no telling when a small country, or even a group of individuals, could develop something that would change the balance of world power overnight.

It was now a world in which a high school student could use the immense power of CRISPR/Cas9 genetic engineering techniques to launch a global pandemic, or hold the world hostage with such a threat. When private companies could get to space at many times the efficiency and at a fraction of the cost of all world governments combined. When advances in AI, the internet, spyware, and ultra-high-powered lasers could trump massive traditional armies, millions strong.

So a cold war had arisen. A war to stay ahead in the tech race on the one hand, and to sabotage and monitor the tech of other nations on the other. And the stakes were truly unfathomable.

Every nation was in the game, more or less. And not just the usual suspects, such as Russia, Israel, North Korea, India, and Iran, but scores of others, some allies, some not, but all worth watching.

Still, there could be no doubt that the two heavyweight contenders in this battle for supremacy were the US and China, even if the US was the last country on Earth to recognize this truth.

Just as had been the case with respect to bin-Laden and Isis, China had caught America asleep at the wheel. Fat and overconfident. A hare so dominant that it actively helped the tortoise catch up, not knowing the tortoise would repay this kindness by kneecapping the hare and bursting into the lead.

The Chinese people were, by all accounts, a wonderful group—generous and peace-loving—but their government had become totalitarian. While America slept, Xi’s China grew ever more militant, with the Chinese Communist Party making it clear to anyone who wanted to take notice that it considered the US its enemy, even going so far as to publicly declare a “people’s war” on America.

And still, the vast majority of leaders and citizens in the US remained in blissful ignorance, unaware that anything was happening between the two superpowers other than the occasional rhetorical or trade war.

Finally, at long last, the battle was formally joined when the head of American Black Ops, General Eric Orlando, read a very short book in 2020, written by a man named Gordon Chang, entitled *The Great U.S.—China Tech War*. This short treatise had laid out the situation in stark, unmistakable terms. “America needs to prevent the world’s most dangerous regime from dominating the world’s most powerful technologies,” Chang had written. “And we need to be prepared to take drastic, emergency-like measures to prevent Chinese success.”

Perhaps one sentence summed it up best, “The United States and China are locked in a cold tech war, and the winner will end up dominating the twenty-first century.”

So “Tech Ops” was born. To keep watch on technology developments around the world, and especially the activities of the communist Chinese, a government that for many years had bribed businesses, scientists, and politicians, stolen intellectual property, perfected a public relations campaign to whitewash the truth and burnish its image that the most duplicitous Hollywood publicist would envy, and had committed whatever ruthless unlawful acts were necessary to gain the upper hand.

And in many areas China had raced ahead of the world, most recently when it came to critical 5G wireless internet technology and AI.

But Tech Ops was founded not just to keep watch, but to actively enter the game—at long last. To do what it took to fend off the threat from China and every other country in the world. To fight fire with fire.

Reed looked up again from his reading as the tiny smart comms embedded deep within his ears sprang to life, delivering the pleasant feminine voice of his personal AI assistant. The AI, which he had named Eve since it was truly the first of its kind, resided not within Eden, but within the world’s most impressive supercomputer at NSA headquarters hundreds of miles away, enabling it to freely draw on all of the NSA’s data and capabilities. It was the most advanced AI, by far, ever developed, and only a few hundred operatives had authorized access.

“*Commander,*” it said, “*I’m receiving a video call from Colonel Hubbard. Do you want it displayed on your contact lenses or tablet computer?*”

“Lenses,” he replied immediately, and seemingly before he finished the word his commanding officer’s face was projected onto his smart contacts in such a way as to make it appear three-dimensional, about half life-sized, and floating about three feet in front of his eyes.

“*Commander Reed,*” said the holographic image without preamble, “it seems we have a bit of a . . . situation. We need you to abort your current mission and take on one of more urgency. A new flight plan has been filed. Your pilot is being ordered to proceed at best speed to a new destination, even as we speak.”

The jet suddenly banked sharply to the north, right on cue, exerting enough force on its sole passenger to underscore the sense of urgency.

“Roger that, Colonel,” said Reed. “Where am I headed?”

“Vermillion, South Dakota.”

Reed raised his eyebrows. He wasn’t even aware that this was an actual place. “Please repeat,” he requested. “I thought you said Vermillion, South Dakota.”

“I know,” said Hubbard, shaking her head. “I was just as surprised as you are, Commander. Turns out a twenty-eight-year-old scientist there made what looks to be a breakthrough in qubit design. Dr. Allison ‘Allie’ Keane.”

The commander nodded. He might be new, but he had understood the importance of such a discovery even before joining Tech Ops. A qubit, short for quantum bit, was the fundamental building block needed to construct a quantum computer.

At twenty-eight, this Dr. Keane was awfully young, although Reed had to remind himself that he was only five years older. After an extended stint with SEAL Team Six, he sometimes felt like a senior citizen.

He checked his location, noting that he was over Nebraska, which bordered South Dakota. He had been traveling to a tech conference in New York from his home base in California, so the timing of Hubbard’s call, when he was at his closest to Vermillion, had not been accidental.

“This could be a huge deal,” continued the colonel. “Because after Dr. Keane made this breakthrough, she posted it on a wide-open online physics forum,” she added disapprovingly.

“Well that . . . sucks,” noted Reed.

“Yeah. Even worse, we’re running very late on this one. Since you’re my closest asset, I need you to protect this woman and recruit her if possible. Too late to put this genie back in the bottle, unfortunately. You’ll be landing at Sioux Falls Regional Airport, about sixty miles from Vermillion. I have your flight time at approximately forty minutes. A heavily armored van is already *en route*, loaded to the gills with weaponry, drones, two portable, shoulder-fired rocket

launchers, and so on—just in case—and capable of driverless operation. I'll send the specs on it and the weaponry we'll have loaded inside. It's fairly large, all electric, with the engine and other vital organs protected within a carbyne shell, straps below for stealth incursions, and an extendable triangular ram, made of the same ultra-hard steel as an excavator bucket."

"Impressive," said Reed. "Thanks."

"I've also scrambled six plain-clothed commandos out of Fort Carson," added the colonel, referring to an army base in nearby Colorado that was home to the 10th Special Forces Group. "They're in the air with a faster ride than you have, so they should land in about twenty-five minutes. They're yours to command as needed. Both the van and men should be on the ground in Sioux Falls when you arrive."

"Roger that," said the commander. "So who is Dr. Keane? And what's she doing in Vermillion, South Dakota? Last I checked, Silicon Valley didn't extend quite that far."

The colonel smiled. "Yeah, that's an understatement. She's an associate professor at the University of South Dakota. Which is one of the reasons she flew under our radar. Not just under, but not even in the same universe as our radar. Which could turn out to be a big problem. You've only been on one assignment, Commander, but given your impeccable record with the SEALs, I'm counting on you to make this work."

"I won't let you down, Colonel."

"Well, we may have let *you* down, Commander. This is as tardy as we've been with something of this potential magnitude. It's likely most interested parties also failed to keep tabs on this Dr. Keane, but not all. And everyone will be waking up soon, if they haven't already. So we're likely already late to the show, which could be very bad."

Reed frowned. Science used to be done out in the open, in a collegial atmosphere, more or less. But the money that could be made from new tech, and the tech wars being waged throughout the world, had changed that dramatically. For certain key areas of science, sharing breakthroughs publicly the moment they were made was a thing of the past.

Powerful players, both governments and individuals, took care to identify promising scientists and approaches, and to forge lucrative agreements to see any breakthrough work first before it was made public. Or forged other arrangements, including funding the research for a guaranteed license to any results, with preset financial terms for such acquisitions.

Key scientific discoveries were now driven underground, hoarded, covered by ironclad NDAs. This wasn't how science was supposed to work, but in modern times technology had repeatedly shown an ability to remake the entire world in the blink of an eye, so it had become the new reality.

Whether the world would be controlled by dictatorship or democracy could well come down to a single scientist. The recruitment and control of individual geniuses had become far more important than it had been at any time in human history.

If a lucrative deal couldn't be signed with a key prospect, Tech Ops would at least see to it that the prospect was monitored, at minimum, for any signs of a breakthrough, and to make sure that any American scientist was prohibited from working with China or other nations.

"Just how earthshattering is this discovery?" asked Reed.

"Very," said the colonel simply. "And by posting it so publicly, she basically unleashed a ball of bread into the ocean."

"I'm not sure I follow."

"My version of chumming the water, Commander. Or for those who like more violent metaphors, throwing a bloody hunk of meat into a shark-infested ocean, or a piranha-infested river. I think of bread because I have personal experience with it. When I was fourteen, my parents and I went on a touristy snorkeling outing while vacationing in Hawaii, and the boat we were on offered loaves of bread and fixings for passengers to make sandwiches. I came up with the epically bad idea to use the bread to entice fish to come into view. I wet an entire loaf and wadded it up into a giant ball. Then I swam away from the boat, dived down about ten feet, and proceeded to obliterate the ball into thousands of tiny bread particles."

"I take it that this worked better than you expected."

The colonel laughed. “Just a little bit,” she replied. “Within seconds I’m pretty sure every last sea creature in the entire Pacific was surrounding me and the ball. I suspect there were at least a billion of them, but I didn’t stop to count. I was too busy panicking and swimming away like my life depended on it. The bread almost certainly didn’t attract any carnivores, but I’ve never been so terrified.”

“So you’re saying Dr. Keane had better be a good swimmer.”

“Yes. And you had better be a good lifeguard, Commander. Because God knows how many fish are already on the way.”

4

Reed sighed, wishing he had had a few more months to study up and gain his footing within Tech Ops before becoming the point man on a mission of this potential importance.

He looked deep into the eyes of the holographic face floating in front of him. The colonel looked anxious, as if willing the Gulfstream to go faster than its top speed. “Let me give you a quick background on Dr. Keane before I sign off,” she said. “You’ll find a much more extensive briefing in your inbox.”

“Understood.”

“Dr. Keane published her theory on Monday,” continued the colonel with a scowl. “Three entire mornings ago. No one in our organization even got around to reading it until last night. That’s how off the radar she was. Our watch-lists are quite extensive, but not only wasn’t she on the primary list, she wasn’t on the secondary or tertiary lists either.”

“So basically, you thought the bag boy at Ralph’s had a better chance of coming up with a game-changing tech breakthrough than her?”

Hubbard couldn’t help but smile. “Thanks for not rubbing it in,” she said wryly. “But you’re not wrong. After one of our lower-ranked scientists read the work last night, she immediately kicked it up to our chief quantum scientist for review, urgent priority. He spent hours on it, convinced that Keane’s work could well be revolutionary, and our people spent the rest of the night getting a handle on her. We really dropped the ball on this woman. *I* dropped the ball,” she amended emphatically, and Reed was impressed with her instinct to take personal responsibility.

“How could you have known?” he said. “Sounds like she came entirely out of left field.”

Hubbard sighed. “Not as much as you might think. Which brings me back to her background. She was a physics savant before she was old enough to ride a bike. Unlimited promise. About to get her Ph.D. in quantum physics from MIT when she was caught stealing work from her professor and kicked out. She claimed he had stolen the work from her, but the evidence against her was overwhelming.”

“But now we know she was framed,” said Reed.

“Very good, Commander. We can’t know that for certain, but the fact she produced this kind of groundbreaking work at the University of South Dakota, good old USD, without anyone at MIT to steal from, suggests this is the case. After she left MIT she basically had a nervous breakdown. Fell off the edge of the world. Lived on the streets. It’s a wonder she survived.”

“How did she turn things around?”

“Sheer force of will. Got clean, and formed a plan. She grew up in South Dakota, so she returned there and applied to USD’s physics grad program. She was interviewed by several professors, who realized that her quantum physics IQ was off the charts. Even after coming off a multi-year bender that was bound to have destroyed countless brain cells. She normally would have been a superstar at a prestigious university or high-tech company, but she was too tainted for anyone to touch.”

“But USD was willing to take a gamble where others wouldn’t. Because if she panned out, this was their only chance, ever, to get someone of her caliber.”

Hubbard nodded, looking as if she was favorably impressed with her new recruit. “Exactly right, Commander. And Dr. Keane was as dazzling as they had hoped. She finished her Ph.D. from scratch in less than a year, and then stayed on as a post-doc. She was promoted to associate professor just a few months ago, less than two years after enrolling. Her rise was meteoric.”

“But you and the world had lost track of her during her skid row days,” said Reed.

Hubbard nodded miserably. “Which is understandable,” she said. “But we failed to reacquire her when we should have.”

“Was USD off your radar?”

“Not entirely. We focus the lion’s share of our attention on the most prestigious companies and universities, but we do also keep one eye trained on universities like USD. But only on their scientific stars. And Allie Keane was only a newly minted associate professor. So, like you said, she might as well have been bagging groceries. Still, we missed a critical data point. Apparently, her new Ph.D. thesis was pretty groundbreaking also, but so deeply mathematical and abstract we missed its significance. The problem is, I’d be shocked if it didn’t attract the notice of a few of our global competitors, who’ve probably been keeping track of her ever since.”

Reed nodded slowly, taking it all in. “It’s surprising to me that she’s come up with such major advances at a place like USD,” he said. “Regardless of how brilliant she is. I mean, she’s had no camaraderie with the top minds in the field. I was always under the impression that geniuses collected at prestigious institutions so they could interact with other geniuses. To stimulate their thinking and spur them on to greatness. Since she’s in a genius vacuum, you’d have to think it unlikely she’d make this kind of breakthrough.”

Hubbard paused in thought. After several long seconds she winced noticeably, as if something wholly unpleasant had popped into her mind. “That’s true, Commander Reed. At least the vast majority of the time.”

She blew out a long breath and began to look vaguely ill. “The problem is,” she continued, “the two exceptions to this rule that spring to mind are truly *legendary*. Something I never really thought about until you just raised this point.”

Hubbard’s expression soured further. “Which means overlooking Dr. Keane is even more egregious than I realized. Mingling with the greatest minds in a field can lead to breathtaking advances. Absolutely. But I just realized that to dramatically upend an entire field, take a quantum leap forward, a true genius may actually *benefit* from standing alone. Scientists cut off from exalted institutions are freer to think outside the box. They aren’t shackled by conventional thinking, and don’t need to fear being ridiculed by respected peers for having ideas that seem totally wild.”

“So who are these rare exceptions?” asked Reed.

“Only the two men responsible for the most important physics revolutions of the past three or four centuries,” she replied miserably. “Isaac Newton and Albert Einstein.”

She paused to let these names sink in. “In 1665,” she continued, “young Isaac Newton was a student at Cambridge when the Great Plague hit London, wiping out a quarter of the population in only two years. They didn’t understand infectious disease back then, but they knew quarantines worked, so all students at Cambridge were sent home.

“Without any professors to guide him, Newton invented calculus, experimented with prisms in his bedroom, thus creating the field of optics, and discovered the laws of gravity and motion. Miracles all. Work that set the course that physics would follow for centuries. Had he stayed at Cambridge, it’s hard to imagine him coming up with any of these monumental breakthroughs.”

“So maybe *that* was my problem in school,” said Reed wryly. “The presence of those damn professors trying to guide me. I had a feeling.”

Hubbard laughed. “Fast-forward to Einstein,” she continued. “Because he was a German Jew at the wrong time and place in history, he couldn’t get a job in academia. He finally found employment as a patent clerk. A patent clerk makes an associate professor at USD look like a Nobel-prize winner from *Princeton*. I mean, this job was embarrassingly modest. Einstein would have been the last scientist on Earth to attract the attention of something like Tech Ops.

“But at the age of twenty-six,” she continued, “as a leper all alone on an obscure island, Einstein published four papers that formed the basis of much of modern physics, shattering previous conceptions of space, time, mass, and energy, and making founding contributions to both pillars of modern physics, relativity and quantum physics. Again, there is zero chance he would have made these advances had he been in academia at the time.”

“Fascinating,” said Reed. “But I was trying to cheer you up about this, not make it worse.”

“You did something a lot better than cheering me up, Commander. You got me to expand my thinking. To realize we’ve failed to account

for perhaps the most important cohort of all. A mistake I plan to correct immediately.”

“Do you think this Allie Keane might be another Newton or Einstein?”

“Unlikely, because, you know . . . who is? But maybe not too far off. It’s too early to tell. The work she just put out there is *impressive*. Truly staggering in originality. Biology-inspired qubit technology. Resulting in qubits that can operate at room temperature! What she posted online is more of an elaborate summary, but her work led to a series of testable predictions, several of which she confirmed already. Another key prediction requires an experiment too complex and expensive for her to carry out, but if this prediction is confirmed—which we’re now in the process of trying to do—there can be no doubt she’s on to something big.”

Reed considered. Efforts to produce the ultimate quantum computer weren’t going well. There were sexy-sounding advances and milestones that made constant headlines, but the hidden truth was that humanity remained ten to twenty years away. “So if her work does pan out,” he said, “do you think we can get to an ultimate quantum computer in less than a year?”

“No. There’s a catch. Even assuming she’s able to properly fill in the many gaps she purposely left in the paper she posted. Some have theorized that various life-forms on Earth, including all plants, are able to harness quantum effects at room temperature, and in messy cellular environments. She’s extended this work, come up with a breathtaking theory to describe how this is possible, and claims to have identified the structure of a theoretical organic molecule with just the properties we need. She used a sophisticated computer program of her own design to derive the precise composition of the complex, long-chain biomolecule needed. One able to forge a perfect pairing with inorganic components to create the ideal qubit.”

“And has she disclosed the molecular formula for this . . . perfect quantum biomolecule?”

“Fortunately not,” said Hubbard. “But she did clarify that after considerable research into state-of-the-art chemistry capabilities, she’s convinced that the needed molecule can’t be synthesized. She

expects that human ingenuity will eventually discover how, but this could take five to ten years. A considerable improvement over our best estimates for the kind of quantum computer everyone is gunning for, but not immediate. Still, most elite physicists didn't think room-temperature qubits were even *possible*. So the importance of this work can't be overstated."

"How is it that there's an organic molecule chemists can't synthesize?" asked Reed. "Haven't scientists constructed strands of DNA tens of thousands of nucleotides long?"

Hubbard nodded. "They have. But DNA consists of common units that just get repeated over and over. Not so with this one. And there are endless examples of compounds that nature can make—meaning bacteria and higher life—that humans can't."

She tilted her head in thought. "Still, even if we can't now, there is no doubt we'll be able to eventually. Many decades ago a highly effective anti-cancer drug named Taxol was discovered. Unfortunately, it could only be obtained from the bark of the Pacific Yew tree. And harvesting it killed the tree. But after more than twenty years of effort, and hundreds of millions of dollars invested, chemists finally found a synthetic route that enabled the drug to be synthesized without need of the tree."

Reed frowned. "Yeah, but I'm guessing it would have been even more difficult if they had no idea what they were trying to synthesize."

"Very true, Commander. Which is where you come in. I need you to do whatever it takes to get Dr. Keane to disclose the gaps in her paper to us. And the precise structure of her golden molecule. But *only* to us."

She sighed loudly, a grim expression now replacing the smile she had worn seconds earlier. "So if you think a totalitarian global power is going to get it from her first . . ." She paused, not wanting to continue. "Well . . . you may have to do the unthinkable."

Reed swallowed hard. This had just become a little *too* real. He knew the dangers of a tyrant getting the ultimate quantum computer, and the arguments about sacrifices that might be necessary for the greater good. But he also wasn't capable of sacrificing an innocent woman—a singular genius to boot, who had already suffered cruel

blows she hadn't deserved—no matter what the stakes. He'd rather die, himself, than have that on his conscience.

"Understood," he said finally, choosing this word carefully. He did understand. He just wasn't prepared to obey.

Reed wanted to ask more questions, but he had a lengthy briefing document in his inbox, and time was fleeting. "Can I assume we're now monitoring Allie Keane with satellites and street cams?" he asked.

"Yes, and you have voice authority to tie into any footage you want."

Reed nodded. "Where is she now?"

"At her home. Alone. With her cell phone off. When we first began surveillance, she was out to an early breakfast. Also alone. Interestingly, she didn't bring her phone with her."

"On purpose?" said Reed in disbelief.

"Seems that way."

"Wow," he said with a grin. "She's even more extraordinary than I thought."

The colonel laughed, and then studied Reed for several long seconds. "It's good that you were the operative closest to South Dakota, Commander. I think you're just the right man for this job. Exceedingly competent. But also attractive and charming."

She allowed herself the hint of a smile. "And no, Commander, I'm not coming on to you. But we do deal with people. And while we don't hire based on looks, being attractive tends to be a plus in human interactions. You also have that SEAL Team Six self-confidence and aura that I should think will give you an added dimension of charisma. So please consider using charm as a weapon before you consider using any of the goodies we'll have loaded inside your van."

"I appreciate the tip," said Reed with a wry smile. "When I was with the SEALs, breaching terrorist strongholds and the like, my commanding officer never once suggested that I use charm as a weapon."

"I don't doubt it," said the colonel in amusement. "But if you were breaching a stronghold held by a twenty-eight-year-old scientist named Allie Keane, I suspect he might have."

5

Dr. Allison Keane walked to her bedroom to retrieve her phone in a trance. If what her neighbor reported was true, that someone wealthy and connected was so eager to offer her a position that he couldn't wait even a few hours to get in touch with her, this was an amazing development. But she was no longer a trusting soul. Abraham Sena had robbed her of her work, yes, but also of her innocence.

Because monsters under the bed did exist, after all. Psychopaths like Sena.

After she had come out of her downward spiral, she had studied up on this condition, and was amazed by what she found. Fully one percent of the population fell into this category, and many were brilliant and high functioning, becoming extraordinarily successful scientists, politicians, and CEOs, mostly because they were utterly ruthless and predatory, had no conscience, and didn't feel guilt or shame.

Psychopaths were found in all walks of life, and if you were unlucky enough to cross one's path, and to possess something he or she prized, you were well and truly screwed. They were raging, unfeeling hurricanes who inevitably left a path of human destruction and ruined lives in their wakes.

Even though Allie hadn't been broken beyond repair, trust had been a lasting casualty. She lifted her phone anxiously, as if half expecting it to transform into a venomous snake.

How could her work be gaining a foothold so quickly? She hadn't expected for this to happen for many months or years—and maybe never.

The phone glowed to life in her hand and indicated she had missed thirty-two calls, many of them repeats from the same numbers, and had received eight voice messages. Her eyes widened in dismay. She

rarely got more than a few calls a week, and most of these were from solicitors.

She jumped as the phone rang, just a moment after it had powered up. She glanced at the screen, which indicated that the caller was unknown.

“Hello?” said Allie tentatively.

“Dr. Keane!” replied a deep male voice at the other end. “It’s great to talk to you at last. Your neighbor just confirmed that she had passed along my request, so I expected you to turn on your phone.”

“So you’re John?”

“Yes, John Conway. I’m the CEO of a company named Eureka Technologies. Perhaps you’ve heard of it.”

“I’m afraid not.”

“No matter. As I’m sure your neighbor told you, we’ve read your recent post, and we’re very excited about your work. We’d like to take a license to it, and hire you on to help turn your theory into reality.”

“I’m flattered,” said Allie, not sure what else to say.

“Good,” said Conway. “Get ready to be even more flattered. We’d like you to lead a team. One loaded with the best talent and equipment money can buy. And we’re willing to offer you ten million dollars for the license, and two million a year for your services.”

Allie couldn’t help but cough out loud, as cliché as that seemed. She steadied herself against her dresser as the room seemed to spin around her. Several responses flashed through her mind. “That’s very generous,” was one, and “What aspect of my work are you most excited about?” was another.

“What’s the catch?” she heard herself say out loud instead.

“Only one,” said Conway smoothly, ignoring her cynical tone. “The offer is time sensitive. I have a driver on his way to you now. He should arrive any minute. If you accept my offer, he’ll take you to the airport and our private jet. We’ll fly you to our headquarters in Tucson, Arizona, so we can meet and I can give you a tour. After that we’d ask you to review and sign a contract. As a show of good faith, even before you leave, I can have two million wired into your

account. This will be yours to keep, even if you back out.” He paused. “But after our meeting and tour, I really don’t see that happening.”

Allie struggled to digest what she was hearing. Could any of this be real? “Let me guess,” she said finally, “you don’t need my routing numbers to deposit the two million, do you?”

“Not so much,” replied Conway with amusement in his tone. “But rest assured, we can’t pull it back out once it’s in.”

“What am I missing . . . John?” she said. “I believe my theory is groundbreaking, but what you’ve seen is incomplete. I have the key missing pieces in my head. But even if I had published a complete version, it’s not fully verified. I might have gotten something wrong. It’s true that my initial predictions seem to have panned out, but there’s one crucial experiment that needs to be done. If my theory accurately predicts the outcome, that would be a different story. Until then, my ideas could end up being worthless.”

“That’s admirably honest of you, Dr. Keane.”

“I didn’t bring it up to be honest. I brought it up to be skeptical. This seems fishy to me. I just don’t buy that anyone could be as interested as you seem to be at this point.”

“That’s because you’re missing a key data point, Dr. Keane. It turns out that we *have* completed the experiment that you’re speaking of. Just this morning. And the results do match your prediction precisely. Congratulations.”

Allie’s breath caught in her throat. “Impossible,” she said. “It would be exceedingly expensive to carry out, and require specially made equipment and significant expertise to run. I can’t imagine it taking less than seventy-two hours to complete, no matter what.”

“We did it in sixty-seven. I’ll pass along your compliments to the team. We began very soon after you posted your theory and predictions.”

Allie found herself momentarily speechless. This kept getting more and more surreal.

“I’d need to see and confirm the experiment and results for myself,” she said, excited beyond words that what John was saying might be true, but forcing herself to stay calm. “But even if you’re right, even if my theory *is* proven, that’s not the whole story. I’m sure

you saw where I mentioned that the organic molecule critical for room-temperature quantum computing can't be synthesized."

"I did," said Conway. "But what you've done was thought to be impossible. Literally impossible. Finding a way to build this molecule of yours, on the other hand, is just a matter of time, effort, and resources. We will solve it." There was a long pause. "I don't suppose you want to give me a hint as to its structure."

Allie smiled. "Not at the moment, no," she said. "Not that I could, anyway, at least not verbally. It's quite long and complex."

"I understand," said Conway. "But have I convinced you that my interest is genuine?"

"You have," said Allie.

"Does that mean you're in?"

There was a long silence. "I do have one additional question," she said. "Why the urgency?"

"*Carpe diem*, Dr. Keane," replied Conway immediately, clearly having expected the question. "Seize the day. It's my business philosophy and it's served me well. We've already sunk a considerable sum into verifying your theory, so you can tell that we're quite enthusiastic about it. And when I see something I want, I'm willing to pay a premium to get it."

"I'm grateful for your confirmation of the results," said Allie. "I am. And when I see them for myself, I'll be nothing short of *euphoric*. But while we've been talking, I took the liberty of glancing at the transcripts of three of the voicemails I discovered when I turned on my phone. All three are extremely interested in gaining access to the missing pieces of my work, and taking a license—like you. Two of the three implied I could name my own price. I don't want to sound ungrateful, but too much is happening, too fast, for me to make such an important commitment. And I worry that I'm being rushed so I don't get the chance to speak with other interested parties."

"I can't deny that's a small part of the urgency," admitted the caller. "Why risk losing out if I don't have to? And I do understand how you feel. But remember, I'm offering two million dollars right now if you'll just give me the chance to make the first pitch. Again, if you

decide to pass on my offer, you keep the money. You have to admit, that's a lot of money. More than many people make in a lifetime."

Allie considered. It was tempting—*very* tempting—but it seemed too good to be true, and she was a woman who had developed serious trust issues. "I'm grateful for the offer," she said. "I really am. But I can't take your money. Not that way. I'd feel too guilty if I backed out. So I would love to speak with you, but this is too important to rush. I hope that you'll understand. Perhaps you could send over your proposal. I'll take a look, and after I've spoken with other parties, and done some serious thinking, we can schedule a meeting."

Allie paused. "And there are factors at play here other than money," she continued. "Will all interested parties require me to relocate? Would anyone consider letting me maintain my post here and just consult? What are the expectations? I'll have dozens of questions. It's just all so . . . overwhelming. But just because I'm not ready now doesn't mean I'm not *very* interested in learning more about your company and offer."

"Of course," said Conway graciously. "If you want to do this at a more measured pace, that's what we'll do. I'll send you additional materials. And you have my number on your phone. Call anytime, day or night. And let me know when you're ready to schedule a meeting."

"I will. Thanks so much for your understanding. And believe me, given that you've completed the key experiment that proves my work, you and your company will be very hard to beat."

A few short minutes later Allie ended the call and closed her eyes.
Had that really happened?

She glanced at the still unread and unlistened-to messages on her phone.

Was it still happening?

And had she handled the situation correctly? Half of her still feared that John Conway's offer was too good to be true, that it would turn out to be a mirage. The other half feared that she had made a huge error not jumping at such a life-changing amount of money, and that some flaw in her theory was about to be discovered, so she'd never get this chance again.

But what troubled her most was what she'd be giving up if she did go forward. With *any* interested party. Because it was clear that no one would pay this kind of money to put her full theory in the public domain. No, they'd want to keep the aspects she had yet to reveal strictly confidential. She imagined Albert Einstein selling out, agreeing to never publish his General Theory of Relativity in exchange for a bulging bank account, and couldn't help but shudder.

Her thoughts were interrupted for the second time that morning by yet another firm rap on the door. She hit the icon on her phone that would call up the door cam footage to see who it was. A tall man stood on her welcome mat, his hair short and raven-black, wearing slacks and a blue blazer. Behind him in the shot, parked on her driveway, was the longest limo she had ever seen.

"Dr. Keane," he said into her doorbell mic, "John Conway sent me to pick you up and take you to the airport. He has a private jet ready to take you to Tucson."

Allie shook her head. Apparently, had she agreed to go, Conway hadn't planned on giving her any time to pack.

She threw open the door. "Hi," she said. "I guess Mr. Conway forgot to contact you after our call. It turns out that I won't be going to Tucson, after all. Not yet. We've decided to slow things down. Sorry for the wasted trip."

The raven-haired driver shrugged. "No need to apologize," he said agreeably. "Actually, he *did* contact me. And my trip won't be wasted at all."

Saying this, the man lifted his right hand from where it had dangled near his waist to reveal a gun, which was pointed squarely at Allie's chest.

Before she could even gasp, the man squeezed down on the trigger, his calm, pleasant expression never wavering.