

Photography by
Jared Soares

Jim

The creator of the CIA's
'Kryptos' sculpture has
spent decades guarding
its last unsolved cipher.
Now, as he approaches
80, he has made a plan
for what comes next.
By Oliver Roeder

Secret



Sanborn's

The sculptor Jim Sanborn lives and works on a small island off the coast of Maryland, down where the state's long fingers reach into the Chesapeake Bay. It's called Jimmy Island, though he told me that he didn't name it.

His compound is hidden behind tall trees, protected by a gate and serious-looking No-Trespassing signs; a security camera surveils its long, winding driveway. The property is occupied by structures of Sanborn's design and construction, including a large studio and a modernist house. The studio looks like a military installation, and the house is clad in lovely green copper. Farther back is a private beach and personal archery range.

Sanborn himself is a giant of a man, with particularly enormous hands. He is 79 years old, and his hair and beard are white. His body cranes forward, the price of a long career working with metal and stone. His back and legs trouble him; standing and walking are burdensome chores. When I entered his cavernous studio, he loomed in hiking boots, shorts and a shirt with the sleeves rolled up.

We sat in rolling chairs in the centre of the room, near Sanborn's workbench and a gigantic saw. A series of delicate lattices, his latest work, hung on two walls. They are 3D versions of the geometric drawings of Euclid and Descartes, smaller and more manageable than his earlier, monumental sculptures that mimicked mountains and thunderheads. They cast intricate shadows on the walls.

He shares the building with the studio of his wife, the sculptor Jae Ko. Her medium is adding-machine paper, which she collects in great quantities and dyes. Sanborn said their work "couldn't be more different, thankfully" and noted that their workspaces are separated by two fireproof walls. That may be true, but conceptually they seem a pair, amassing and recasting the residue of mathematics.

Sanborn is best known for the sculpture "Kryptos", which stands in a courtyard at the headquarters of the Central Intelligence Agency in Langley, Virginia. The piece is an undulating sheet of copper, like an unfurling scroll, perforated with hundreds of letters. It is framed on one side by a petrified tree, while at its base are a small, whirling pool and two large, flat stones. It was completed in November 1990 and has been furniture in the working lives of American spymasters ever since.

"Its placement in a geologic context reinforces the text's hiddenness, as if it were a fossil, frozen in time," Sanborn said on the day it was dedicated.

The sculpture's letters contain encrypted messages. Though they appear as one giant grid, "Kryptos" consists in fact of four sections, each themed and encoded differently, now known as K1, K2, K3 and K4. The first three sections were decoded by professionals and enthusiasts decades ago and their solutions are public knowledge.

The full text of K1 reads: "Between subtle shading and the absence of light lies the nuance of iqlusion."

(The misspelling is intentional and meant to be deceptive.) K2 mentions Earth's magnetic field - "It was totally invisible, how's that possible?" - and something being buried and lists geographic co-ordinates nearby on the CIA grounds. K3 is a paraphrasing of the remarks archaeologist Howard Carter made upon discovering Tutankhamun's tomb: "I inserted the candle and peered in."

The 97 characters of K4, however, remain a mystery. It is one of the most famous unsolved codes in the world, a secret that has come to define Sanborn's life, now in its winter. It exalts and haunts him in equal measure. If it were possible to encode a mind, to distil a soul down to its essential script, Sanborn's might look like the text of K4, which reads:

OBKRUXOXGHULBSOLIFBBWFLRVQQPRNGKS-SOTWTQSQSSEKZZWATJKLUDIAWINFBN-YPVTMMZFPKWGDZXTJCDIGKUHUAUEKCAR

I had come to ask Sanborn what happens to the code when its keeper is gone. He swivelled in his chair and answered: "We're working on a system to replace me."

I ASKED HIM IF IT HAS BEEN PLEASANT knowing something that no one else knows. "Secrecy is power, that's the unfortunate reality," he said. "And I have been resented for having this secret."

His long guardianship of the "Kryptos" secret has been one of "satisfaction" and "servitude". He has communicated with tens of thousands of people about the sculpture over the past 35 years - they write letters, place phone calls, send emails, show up at his door. The correspondence became so overwhelming that he eventually started charging a \$50 fee to entertain submissions and questions. (The fee covers an exchange of no more than two back-and-forth emails.) Not everyone pays it.

The interactions have become strange and sometimes scary. Sanborn said he has received death threats from would-be codebreakers and envelopes containing white powder. At least one person has shown up on the island. "There have been 'Kryptos' crazies that want to kill me, no question about it," he said. His voice is reedy and slightly strained, but always assured and matter-of-fact.

But Sanborn sympathises even with the disturbed and misguided among his sculpture's congregation. This is a piece that requires two artists: encoder and decoder. And codebreaking "requires a certain creativity, there's an artistic element to it. Creative individuals often have problems. We all have the same problems."

In 1999, a computer scientist in California called Jim Gillogly cracked K1, K2 and K3. But when he informed the CIA, he learnt that they, too, had cracked them months earlier. Neither was even close to first. A declassified memo from the National Security Agency reveals that its employees cracked them back in 1992. Sanborn had "created a nice little puzzle", the memo says.

A few redactions aside, the document explains the NSA cryptanalysis in detail. K1 and K2 are encoded with Vigenère ciphers - each letter is shifted through the alphabet according to the letters in a secret key. (The key for K1 is "palimpsest" and the key for K2 is "abscissa".) K3 is encoded with a transposition cipher, where letters remain themselves but are rearranged.

But K4, the memo lamented, was intractable: "At this point, three of four sections had been decrypted, and for those of us at NSA who've worked on this, and that numbers in the dozens, no one has ever gotten that last part."

Over the years, Sanborn has parcelled out a few hints to K4. In 2010 he announced that one particular snippet decodes to "Berlin" and, in 2014, amended that to "Berlin clock". In 2020, he revealed that another bit reads "northeast" and announced that no further hints would be forthcoming - and then he added that it was "east northeast". That's a quarter of the message accounted for, and still no solution.

But the submissions keep flowing in, at a pace of some dozen per day. A new wave has been propelled by large-language models, with their false certainty and ostensible suitability to the task. High in the current Google results for "Kryptos" is an article by a man proclaiming that he solved K4 with the chatbot Grok and that "victory is mine"; Sanborn assured me that he is incorrect.

"The thing about AI is it's lying, it's telling you what you want to hear," Sanborn said. His voice rose. "These people are so arrogant, they so believe that they have absolutely cracked it because AI has told them they cracked it, congratulations."

But Sanborn has long promised that, even if K4 does get cracked, by human ingenuity or some superbots, the individual solutions to "Kryptos" will combine into yet another new problem, a meta-code. In other words, he says, there is a K5.

Sanborn was raised in and around Washington DC. His parents both worked at the Library of Congress, professional inhabitants of what he calls the "institutional green hallways" of the US federal government. This is a fixative image for Sanborn, one he mentions repeatedly. He has earned much of his living making public art, and those hallways themselves have generated much of his raw material - data, science, technology, war, conspiracy, espionage.

At an Internal Revenue Service computing facility in West Virginia, where tax records were stored on magnetic tape, he built the sculpture "Binary Systems" - its centrepiece is a magnetised stone. At a National Oceanographic and Atmospheric Administration complex in Maryland, he built "Coastline", a perpetually crashing wave pool that looks like the ocean in miniature. Other than perhaps "Kryptos", Sanborn considers this his finest work.



THE 'KRYPTOS' SCULPTURE AT CIA HEADQUARTERS IN LANGLEY, VIRGINIA

His father was also an artist, a printmaker. As a kid, Sanborn would draw pictures of himself in a backyard studio in which he was an inventor. As a young man, Sanborn variously wanted to be an archaeologist, anthropologist, sociologist and medievalist. He studied for a summer at the University of Oxford, on an archaeology course that sent him on digs. Being the large man that he was, he was given the muscle jobs. In Southampton, he found a human skeleton. In an Oxford chapel, he found a forgotten Middle Ages passageway in a crypt.

In 1970, he entered graduate school in sculpture and ceramics at the Pratt Institute in New York City, but the pottery wheel made him dizzy. His first project for the sculpture course seemed reasonable enough for a student sculptor, a representative head. But its presentation was not well received by his classmates. "It was like a nuclear explosion occurred in the class," he recalled. "Sanborn, what in the hell, you think you're living in 1940?"

Thoroughly chastened, his next projects were huge organic forms made of Styrofoam, which reached out of the windows and doors of the rooms in which they were shown. He spent the rest of his school days absorbing the lessons of the avant-garde in

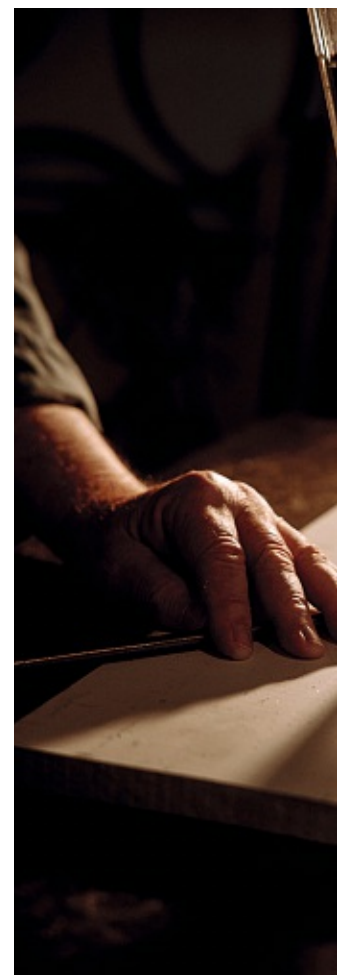
downtown Manhattan galleries. Sanborn has essentially abandoned the human form since. "I represent a phenomenon, an invisible force, a psychological feeling, a terror, or something like that," he once told a curator.

Just before he graduated Pratt, Sanborn suffered what he described as his first nervous breakdown, the result of anxiety and depression, with which he still struggles. He left New York and went home to recover. He began a course of medication and psychiatry. His self diagnosis - he has studied abnormal psychology - is simply that he was a young man about to enter the real world. He hasn't set foot in New York in a decade. "I'm more comfortable with the flora and fauna of the island," he said. "I am in love with waking up in the middle of the night, looking out, and there are deer sleeping in front of my window."

He has cut his own path since. As an upstart artist, on weekends, Sanborn would drive to a corporate office park with his sculpture in the back of a truck and place his piece on a lawn, as if the company had purchased and displayed his work. Security guards would chase him and his sculpture away, but not before he'd taken a photo for his portfolio.

He has long bristled at the politics of the professional art world. He's not much of a museum-goer or gallery visitor any more, and he suspects his distaste for fealty and horse-trading dampened his early reputation. A certain paranoia has also tinted his career. The famed sculptor Isamu Noguchi once paid a visit to a young Sanborn's studio. He was terrified that Noguchi would steal his ideas. "I was paranoid and still am paranoid," he told an interviewer in 2009. "But less paranoid now because I know nobody would be crazy enough to do what I'm doing."

AS A SWELTERING MARYLAND MORNING became afternoon, a darkness crept over Jimmy Island. Before lunch, I walked alone on the beach and heard the shrill calls of an osprey. Thinking he'd appreciate the sighting, I reported this to Sanborn. But somewhere offshore, he said, a fishing vessel was decimating the population of a fish called menhaden, a staple food for the osprey. Struggling to eat, the birds weren't mating. "We have hundreds of nests on the island, and not a single baby for two years," he said. "Sad story." Those calls meant something different now.



FROM LEFT: SANBORN CUTS A PIECE OF METAL IN HIS STUDIO ON JIMMY ISLAND, MARYLAND; A SECTION OF 'KRYPTOS'; SANBORN AT WORK; A PIECE MADE FROM PULPED CIA DOCUMENTS; SANBORN'S GLASSES REST ON A STUDIO SURFACE

Other menaces lurked nearby. Another beach property had taken to hosting very late, very loud parties, Sanborn said, attended by members of the Russian mafia. Along the beach, he'd confronted a man with what he described as "Russian prison tattoos", imploring him to keep his people away. Recreating the incident for me, Sanborn adopted a Russian accent: "Guns and dogs, guns and dogs. We paid off the police, all the police are our friend." (The local sheriff did not respond to a query about such events on the island.) Sanborn also said that members of the criminal gang MS-13 had been in the area, some of whom were arrested by the FBI for a profiteering scheme. (The FBI did not respond to a query about the incident.)

Sanborn's property has been the target of three attempted home invasions, he said. Ko now refuses to stay there when he is away. "That kind of toasts it for the island after I'm gone," he said. He lamented this because he had wanted it turned into an artists' residence. He keeps a shotgun above his bed and the house is equipped with panic buttons. He pressed one to demonstrate and a siren blared.

"You weren't kidding," I said.

"I wish I was."

And the code. I asked Sanborn if he was surprised that K4 has remained unsolved for 35 years. He was not. The K4 code was devised "in collaboration with a cryptographer who encrypts national security secrets", Sanborn said.

I asked if a solution existed at all. What better way to ensure the long shelf life of a cipher and therefore a sculpture? What cleverer bit of conceptual art at the heart of the American intelligence community? He shrugged this off.

"It is a solid system, and I fucked with it."

"What do you mean you fucked with it?"

"I can't say."

The solution to K4 is in an envelope somewhere, he assured me, though he also wouldn't say where. He can't remember the solved text off the top of his head, though he knows enough to vet submissions. Later, I wondered if it might be in the studio. Sanborn dug around in a large closet lined with grey filing cabinets, looking for "Kryptos" ephemera. Among the documents he removed was a sheet of yellow paper with the handwritten and hand-corrected text of K3.

In 2009, Sanborn gave a lengthy interview to the Smithsonian's Archives of American Art, under the condition that it not be published until after his death; the restriction has since been lifted. Sanborn told the archivist that, at the behest of the CIA - which presumably did not want to display any communistic or pornographic material, even encoded - he'd divulged the full solution to something he called the Department of Historical Intelligence.

His story goes that he entered the department's one-room office and asked if anyone had a photographic memory. One person did, and he asked

them to leave. He then handed the solution to the remaining historical intelligence officers and they started reading. One woman's hand began shaking, apparently overcome by the text and the responsibility of its secret. Then her body began shaking violently. She was crying and had to be led out of the room.

Later in the same interview, Sanborn said, "I didn't necessarily give them the whole code." (The CIA regards Sanborn as the authority on his sculpture, and does not decide whether a solution is full.)

Sanborn is also meant to have given the keys to all four codes to William Webster, the director of the CIA at the time. K2 even reads "Who knows... only WW". Sanborn showed me a photo of himself handing *something* to Webster at the dedication ceremony in 1990. "I hope you can keep a secret," Sanborn told him. "I have zero memory of this," Webster told The New York Times in 1999. "It was philosophical and obscure." (Webster died last week at the age of 101.)

"I'm not exactly sure what I handed him, frankly," Sanborn told me. "I don't remember."

IN THE LATE 1970S AND EARLY '80S, Sanborn showed his work with Diane Brown, then a gallerist in DC and New York. Brown had rented an enormous space to house a piece by the sculptor Raoul Hague, and "Jim made art that was too



big for any of the galleries, so we were a good marriage”, she told me. She sold his large stone pieces, and they remain friends. “He wasn’t hanging out with everybody, and his work was different than what was going on, too,” she said, referring to contemporaries such as conceptual sculptors Rockne Krebs, Yuri Schwebler and Jaume Plensa. “His later work got very scientific to the point where you really had to read about it. It’s hard to sell something you have to read about, but he managed.”

Sanborn divides his work into decade-wide buckets. His 1980s reckoned with the Earth’s invisible forces. The Coriolis force and magnetic fields, for example, fascinated him. Lodestones are rocks that are naturally magnetised, likely from being struck by lightning over millennia. They became a key ingredient in Sanborn’s work; he placed one outside the CIA. A physicist at Nasa once directed him to a town in Utah where an iron mining company was tearing down a mountain that stood in a lightning field. Sanborn arrived with steel cables and trucks and carted sculptural medium all the way back east.

The 1990s, starting with “Kryptos”, concerned the invisible forces of humans. One project, “Covert Obsolescence”, used pulped documents that he’d taken from the CIA. Another bronze piece, “Cyrillic Projector”, contained encoded classified KGB correspondence. (He considered consulting the Russians or Mossad for the “Kryptos” cipher, but his contract required that he buy American.)

Sanborn went on to perfect a series of bronze cylinders, perforated with letters, with a light in the centre that projects them onto their surroundings. They are essentially “Kryptos” twins rolled into upright burritos. There is one in my hometown in Iowa, called “Iacto”, that sprays multilingual letters across the university’s journalism building. These cylinders became a recognisable and lucrative signature. The only problem was that, on college campuses, they tend to get filled with empty beer cans.

There was an upright burrito in the studio, and Sanborn switched it on. He was bathed in alphabetical glow. This one’s text had to do with the history of the American West. “All the texts on them deal with history,” he said. “Some of it factual, some of it fictional. I mean, I do make stuff up.”

By the mid-1990s, work on the clandestine forces of humanity had exhausted Sanborn, and he headed west, that most American of cures. He was inspired by artists like Robert Smithson and James Turrell, for whom the open country was the medium. But Sanborn objected to the physical manipulation of what he saw as an otherwise pristine world. So he created his earthworks using a high-powered, custom-built projector that could create an image a quarter-mile away. If a butte looked vaguely cubic, he projected a perfect cube onto it. If a hill looked triangular, he projected a perfect triangle - “in order to recall the original crystalline landscape

‘Secrecy is power, that’s the unfortunate reality. And I have been resented for having this secret’

Jim Sanborn

that I envisioned". The only evidence that he ever did this are the large-format photographs he took, some of which hung nearby.

On his last projecting trek, Sanborn was working in the white sands of New Mexico. He learnt that he was only a few miles from Jornada del Muerto - Dead Man's Journey - the desert basin where the first atomic bomb exploded. It detonated the year Sanborn was born. Atomic weapons consumed his next decade.

Piece by piece, through painstaking research and travel, he recreated the Manhattan Project laboratory at Los Alamos, a project called "Critical Assembly". He was particularly taken by the fact that the tiniest parts of the core of the bomb were made by jewellers. On the remove of Jimmy Island, he spent three years recreating an old particle accelerator from notes and photographs.

His sculptures dwell on the moment when science becomes technology and when the beautiful becomes the terrible. "That moment when pure science transfers into a technology is a very tricky time, and we're in the midst of the AI thing," he told me. In *Atomic Time: Pure Science and Seduction*, a 2003 catalogue for his atomic art, he described his subject as "a tyranny of the machines, the machines left on by mistake. Machines can take on a life of their own and end up with weighted symbolism, which can sometimes go beyond the human."

Over lunch of soup and toast, I asked if he had any future projects planned, new pieces to follow the Euclidean and Cartesian wireframes, which he'd been working on for years. Maybe something Paleolithic, he said, something that would not concern itself with machines. He had been reading exhaustively, technical papers on prehistory and the American and European Old Stone Ages.

He went to a shelf and pulled out a series of small artefacts: dinosaur tailbones, American Indian arrowheads, a meteorite. He handed me something. "Don't drop it - T-Rex tooth," he said. "Look at those serrations."

Sanborn was awarded the "Kryptos" commission by the General Services Administration, a federal agency that administers a public art collection, and a National Endowment for the Arts panel, on the back of his invisible-forces work and the fact that he was a DC kid. It paid a fee of around \$700,000 in today's dollars, all of which he spent on the sculpture.

The project haunted him before he'd even bent the copper. In 1988, the *Village Voice* ran a story titled "Art of the State", about the CIA's new art-collecting ambitions, which would include Sanborn's commission. He recalled to me the article in detail, and with acrimony, and has brought it up in other interviews over the years. He remembered it deriding artists who'd work for the CIA and accusing them of "accepting the money of Satan". "That set my career back a good bit," he said. "The exhibitions that I had were all damned."

The article, by the critic Elizabeth Hess, is not that bad. Its main criticism is that artwork at the CIA would be largely out of sight, "public art in the least public of all spaces". Hess does ask whether a work of art "assumes the crimes of its collector", but answers with quotes that "in no sense will the art validate the operations of the CIA" and "the most



FROM LEFT: RENDERING OF SANBORN'S ORIGINAL PLANS FOR 'KRYPTOS' AT THE CIA SITE IN LANGLEY; SANBORN WORKING ON 'KRYPTOS' BEFORE INSTALLATION; SANBORN HANDS SOMETHING TO CIA DIRECTOR WILLIAM WEBSTER AT THE 1990 DEDICATION CEREMONY. 'I HAVE ZERO MEMORY OF THIS,' WEBSTER SAID IN 1999

sensitive art will change the way people think". Sanborn sees it this way, as a gentle nudge from within.

He worked on "Kryptos" in a warehouse studio in a rough neighbourhood in north-east DC, where he said he'd found dead bodies in the yard. Construction took two and a half years, a dozen jigsaws and 1,000 blades. It also took a number of assistants, who performed the gruelling work of cutting the letters out of thick copper, sometimes at a pace of just a few each day. There are 1,736 characters on the piece. The retention rate was low.

But one of those assistants, David Sheldon, was an expert cutter and became Sanborn's right hand through construction and installation. Sheldon is now a working sculptor in North Carolina, and I spoke with him recently on the phone. He remembered Sanborn as a hands-on, hard-driving boss, qualities that Sheldon recognised in himself and appreciated. Sheldon didn't remember much about the code and thought that the text was written by the spy novelist John le Carré, a notion that Sanborn told me he had considered and abandoned. "I would just sit there," Sheldon recalled, "plug in the earphones and listen to my radio talk show, cutting away, you know? To me it wasn't really gruelling, once you got your rhythm down." He paused. "And I guess he told you about the guys that would come by?"

He had. During the construction of "Kryptos", Sanborn believed that he was being followed. He and his cryptographic consultant, a retired CIA employee called Edward Scheidt, would meet in secret locations. Sanborn suspected that spies were climbing ladders, peeking into his studio and that his phone was being tapped. He thought it might be the NSA trying to get the jump on the CIA.

"He was getting a little paranoid," Sheldon said. "I don't know if it was justified or not."

During installation at CIA headquarters, Sanborn said he was barraged with verbal abuse. Employees would point and laugh, even curse, and tell him

the project was a joke. An editorial in the Northern Virginia Sun claimed the sculpture would "cause a festering reservoir of ill will as long as it is allowed to stand". At one point, Sanborn said, a trailer full of his granite slabs went missing, only to be replaced weeks later without comment. The events "made it very clear that there was a schism at the very highest level of the Agency", he has said.

A spokesperson for the CIA could not confirm the incident. "Like many works of art, 'Kryptos' did not win over all its viewers when it debuted," the spokesperson said. "However, over the years, 'Kryptos' has earned the admiration and affection of the CIA workforce."

WHILE REPORTING THIS ARTICLE, I BRIEFLY and unsuccessfully entertained the notion of trying to solve K4 myself. I therefore found myself glued to the website of Elonka Dunin, a video game developer and amateur codebreaker. She maintains encyclopaedic resources on "Kryptos" and a sort of unofficial *catalogue raisonné* of Sanborn's work, and has gotten to know him personally. Dunin is a second lightning rod for the sculpture; someone tells her about once a week that they have solved K4. I asked her why this damn thing was so hard.

"Because it was made by Jim, and he is not a cryptographer," she said. "He is an artist, and I think he did something goofy."

While he appreciates her enthusiasm, Sanborn suspected that Dunin was a spy in her own right. "Her major motivation for getting involved in all of this was to find out what the code was if I made some slip," he told the archivist.

I put this suspicion to Dunin. "Oh, all the time, yes, absolutely," she said. Sanborn once showed Dunin a briefcase that he said contained all the "Kryptos" notes and then he left the room. Dunin was tempted to grab it, jump in her car and flee. But she resisted, suspecting it was a test.



High in Google results for 'Kryptos' is an article by a man proclaiming that he solved K4 using Grok

was working in the building, he saw people he knew from the art world who he had no idea worked for the Agency.

An officer unlocked the doors and we walked outside. It was a glaring summer day. The sculpture felt lighter than I'd imagined. It seemed to float rather than sit. The CIA bans outside phones, so I sketched a picture in my notebook. From one angle, "Kryptos" was framed by two large trees, with a third flowering behind. The K4 section was largely - and purposefully - obscured by a rock.

Sanborn hadn't been to the CIA in years and thought his work had aged nicely. He was particularly pleased with the growth of the trees, which were saplings when he worked here. They are now very tall. This was once a leafy hill, then it was bulldozed and built upon, and now it is leafy again.

I held Sanborn's cane as he leaned against "Kryptos", his face near one of the piece's question marks. It was an intimacy with art, a physical affection, that is reserved only for its creator, particularly in a severe place such as this. He took a seat on one of the large rocks and told me about his search for the petrified tree that frames one side of the sculpture.

He had driven around Holbrook, Arizona, looking for the right one, and met "all sorts of weird people". Once he'd found it, he made the slow truck drive to DC with the specimen in the back, contemplating the code. "The last thing I wrote was on that drive," he said, meaning the solved text. "It was quiet, it was perfect, a part of the world that I really love."

We wandered over to the pond and grasses that he had designed to accompany "Kryptos". "Within hours after I filled that pond, there were ducks," he said.

BACK ON JIMMY ISLAND, SANBORN HAD asked if he could trust me. He then placed a piece of paper on the dining table. I began to read.

It was an unsent letter - part update, part apology - addressed to "Kryptos" "fans, detractors, sleuths, geniuses, CIA employees, cryptographers and miscellaneous provocateurs". In it, Sanborn explained that "I no longer have the physical, mental or financial resources to maintain the 97-character K4 code section of my sculpture".

He is entrusting the secret, the letter explains, to a machine. He will hand K4 over to an artificially intelligent system for safekeeping and verification. The code will be hashed so that the bot can't reveal it, only confirm it. It will be voice-based, though Sanborn hadn't considered if it would sound like him. Like his most monumental pieces, Sanborn's final work will involve wrestling with a technology about which he is deeply sceptical.

And he is auctioning off the system and solution to K4 to the highest bidder. The sale, which will also include "Kryptos" documents and a small copper test piece, will be hosted by the Boston-based RR Auction in November, around the sculpture's 35th birthday and Sanborn's 80th. The upper end of the pre-sale estimate is half a million dollars. That, evidently, is the going price of a secret.

Sanborn's letter offered a final wish and one final hint: "I sincerely hope the new owner will choose to keep K4 a secret, if they don't then (CLUE) what's the point? Power resides with a secret not without it." **FT**

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Oliver Roeder is the FT's US senior data journalist

Why do Dunin and her cohort persist?

"Normal people, when they encounter a mathematical problem and it's hard, they despair, they're sad," Vinod Vaikuntanathan, a computer scientist and cryptographer at MIT, told me. "We cryptographers are a rare breed that rejoices in the existence of hard problems."

What happens to K4 when Sanborn eventually dies is one of those hard problems. The sculptor is an only child and has no children. Both of his parents were only children. He has no relatives save a distant few in Colorado - "rodeo people", he called them. And while Ko has heard the K4 solution, she doesn't remember it and he doesn't want to saddle her with it. "I'm the end of the line," he said.

Mortality is on his mind. It had recently been occurring to me as well; I told him I'd just turned 40. "There you go, halfway there," he said. "It just gets increasingly fast."

He was open when discussing his health problems. "I can't feel anything from my navel down," he said. "My gait and my back are all fucked up. It's to a point where something has to happen." He is also "very much" immunocompromised. During the pandemic, he designed a storage box for the back of his car that contained an ozone generator and ultraviolet lights. "Everything that came onto the island got juiced," he said. His groceries tasted of ozone, but he never got sick.

But he and Ko are also cash-poor, he said, having lived the feast-or-famine lives of artists, and having invested all of what they had in real estate, on which we then sat, looking out toward the bay. "Fox!" he said. A red fox slinked through the yard.

Sanborn had a plan. He would tell me about it, he said, on the condition I not share it with the CIA.

THE NEXT DAY, WE MET AT CIA HEADQUARTERS, across the Potomac River from DC. The enormous campus is surrounded by woods and is invisible

from the public road. I pulled in, pressed a button on an intercom, said I was there to see a sculptor and gave my Social Security number. I was vetted by armed guards and turned left at the Mi-17 helicopter. When I arrived inside, Sanborn was sitting on a bench wearing sunglasses and a safari hat. We were accompanied by three Agency minders. "You know, Jim is a very special friend of the CIA," one of them said.

We walked down long, institutional hallways, past a library, cafeteria and gallery of paintings, a mix of abstract expressionism and scenes of war. Sanborn pointed to where he thought the Department of Historical Intelligence used to be, but our minders didn't seem to know. "These halls are so familiar," he said.

Sanborn also recognised the doors through which he'd moved many tonnes of rock and metal decades ago, angling them through with a custom gantry system, like building a ship in a bottle. While he