

# NANOFUTURE



Chris Deggs

**The small things in life**

*A Novel*

**This is a work of fiction except for the parts that aren't**

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This story about the good and bad aspects of nanotechnology is dedicated to Professor Robert Pope of the Science-Art Cancer Research Institute of Australia who has been has been a great help and source of insight and inspiration for me in the writing of this book.

## ***FOREWORD***

**Stanley Grant** quietly exited the building, with no intention of entering its portals again. He hated big send-offs and he's last directive, as executive director of Global Credit Enterprises, that there was to be no retirement party for him, was reluctantly obeyed. At age 62 he figured he deserved to enjoy the fruits of his labours. Besides, it was time for his son, Joshua, to take the GCE helm. Stanley – he preferred Stan – had taken over management of GCE in 1980, following the death of its CEO, his father, Joshua Grant Snr.

Following in his late father's footsteps, Stan had taken the company forward by investing in Germany's industrial development. A shrewd and very successful businessman, he never let a good investment opportunity slip by. So, when East and West Germany became one in 1989 substantial investment was needed; Stan Grant, realising this, being a astute investor like his father, invested a good sized share in the government sponsored 3 trillion dollar loan program.

As he sat back in the cab, taking him to his hotel, his mind wandered back to those stressful but exciting times. Dealing with German industrialists was not for the faint hearted. And he'd soon discovered it took a company with very deep pockets to outlast and survive the German red tape, as he tediously awaited various business plans to be approved. To deal with this mountain of paperwork, he employed five big German accounting firms, who each dealt with a specific aspect of the business. In the end it had paid off in huge dividends.

The cab pulled up at the entrance of the 'New York Standard', an eighteen story tower in the centre of Down-town Manhattan's meatpacking district. The term 'standard' was extremely modest for such a luxury hotel. Stan's fully-appointed suite gave him a stunning view of the Big Apple and the mighty Hudson River. He had a porter take his luggage to the waiting cab, which was ready to take him to his next destination – JFK airport. From there he would fly back home, to Palm Springs.

Stan looked forward to relaxing back home but the place would not be the same since his wife, Jean, had passed away. Before she became ill the sprawling beach side mansion was full of life, especially when Joshua and Elizabeth brought their young children came to visit. When the final stages of Jean's cancer got her Stan couldn't stand seeing her suffer. Feeling helpless. He stayed away in New York most of the time, burying himself in work to try and suppress his grief. But now it was time for him to revisit his life.

As the cab whisked him off to the airport, Stan reflected on his stewardship of GCE. The German project, the catalyst that launched his company onto the global investment scene, hadn't been without it's its problems. Investing over 100 million dollars German projects, each potential client had been scrupulously investigated by Stan Grant and his team of assessors, to ascertain they had adequate assets with which to service the loan. Stan never took unnecessary chances. His father had drummed into him to never take risks with companies that take risks. This he always found to be sound advice that had served him well over the years. However, later in his career, he did set up a scheme to support innovative companies struggling to get a commercial foothold.

Life with Jean had been mostly good. They had supported each other in most of their pursuits, except Stan's love of life on the ocean. For years he had yearned for his own ocean-going yacht, a dream he had not been able to fulfil. The two years before Jean, his wife of 32 years, had mercifully passed away, were very difficult, especially the final six months, when his ailing spouse needed constant care. He missed Jean being around and dealt with his grief by throwing himself even more into his work. Although it was cold comfort, since her death Stan sought consolation by indulging himself in material pursuits, especially the Ferretti 57 super yacht, with his name on it.

Stan's father had invested in Second World War bonds, which, over time, had become worth a small fortune. Stan had added to them over the years, as a nest egg for his son, Joshua Prescott Grant, then 12 years old. The unit price of each war bond was worth around 1 million dollars. Thinking of Joshua had him yearning to see his grand-children again. They hadn't been to see him since his wife's death. Joshua Jr and he hadn't seen eye-to-eye about certain company policies, causing a rift in family relations. Stan knew he would have to build bridges if he was to enjoy his grand-children's company. Knowing his estranged son's recalcitrance he knew it wasn't going to be easy.

For Stan, the finance and investments market had been a roller coaster ride during the 80's. However, in the bust and boom stock offerings, such as the dot coms of the 90s, many speculative investors made a killing on the stock market. Doing business this way was far too risky for Stan. But he took his son's advice and set up investments on line. This proved to be a good idea, and young Joshua was groomed for the top job. Amongst his many achievements in the financial markets, Stan Grant was most proud of pioneering global risk sharing, which was designed to share the liability of major investments between participating companies. As time went on GCE Securities became the lynch pin with a global overview.

GCE, under Stan's sound stewardship, operated like a massive business brain but it also had a big heart. Stan's board set up foundations to raise money for chosen charities and the company's books were open for public scrutiny on the Internet. Stan made sure there was no nepotism in his company. Everybody earned their way, even his son. Global and regional management structures of various boards were run by respected experts in their fields. There were no multi-million pay-packets, even for Stan. Whilst he was CEO, no executive was paid more than 100 times the rate of the lowest paid worker. Bonuses and investment portfolios were only awarded on merit.

As JFK loomed into view, Stan bid a silent farewell to New York, and sighed heavily as a huge weight seemed to lift from his shoulders. The company would soon be in Joshua's hands and he could then butt out. He had to give his son free rein to guide GCE as he saw fit. Joshua, who had gotten his masters in business management at Yale, was champing at the bit to make his mark in the company.

Stan mused over when he had finally decided to retire. It came about suddenly, in an unexpected way. He was walking down Madison Avenue on his way to work, a ritual he had performed probably thousands of times over the years. He was so used to the honking traffic and the aromas of fresh ground coffee and hot bagels he hardly noticed such sensual pleasures any more. He had perhaps passed street beggars a thousand time before, but for some unaccountable reason he saw it – really saw it. Sometimes the message was 'prepare to meet thy doom' or 'the end is nigh'. Stan, like millions of other New Yorkers, walked past these harbingers of doom every day, perhaps with a contemptuous glance in their direction, hardly giving the message a second thought. Yet something

that day, deep down in his gut, made him feel uncomfortable. Maybe it was time to take stock. After all he wasn't getting any younger. What a dumb thing to think! Nobody gets any younger. The entropic process sees to that.

## *Chapter 1*

**Solomon Ranstein**, one of the migrants that made up the wave of German Jewish immigrants during the mid-Twentieth century, wanted a better life for him and his wife, Rebecca. While wealthy Jews could afford to escape the turbulence of Fascist Dictatorship, by moving to cities such as Vienna or Berlin, poorer Jews like the Ransteins, could not. Consequently, like many others, they chose to migrate to America, where Solomon had his surname changed to Rance. Once settled, Rebecca gave birth to a baby boy, whom they named Isaac, after the son of the father of the Hebrew nation.

As a young boy growing up in New York's Lower East side, Isaac Rance lived in a multicultural Jewish community, comprising: Germans, Eastern Europeans, Russians and Greeks. When young Isaac complained about their cramped high rise apartment, his father, Solomon, a clothing manufacturer, would say, "You think you have it hard now my boy. Before we came here, back at the turn of the nineteenth century, Jewish families existed in tiny cramped tenements and pushed handcarts or toiled in garment sweat shops, for a meagre existence."

Isaac shrugged, "That's no excuse for things not being better now." It was a logic that planted a seed in his young mind, despite him being punished for being disrespectful to his father.

By the time Isaac reached high school age he had become very interested in science, especially microbiology and cyber science. At college, he read the work of Feynman and became intrigued by the questions the famous scientist was asking. One day, he asked his lecturer, "Why can't we write the entire 24 volumes of Encyclopaedia Britannica on the head of a pin?" His tutor ridiculed him in front of the class but that didn't phase the budding scientist. Isaac was constantly reading his dog-eared copy of his 1960 issue of 'Caltech's Engineering and Science', which he picked up at a flea-market in Greenwich Village.

Following his hero, Feynman, Isaac became a science graduate in cellular biology. Also, like Feynman, he wondered, as cells were capable of manufacturing processes and carrying out other functions, why couldn't humans manufacture things at the same level? Isaac took this line of thinking even further, wondering why it wasn't possible to manufacture at the sub-atomic level? This was a daydream in Feynman's day but then, in the nineties, computers were already becoming increasingly miniaturised with huge increases in memory capacity.

Isaac became very excited when, in 1974, a huge breakthrough occurred in quantum science. In Tokyo a university science professor Norio Taniguchi coined the term 'nano-technology'. At last 'nano' was competing with 'micro'. In the light of this, Isaac went with nano, which he saw to be more exciting and challenging than micro. This led him to become a quantum molecular biologist.

Isaac Rance secured himself a position with 'Quanano', an American company, in Silicon valley, California, where he researched into nanometer tolerances, to find out why, at nano level, gravity becomes less of an issue, whereas material strength became a greater one.

He brought up the image of the molecular structure he'd assembled, atom-by-atom. A slight

adjustment to the tunnelling microscope gave Isaac 50 nanometre resolution, allowing him to check the layers of thin metal films. Much thinner than a human hair, the layers worked together to store vast amounts of magnetic memory that could be written to and read by recording heads.

Isaac was constantly amazed at the technological advances that had doubled the amount of data that was stored, per square centimetre in the previous 12 months. His team, currently working on the 'red heads' of current hard disk drives, implanted metallic strips less than 2 nanometres thick. These were extremely sensitive to changes in magnetic fields.

He looked up from his screen. Turning to Angela, his lab assistant, he said, "Make sure you concentrate on the spacing. It's critically important."

"Sure, Dr Rance. I have it covered."

He was about to adjust the molecules that made the nano thin metal films when his intercom beeped. "Yes," he said, into the mouth-piece.

"Dr Rance, there is a Stan Grant to see you."

Isaac's diligence and dedication had got him noticed by management and he'd soon found himself being promoted, first to head of nano gravitics research, then overall head of research and finally to assume the role of Quananano's managing director.

It was in this function Isaac Rance welcomed Stan Grant into his office. It had been a few years since Isaac had seen the credit company director. Despite a few more lines on his face and less hair on his head, Stan still had a bounce in his step. "It's great to see you, Stan," Isaac beamed, giving his friend a hug. Isaac would never forget how GCE had extended credit to Quananano in the early days and still did so when the need arose. If it wasn't for GCE the fledgling hi-tech company wouldn't have gotten off the ground.

Stan grinned, "Never could figure what is was you are actually doing here."

"We're making tiny robots," Isaac said, by way of a simple explanation.

Over the years the two had become firm friends but this was the first time Stan had visited the research facility. In fact it was Stan's first visit to Santa Clara Valley, better known as Silicon Valley, named after the material used in computer microchips.

Following a warm up chat and coffee, Stan said, "Whenever I hear the word nano I can't help but think of that old television comedy, Mork and Mindy."

"It's a cross we have to bear, I'm afraid."

Stan looked at the plastic molecular model on his friend's glass-topped desk. "I guess we both sell things people can't see."

"Thankfully we don't need a crystal ball. Now, we have powerful enough tunnelling microscopes, we can see molecules and even single atoms."

"Any chance of me having a look?"

"Sure, but I'm curious as to why are you really here?"

“We’ve been extending credit to Quanano for many years now and I’ve never been to see what we are actually investing in.”

The scientist wasn't convinced. “Come on Stan, you didn't come all the way to the West Coast just for that.”

Stan studied his friend. “You have kids, don’t you?”

“Yes. Why?”

“You and me have seen better days – right. I mean I’m giving up the reins of GCE and you must be thinking about retirement yourself.”

“It comes to everybody in time,” Isaac answered, philosophically.

“You love your kids like I love mine. And, of course, we want the best for them.”

“Sure. And I believe the research work we are doing here, at Quanano, will help give them have a better future.”

Stan looked his friend in the eye. “Do you know why GCE invested in your company?”

Isaac grinned, “It certainly wasn’t so you could turn a quick profit.”

“I wanted to do something I could feel good about. Every business GCE has invested in is in the business of using up resources. Now I'm not saying we don't have to use up resources but I figure the planet can only let us take so much. Either the resource is going to run out or its depletion is going to cause some other negative reaction. You guys are different. You are virtually manufacturing something from nothing and that's a positive step in my book.”

“Thanks Stan. I appreciate that. So how can we help you?”

“Actually, I was thinking more in terms of us helping each other. But first I need you to convince me all this nano stuff is real and useful.”

Isaac nodded thoughtfully. He removed and wiped his glasses “My father often told me how hard it was for Jewish immigrants in the early days when they had to slave all the hours God gave them, for a mere pittance. People shouldn’t have to exist like that. I believe nano-technology, if used in the right way, will help alleviate such global problems. So I’m happy to explain how useful our work can be. So how do you want to approach this?”

“I was thinking of basing it on a number of simple questions like: what is nano-technology? How does it work? When do you figure it will start making a difference? Who decides on what research goes ahead or not and according to what criteria?”

Isaac rubbed his grey bearded chin. “Email me those questions and I will get back to you.”

“Thanks, I appreciate it.”

Isaac said, “So you are really giving it up. It must feel very strange after all these years.”

“More scary than strange. But I am working on an idea that will keep me busy.”

“Oh! What idea is that?”

Stan Grinned, "If I told you I would have to kill you." Seeing the blank look on the scientist's face, he said, "Actually, it is about creating a new ethical mindset, to help ensure that nano-technology takes a safe and sustainable path."

"Amen to that." Isaac agreed.

## *Chapter 2*

**Captain Samuel Berry** reckoned if humanity was good at anything it was its ability to come up with bigger and better weapons with which to destroy itself. But now science went for smaller and better – very small. Nano scale to be precise. Nano-weapons were soon to supersede the 'smart' weapons of the Gulf War era, and Sam's company was well-placed to take advantage of the new trend. Sam, the CEO of Ephemess Industries, turned to the General he was showing round the facility. “We are engaged in some ground-breaking projects, quite literally when it comes to smart explosives.”

General Munter was old school. Clean shaven with short steel grey hair, he was the epitome WWII army brass. He didn't know much about how smart weapons worked. He left that stuff to the boffins and geeks. “So what's this latest weapon you hinted at, Sam?”

Sam needed Government funding and General Munter was influential when it came to the military budget. He announced, proudly, “We are working on an anti personnel weapon, capable of seeking and injecting toxin into unprotected humans. The human lethal dose of botulism toxin is about 100 nanograms. As many as 50 billion of this toxin carrying device could be packed into a briefcase.”

“Hm, war in a briefcase. How close are you to making this baby?”

Sam scratched his chin. “Well this is a very expensive project and funds are running dry. To keep afloat we may have to divert our attention to other commercial products.” It was actually nearly ready for production, but he wasn't about to say that.

“Sam, leave it with me. I'll get some funding application forms to you and we'll take it from there. But I am very impressed with your ideas.”

Sam smiled. He was now much closer to receiving orders for his super weapon, from the US military, with which he was closely aligned. And he was almost ready to service a growing and demanding world arms market. Then Ephemess would really make its mark.

Captain Sam Berry fought for his country under both Bushes. He figured the next war would be totally different, being fought with totally different weapons – nano-weapons. His company, Ephemess Industries' needed lucrative contracts with the US government, as well as with other nations who wanted state of the art weapons systems. Originally called Future Military Systems, it became shortened to FMS, which phonetically became Ephemess. Sam had a number of other projects on the table, including: nano scouts, nano force-fields, nano mind erasers, nano needles, water bullets, desynchronised energy fields, nano heart stoppers and stroke inducers. To Sam Berry all was fair in love and war.

Over dinner, at the 'Local Smoke', in Cooks town, New Jersey, with General Munter as his guest, Sam said, “In a way, General, I see myself as a pioneer, like my great, great granddaddy, who went West by wagon train, to set up in sunny California.”

Munter stopped digging into his steak, “Hell, they were certainly brave, intrepid souls.”

“They sure were. My ancestors did it really hard. Their journeys were beset by all kinds of danger and hardship. But just because I'm not being attacked by wild natives, doesn't mean I don't have to guard my 'wagon train' against enemies.”

“What enemies are they Sam?” Munter spluttered, moving a big chunk of mushroom steak around in his mouth.

“My firm, and other pioneering companies like it, are being hassled by the newly founded FDA regulatory body for nano-technology industries. So far they had only produced a draft copy of proposed regulations for the industry, but that's the thin end of the wedge.” He handed his copy to the General.

Munter put down his cutlery, fitted his reading glasses and looked at the report. At length he turned to Sam, “It's got no bite.”

Sam took it back. “Yeah, I know that. But it's important to keep abreast of such things, if I am to be one step ahead of the enemy.”

Munter snarled, “Those God-dam liberal, pinko do-gooders, who do no good at all, are the scourge of this earth.”

Sam smiled, waving the report, “To be forearmed is to be in control.”

“I'll drink to that,” Munter said, raising the dregs left in his wine glass.

All-in-all it had been a successful networking day, Sam mused, as he snuggled up to his wife that night. Because he manufactured weapons of mass destruction, did not, by Sam's reckoning, make him an evil man. There were rogue nations and bad guys in the world who wished to do America harm. His job was to see it did not happen. Most people, he reasoned, may well find his line of work unsavoury but someone had to do it.

No, Sam was not evil. But, by his reckoning, the world he lived in, was. People did evil things to each other and his job was to provide clients with the means by which they could defend themselves with the best and most efficient weapons available. During medieval times, swords and shields were state of the art weaponry. When guns were first used, military architecture was completely re-designed. High-walled castles gave way to lower more sturdy forts, that were better defended against cannon fire. Now it was nano-weapons, or would be once they became a practical alternative to the conventional type weapons currently used. Nano-science, being brand new research territory, made it hard enough coming up with the goods without bleeding heart liberals crying foul because they didn't understand the technology. Having mentally justified his actions, Sam smiled and drifted into sleep.

## **Chapter 3**

**Marty Diamond** was a gawk at the magnificence before him. As the limousine transported him towards the entrance of the huge house, the comedian thought he was approaching a palace. Maison de Liberte, the Palm Beach mansion and home of Stan Grant, often had that effect on first time visitors. Marty's Hollywood home was by no means a hovel but Stan's home looked like a royal residence, by comparison. With servants attending to his luggage and being greeted by a maid, holding a silver tray, upon which was perched a glass of bubbly, Marty felt a bit like royalty himself. Then he saw his host, tanned and attired in Bermuda shorts and Hawaiian shirt, approaching him.

"Hey, Stan the Man, you have got yourself a beautiful pad," Marty stated, delivering a high five.

"Marty, it's great to see you. Welcome to Maison De Liberte, which I can enjoy much more, now I am retired."

"Retired! Get way,"

"No, seriously. Joshua gets to run the show now."

Marty raised his glass. "The king has retired. Long live the king."

"So how's your career going?"

Marty took an instant trip down memory lane, serving burgers in frantic, fast-food joints while waiting for the agent's call. That was if any agents had showed any interest in him. His wild red hair and sallow complexion hadn't had movie directors reaching for their cheque books. "Oh I'm playing in Las Vegas at present."

"I'm pleased for you."

"Man, I'll never forget how you believed in me when I was trying to get a leg up."

"I saw something in you I don't see in many people."

"What? My rugged handsomeness; my genius; my outstanding talent; my humility? Marty grinned.

Stan laughed, "No, your bullshit."

They both laughed.

"Marty let's go down to the beach."

"It's okay for you. You're dressed for it. I'm still in my airline creased clothes."

The word beach alerted Chaser, Stan's Red setter, from his nap. His ears pricked and his tail began wagging furiously."

"He understands English!" Marty said, surprised.

"He understands beach."

Chasers tail went up a gear.

As the pair walked slowly along Stan's private beach front, with the red setter racing ahead, Marty said, "On the phone you said something about running an idea by me. But you haven't told me what it is yet."

Stan stared out over the blue Atlantic ocean. Then he turned to his guest. "It's beautiful isn't it"

"It sure is Stan. And you deserve it."

Stan looked Marty straight in the eye. "More to the point our kids and grand kids deserve it. Do you have any children, Marty?"

"Not that I know of – why?"

"Now that I'm out of the investment game I want to invest in our kids future."

"An honourable thing, Stan."

Stan fixed Marty in his gaze. "Do you know what I fear most?"

"That everybody becomes stinking rich and they won't need GCE any more," Marty laughed.

"I fear when I go I will be leaving our kids to clean up this fucking mess. I don't want to leave them with our terrible wars, our poisons, our poverty and starvation."

Marty, realising Stan was deadly serious, sobered. "You're not fucking Atlas. You can't carry all the problems of the world, even on your broad shoulders."

Stan stopped. He looked Marty in the eye. "I have an idea."

"The one you want to run past me," Marty said, jumping back as the incoming tide was about to swamp his expensive loafers.

"Have you heard of nano-technology?"

"Something to do with Robin Williams, isn't it? Nano, nano."

Stan smiled, "As a friend of mine said, that old show had a lot to answer for." Stan paused, then explained, "While I was running GCE the company extended credit to serious companies developing nano-technology. I got on board with a fledgling company called Quanano, because I believed nano-technology is the great dream for the future."

"It about making tiny machines, right?"

Stan turned to look his friend in the eye. Marty, imagine that we are able to heal people more effectively, to create clean energy, and produce food from virtually nothing without having to grow it."

"Not without taking mind-enhancing drugs. Don't tell me this is your idea."

"No, but I've been following what these scientists are achieving and you would be amazed." Noting his friend's blank expression, he explained further, "Marty, us humans can't produce a damned thing on this planet without messing up something else and leaving waste behind. That is except this nano-technology. These scientists are like modern day wizards who are able to produce something

from virtually nothing; that has no impact on the surrounding environment and leaves no waste in its wake. In this world, which is beset with seemingly insurmountable problems, I have come to believe this science is our best chance at giving our kids a healthy, wealthy future.”

“Okay,” Marty responded, impressed. “Where do I come into the picture?”

“I can’t do this by myself. I need to surround myself with like-minded dedicated people who have influence in various areas of society. First off, I need somebody who is passionate about this and has the ability to see the big picture. Someone who is expert at working out strategies. I was wondering, what with your show biz connections, if you might be able to put me on to the right person for the job.”

“Gee, and there’s me thinking you would land me with something difficult.”

They both laughed and headed back indoors. Then Stan turned and whistled. Next, a reddish brown blur hared up the beach toward them. Waiting until he caught up with his master, Chaser gave his customary wet shake.

## Chapter 4

**Jason Laine** walked through the row of flags of all nations, as he entered The Headquarters of the United Nations building. Located along the East River in New York City, the land occupied by the United Nations Headquarters is under the sole administration of the United Nations and not the U S government. Jason was present in his official capacity as a representative from the Military Advocates Office. He was also there as a delegate of the Military Applications of Nano-technology (MAN) meeting, soon to take place. The MAN conference, also supported by the International Red Cross, came about to answer questions about this uncertain new science. Jason's mind, however, was already made up concerning that issue. Following directions, he found himself in a 12<sup>th</sup> storey conference room with a dozen or so other attendees.

Selina Castello didn't hold out a great deal of hope but she would give it her best shot. The former president had died of a stroke, leaving a vacancy for chairing the meeting. She was supposed to be guiding the International Committee for Science Ethics. Instead she was summoned to chair the MAN meeting.

After opening the meeting, she said, "Let me welcome you all to the MAN meeting. Today our task is to try to nail down regulations acceptable to all parties. Each of you in turn will be able to table your reports and hopefully we will come to a consensus on this vexing issue of nanotechnology weaponry. The first item on the Agenda we need to discuss deals with the need, or not, depending on your views, to provide a more informal understanding of additional protocol under article 36."

Humanities Professor, Claudia Sutherland said, "Provision offering clearer guidance and transparency for compliance views has to be a good thing and a step in the right direction."

Rodger Livingstone, from the UK Ministry of Defence (MOD) disagreed. He argued, "Provision offering these things makes it much easier for our enemies and potential enemies to read our moves. Anything pertaining to new Military Delivery Systems cannot be for public consumption."

Stanford University nano-science professor, Matthew Fullick, said, "I agree with implementing a uniform reporting system. I think it will allow independent observers, such as non government organisations' to monitor nano-weapons properties."

Jacob Duong, the Assistant Secretary of Defence, said, "While I don't disagree with having a uniform system I would be concerned if all information was for public consumption. There would have to be specifically decided upon information that comes under national security guidelines."

Claudia responded, "I believe it is crucial, if we are to have any credibility, to make technical information more accessible to the public for wider debate. Sensible debate could influence decision making about appropriate weapons choice, rather than allow manufacturers and end users to decide..."

Jason Laine, who was waiting for the perfect moment to make his bid, interjected, "... An alternative scheme could enhance technocratic accountability with the establishment of a new transnationals

institution, as a regulatory oversight body to help coordinate policies. With respect to military nanotechnology research.”

While the others were trying to get their heads around what he was saying, Dr. Castello asked, “What does that have to do with the subject of clearer guidance and transparency?”

Jason responded, “Well, we need to train reviewers and propose measures for harmonisation of reviews.”

The group became even more confused. But that is what Jason intended. He had another agenda that day.

Jacob tried guiding the meeting back on track. “May I suggest a third choice that sets up an independent technical secretariat comprising professional scientific organisations from different countries to make self-regulation of nano-weapons development. This will be enforced, with penalties or sanctions for the failure to follow the guide lines in good faith, as well as rewards for producing requested information and test data.”

It was making too much sense for Jason. It was time to put another nano spanner in the works. He added, “That seems like a very sensible suggestion. However, unlike the regulation of biotechnology for military applications, there is no binding treaty that outlaws the development, production, stockpiling or use of offensive nano-weapons”

“Which is why we are here,” Selina sighed.

“Precisely,” Jason retorted, “But without a binding treaty there is nothing to self-regulate and with nothing to self regulate there can be no binding treaty,”

Selina responded, “With that attitude we just keep going round in circles. We have to focus on what we can achieve here today.”

The meeting did go round and round in circles. Jason made sure of that by constantly playing the Devil’s advocate. Eventually, after a non-eventful meeting, Selina summed up, “In conclusion this committee believes that lack of specific treaty rules pertaining to international law governing the acquisition, development and use of nano-weapons creates a hiatus where such weapons can be used experimentally and without adequate scrutiny. Although we have to wait for a full scientific study there are already warnings regarding the health and environmental impacts of engineered nano-particles used in military contexts.”

After the meeting, Jason pressed a contact on his phone. ‘Hi, Jason Laine here. Everything went according to plan. There was a short pause. “No, there’s nothing to be concerned about on that score.” Another short pause. “I will look forward to a boost in my account.”’

## Chapter 5

**Martin Scragg**, despite displaying some skill in the area of light entertainment, soon discovered Hollywood to be akin to a huge Aquarium full of very small, if talented fish, all vying for the big time. If that wasn't enough of a challenge, Martin's red hair and pale freckled skin further lessened his chances of being a raging overnight success. But his doggedness and belief in self – qualities that stood him in good stead – helped him stay the distance. Having headed West to LA where, between waiting tables, grilling burgers and doing any menial task going, he landed a few extras roles in Hollywood movies. He eventually got himself an agent, who's first advice was for him to change his name. So he became Marty Diamond, and his situation markedly improved.

Back home in Kingfisher, Oklahoma Martin Scragg, had been a local hit, with his stand-up, song and dance routines. But in LA, with so much unrecognised talent floating around, Martin soon discovered the fish become very much smaller whilst their ocean home becomes much bigger. He needed an edge. So he used his hard earned money to take acting and singing classes. In the meantime, hungry for fame and riches, he scrounged for any part he could get on the Hollywood scene.

Now, here he was headlining at the East/West Lounge in Santa Monica, as Marty Diamond, singer, dancer, and stand up, all in one act. If only the folks back home could see him now. He left the stage before the applause died down, and met Maggie at his dressing room door. She looked much younger than her age. Her luxurious chocolate coloured thick curly hair belied her sixty years. "How do you stay looking so gorgeous, Maggie?"

She smiled, "Hi Marty, you were hot tonight."

"You mean you saw the show." He unlocked his dressing room and invited her in. He then went behind a screen and changed out of his stage clothes. "Throw me those jeans he said," pointing at some old denims hanging over the chair.

Maggie tossed them to him. "A bit different to your fancy stage gear."

"Yes, it's sort of reverse Cinderella – from glitter to tatter."

Maggie laughed, "Why don't you shut up and freshen up, so we can go out and grab a bite?"

"Are you trying to pick me up?"

"You're the one who asked me here."

"Yes, I have a friend who needs your expertise."

"I'm retired from all that bull shit."

"That's what I told him, but when Stan Grant gets his teeth into something he won't let go."

Maggie looked at him wide eyed. "The Stan Grant!"

"Yes, that's him."

“How on Earth do you know him?”

“What, you mean a lowly comedian like me?”

Maggie nudged him playfully. “I didn't mean it like that.”

“You've hurt me to the quick. Dinner's on you now.”

Getting back on track, Maggie queried, “The Investment guru. What on earth does he want with little old me?”

“A fucking miracle.”

“I'm intrigued.”

“I'm starving. Let's go and eat.”

While tucking into a tasty grill, Marty explained the situation, without giving away too much detail.”

Maggie wiped her mouth on a serviette. “So Stan Grant needs a strategist but you won't tell me why.”

“He swore me to secrecy.”

Batting her eyelashes at him, she smiled, “But surely you can tell little old me.”

“You can't trap me with your feminine wiles, evil wench,” he hammed. Then, becoming more serious, he said, “Besides he wants you to fly down to Palm Beach, so he can tell you himself.”

“Maggie reached for her wine. “When?”

“Yesterday.”

“That urgent, huh.”

“I think you will understand, once he explains.”

“I haven't said I'm going yet.”

## Chapter 6

**Stan Grant** greeted Maggie at the front entrance of Maison de Liberte. After settling in, Maggie caught up with the multi billionaire, in his sun lounge, where refreshments were already set up. After they drank freshly squeezed orange juice and partook of some delicate pastries, Stan got down to business. “Ms McGee, I’m pleased you decided to come here. I am convinced with your qualities you are perfect for the job I have in mind.”

“What job would that be, Mr Grant?”

“Your ability to combine innovative, perceptive and holistic insights with the pragmatic and systemic skills of a planner, is what I am looking for.”

She smiled, “I should have you writing my C V. Not that I need it now at I’m retired.”

“Ditto,” Stan nodded. “I think retirement is the time to be busy with the important things.”

“And there’s me thinking it’s about lazing on a golden beach while handsome studs ply me with cocktails.”

He grinned, enjoying her droll humour.

Changing the subject, she said, “I was really surprised when Marty said you and he were good friends.”

“Yes, we met some time ago, when he was trying to make a name for himself. I was able to help him then and he has achieved great things.” He paused, then asked, “So, what has he told you about my idea.”

“Nothing much – the rat.”

“That’s my fault. I told him not to tell anyone. I always think ideas are best explained by those who have them.”

“Sounds like good logic. So, Mr Grant, what is this enigmatic idea of yours?”

“Stan, please. Well since I retired recently I realised all of my working life has been about investing in various companies and projects. Now it is time to invest in my progeny and those to come.”

“Okay, I’m with you so far. So how do you propose to do that? Leave them huge inheritances?”

Stan smiled, “That’s is too simple and boring. I have a much more interesting proposition in mind.”

“Which is?”

“I want to leave my kids a better world than the one I arrived in.”

“Beautiful sentiments, Stan. Persuasions most caring parents would probably have.”

“Yes, but how many people who want to do something have the means to do so?”

“Even you can’t move mountains, no matter how much money you have.”

“Have you heard of nano-science.”

She slowly shook her head. “Science was never my strong point but I believe it is about making tiny things.”

Stan smiled, “Yes, but it's a bit more than that. One of the companies GCE has invested in over the years is involved with nano-research. The man who runs the company, Isaac Rance, has introduced me to this extraordinary nano world about which I am very impressed. This amazing technology is researching into ways to produce clean energy, food stuffs, non invasive medical procedures, etc.

“Okay, so where do I come into the picture?”

“I need some sea air. Would you like to take a stroll on the beach with me?”

“Okay, but I'm still waiting for an answer.”

“Of course Ms McGee. Shall we go?”

“It's Maggie. Okay.”

They stepped down onto Stan's secluded beach, with its rocky inlets, Chaser was already harassing seagulls. He seemed so wrapped up in his game, he ignored Stan's call.

Maggie, entranced by the view, said, “You are so lucky to live here.”

Stan agreed. “I try not to take it for granted.”

Ever since her girlhood days, Maggie had loved the feel of damp sand beneath her feet. It had been a while since she had enjoyed such simple pleasures. She paddled in the sea for a long time, as all worries and cares got washed away. After scrambling over some rocks and checking out marine life in cracks and crevices, the pair retired to beach lounges, to relax. Stan ordered cold refreshments, which soon arrived, as did Chaser, who had his food radar on full alert.

Maggie sighed, contented. “What a paradise you live in, Stan”

He grinned. “I need a bit of comfort in my old age.”

Maggie so wanted to put her feet up and leave the crazy world to the crazies out there; there was no shortage of them. She'd had enough of the rat race. Funny term, she thought, with a weird vision of small rodents with numbers, chasing a piece of cheese, pulled mechanically, around a track.

“Nickel for your thoughts,” Stan said, bringing her back to the present.”

“Oh, I was thinking about the power hungry people out there. The jostling for position, the corruption, the deceit and betrayal by people in power. I could never work out what made them tick – I mean really tick. What makes their hearts beat? There's got to be more to it than money, wealth, power and greed, the usual material motivations.”

Stan agreed, “I've certainly met my share of them in business and I've always prayed I wouldn't become one. Money, in my book, is a poor substitute for a lack of self love, self respect and a sense of well being.”

She looked him in the eye. “Stan, I've never been what you would call a religious person. I was brought up a Roman catholic but I soon kicked that dogma aside. But I've always had the weird

idea that we are here for some kind of purpose. But what it is, beats me. But one thing I'm pretty certain about is, It's not to rob and kill each other."

Stan looked directly at her. "You said I live in a paradise. But these are all trappings. The real paradise is having enough to eat, a dry place to sleep; a fire to get warmed by. And it's not a paradise unless it is for everybody. I would love to leave this mortal coil knowing everybody on earth has access to these basic things. Things we take for granted on a daily basis. I believe nano-technology, applied ethically, can achieve this. And I want you to help me in this adventure."

Maggie had been expecting this but when she finally heard his request, it hit her like a wave crashing on the shore. Why, when she was contemplating a life of luxury and laziness, even think of getting back on the treadmill. Yet, here she was sitting, chatting with one of the world's richest men, actually considering going back to work. Did the challenge attract her? Was it because she shared Stan Grant's dream? Or was it because she wanted to lock horns with entrenched scientific values?

Stan, noting doubt in her emerald green eyes, said, "I would like you to spend a few days here, relax and think about it."

"I would like that," she smiled, feeling the pressure to make a decision, diminish.

As her holiday progressed, with the perfect host, as she saw Stan to be, the more she pondered his proposition. She wasn't certain, but the more she considered the conversation she had with him that first day, the more she came to realise this weird quantum science was maybe the best chance the humanity had for its survival. And even that had already been dangerously corrupted. The American military industrial complex was getting the lion's share of tax payers money that was going into nano-research, while the struggling private sector, carrying out nano-medical research, had no such access to the deep pockets of government. And that meant humanity was also losing out. Realising this, Maggie, crestfallen, thought Stan's battle was already lost. That he was a latter day Don Quixote, tilting at his own brand of windmill.

However, Maggie decided to keep an open mind. She visited Palm Beach Public Library and looked up references for peer reviewed writings on the subject of nano-technology. Although it was not exactly peer reviewed, she became intrigued with 'Engines of Creation – nano-technology will save us', in which the author Eric Drexler postulated nano-technology – the ability to create molecular assemblers, capable of constructing just about anything, in limitless quantities – would be available in the 21<sup>st</sup> Century. She put the book aside, removed her glasses and rubbed the bridge of her nose.

She looked around. It was late afternoon and she was the only person left in the reference section. The library would be closing soon so she went back to the book. It informed her that Drexler claimed nano-technology would have a dramatic effect on medical technology – including reversing the aging process – the space program, and military technology. He believed, used wisely, nano-technology could bring about higher living standards for everyone, with little impact on the environment.

Maggie wasn't sure about it reversing the aging process. Wasn't seven billion people enough for the groaning planet to cope with? She made a note of the words 'if used wisely' She put a big question mark beside it. Then she packed up her things and left the library. Once outside she reached for her cell phone and phoned a number in California. Can I speak with Dr Rance? She asked once a voice

responded.

## Chapter 7

**Maggie McGee** looked out of the small Perspex window. Silicon Valley, from the air, looked nothing like her idea of a valley. It looked like any other Technology Park, only much larger. Nor was it made of silicon, although much of its product was.

After being processed at San Jose International Airport, Maggie took a Sunnyvale taxi to Clara Valley. Quanan Quantum Research, her destination, was nestled among the computer companies in the huge technological complex. It was a large white, two storey, curved building, outside of which was a massive sculptured 'Q' set atop a decorative fountain. Isaac Rance had been expecting her, after a call from Stan Grant, so she was shown straight through to his expansive airy office. As she entered his domain, he stood up and removed his spectacles. "You must be Ms McGee. Stan told me to expect you."

"Hello Dr Rance," she said, extending her hand in friendship. "Thank you for making time to see me."

"I am rather busy and, to be frank, if Stan Grant hadn't asked me to see you we wouldn't be having this meeting now."

"I appreciate your honesty," she said, eyeing the tall, bearded scientist.

He looked at the attractive brunette with curly shoulder length hair. "So, how can I help you Ms McGee?"

"Maggie please. Well I know you're a guru of this nano-technology stuff, so you'd obviously be aware of people like Drexler."

"He's naive but well meaning."

Surprised about his off hand remark about the pioneer of nano science, she said, "Drexler sees nano science to be a potential world Saviour. Is he exaggerating then?"

Isaac smiled, filling out his sunken cheeks. "Eric Drexler's prediction of assemblers in industrial technologies, to create anything, even food, in abundance, if it is possible, will probably make the workforce redundant. Of course this is not so much a problem if people out of work have access to Drexler's abundance."

"You seem somewhat cynical, which, I must say, is somewhat surprising, considering the nature of your research here."

"Our area is medical technology. We are creating assemblers capable of sailing through our capillaries to heal diseased organs, or even to replace our cells with new manufactured ones. This could allow us to live healthy lives for hundreds of years."

"So how is the planet going to cope with all these immortals?"

"I'm not so sure about them being immortal. But I take your point. Overpopulation could become a

major problem, with most humans becoming drones in society. Again, abundance can help alleviate the problem. But we are nowhere near achieving Drexler's prediction."

"So how close are you to producing these assemblers?"

His plum coloured eyes widened. "We already have them functioning."

"If that's so, why isn't this wonderful technology already being used, on cancer patients, for example?"

He sighed deeply. His main dislike, people voicing opinions about things of which they knew little or nothing, made him tense. "You must understand we are dealing with a totally new science. We are sure the assemblers will faithfully carry out their tasks. We are also sure they are virtually indestructible and will remain in the host organism. What we don't know is how they will eventually affect the body."

"Don't you scientists carry out experiments on dumb animals to find out about these things?"

"We do carry out laboratory tests, yes, and with very promising results."

Sensing Isaac's constrained frustration, changing tack, Maggie asked, "Is it government regulations that are holding your research back?"

"If only it were that simple. We cannot fight what we are up against. If the industry could secure more government funding, nano-technology researchers are much more likely to keep on the straight and narrow?"

"Are you suggesting improprieties take place in nano-research?"

He sighed at her naivety. "Don't sound so shocked. Improprieties take place everywhere. Companies close to the wall, may well fudge a few figures, take short cuts in research. This is pioneering territory. There are international bodies trying to work out guidelines but they don't know what they are dealing with."

"Can't you scientists advise them?"

"It's a bit of a catch 22 I'm afraid. Non Government Organisations that advise the government on such issues cannot come up with a cohesive rulebook because they don't understand the rules governing nano-science. And nano scientists don't want interference from regulators. I mean, seriously Ms McGee, how can regulations work, when regulators don't know what they are regulating? Besides that, the current version of science demands that no matter what scientists do, eventually all life in the end gets destroyed anyhow."

Maggie became wide-eyed. "Surely you've got to be joking, an attitude like that is horrific. Surely you are exaggerating."

Isaac took a deep breath and looked straight at Maggie. "No, I am deadly serious. The science we have is convinced all the energy in the universe is radiating away into cold space and one day all life in it must be destroyed." Taking a breath, Isaac continued. "I have just described the functioning of the supreme law that governs Western science. Einstein called it the premier law of all of the sciences. Its technical name is the second law of thermodynamics or the law of universal chaos; scientists worship it as being gospel. He ended his heart felt exclamation with the words,

“But I believe somehow nano-science is not necessarily ruled by it.”

Maggie's mind reeled at what she had just been told and all she could think of to say, “Surely this sort of Mexican stand off is not helping anybody.”

He nodded, sagely. “Unfortunately, Ms McGee, you are correct.”

Armed with her research, Maggie contacted Stan Grant. They arranged to meet at the River House Restaurant, where Stan had made reservations for dinner. After being flown to Palm Springs airport, she was whisked off by limousine to the restaurant, which, to her delight had wonderful panoramic Florida water views. They went with the South African Rock Lobster tail with prime sirloin steak, vegetables. All of which was topped with an appropriate wine.

Between bites Maggie gave her report. “This is much more complex than I thought, Stan. You said your idea has two stages. From my reckoning, major issues have to be dealt with before we even get to the first stage.”

Stan smiled. “You said we. Does that mean you are on board?”

She looked the billionaire in the eye. “Whoa cowboy. Reign in a bit and let me explain.”

“Sure thing, ma'am.”

She grinned. “The way I see it is we have an industry that can potentially create technologies that may be able to deal with some of the major problems faced by humanity. However, in order for this to potentially occur, safety rules need to be put into place by people who don't understand what they are trying to regulate. Meanwhile, the survival clock is ticking merrily away to midnight and industries with the potential to save us are going under through lack of funding.”

Stan sat wide-eyed. *This woman certainly had a knack of putting it in a nutshell.* “That about sums it up, I guess.”

“So you see, we are nowhere near researching even the first part of your plan.”

“So, have you come up with a suggestion?”

“First off we need to galvanise the moderate nano-tech folks into some kind of international group, to pressure government into providing adequate funding for Nano-research that strictly follows ethical guidelines.”

“Which means we need to come up with ethical guidelines first.”

“Exactly. Now, as you know, I've been speaking with your friend Isaac Rance. He is up for working out some guidelines with his peers but he is concerned his funding is drying up. Apparently GCE has cut off his credit.”

Stan's eyes widened. “Right, we need to see him.” Stan reached for his phone.

“Are you going to ring him now?”

The money guru grinned, “There's no time like the present.” Then to his phone, Hello, is that you Isaac. After a pause. Look, I have Maggie McGee with me. We need to set up a meet as soon as possible. Another pause then, Yes that would suit me fine. See you then.” He then phoned his personal pilot and organised an 8 am take-off. Stan turned to Maggie. “We are flying up tomorrow.”

“Oh, that was quick,” she uttered, realising her new friend was an action man.

Stan winked, “There's only the quick and the dead.”

## *Chapter 8*

**Stan Grant** stepped from the cab outside Global Credit Enterprises, in Madison Avenue. The incessant traffic noise and maddening crowds quickly reminded him of why he had not been back to the 'Big Apple' since his retirement. GCE now took up an entire floor. Joshua had obviously been expanding the company. It had been a while since Stan had crossed the threshold into the realms of GCE, and he hardly recognised the place. Joshua had changed the company's look in such a way Stan saw it as personal affront to his way of doing things. He shrugged it off. It was his son's company now, to run as he saw fit. However, it felt very much like the way the new warrior chief destroys and defaces all traces of the former leader. This did not bode well for the meeting to come.

Stan smiled at his ex-receptionist.

“Mr Grant, it’s great to see you.”

“Thank you Janice. Is he free?”

“Yes, he said for you to go straight in.”

The old war horse followed her directions in the now unfamiliar surroundings. He came to an office bearing the sign, 'Joshua Grant, Chief Executive Officer'. Stan entered the now alien domain.

“So, you've come to see how it's done, Father,” Joshua said, half joking, as Stan walked into his old office.

“Hello son, you are looking fit and well.”

“You too, father. So what do you want?”

Stan looked around the new stylish office fittings – all chrome and glass. “The words 'new broom' spring to mind.”

“The old place certainly needed some sweeping.”

“You've obviously made quite an impression.”

“As much as I'd like to carry on with the small talk I'm very busy, so if we can cut to the chase.”

“Oh, yes. The thing is Isaac Rance tells me you have stopped his credit.”

“If he's is one of your lame dog causes, then yes, I have pulled the plug. GCE is only going to support viable companies that pay their debts on time.”

Stan argued, “Some companies show a lot of promise but need help to get on their feet. We were always there to give them a helping hand.”

Joshua brushed the idea aside, considering it worthless. “Yes, well father those days are over.”

Stan persisted, “GCE has a proud tradition of giving deserving companies a leg up.”

“Yes well GCE is not a charity and I have to answer to the shareholders.”

“Does the board support you in your attitude towards our clients?”

Joshua sneered, “They came round to my view. And our bottom line has improved as a result. Let me ask you question, father.”

“Go ahead.”

“When you handed me the reins of GCE did you not say it was mine to run as I saw fit.”

“Yes, and it was obviously poor judgement on my part.”

Joshua sneered, “Nevertheless it stands, and there is nothing you can do about it.”

Stan stood stunned. He knew his son could be cold but this was utter resentment. “It looks as though I will have to start attending shareholders meetings again”

“Be my guest, but it won't change anything, as long as the shareholders, including yourself, receive bigger dividends as a result of our new policies.”

Stan sighed, “Look, enough of this bickering. I came to tell you about a project I am engaged in that would look good as part of GCE's vision for the future.”

“Oh, what is that?”

“To campaign for an ethically guided science and ethical companies that make use of the technologies being developed by this science. It's about leaving a safer and more healthier world to our descendants.”

Joshua said, icily,. “Father you'll have me in tears in a minute.”

“What's that supposed to mean, Joshua?” Stan said, controlling his growing anger.

“It means your bleeding heart politics don't work with me.”

“Well, I intend to float this idea at the next board meeting.”

Joshua looked his father in his eyes. “Oh, I forgot to tell you. There are now only 12 members of the board and me as their president. That's the way we run things now.”

The fact he was being shut out hit Stan like a bucket of cold water. He was silent. Then composing himself, he responded, “Then I shall advance this proposal by proxy, through somebody I can trust.”

Joshua laughed. “So you want to lock horns with me. I advise you not to cross me father. Just go away and amuse yourself with whatever you do these days.”

Stan saw red. “How dare you try to brush me off in such an offhand manner. I don't need this company to promote my idea. I was doing you a favour, because, whether you like it or not, my name still carries a lot of weight in the world of finance.”

“That may well be so, father but around here I make the rules and we will not be investing any time or money into your pinko, touchy-feely schemes.”

Standing on the path outside the GCE Offices, Stan Grant felt a cocktail of emotions. Overriding his anger, sadness and regrets was the sick feeling in his gut. He never realised, until then, how

estranged he was from his son. *Had his son developed such a mercenary attitude to life in the short time he had been in power? Or was it present in him before and Stan had totally missed it? Could university education have damaged his son's soul in such a damning way?*

## Chapter 9

**Ryan Crane**, the US Custom's Director waited quietly near the boat shed, off the beach in Fort Lauderdale. It had been a long and tedious operation and he didn't want to blow it at the last hurdle. It had started off as a vehicle smuggling operation, so he wasn't even involved at the beginning of the case. His area of expertise was tracking down weapons smugglers, especially those dealing in weapons of mass destruction. He moved lightly, shifting the weight from one leg to the other, to alleviate a cramp in his left foot. Then he saw a vehicle approaching. He crouched down as the headlights arced in his direction. Speaking quietly into his radio he said, "Stand by."

Once the car's headlights were doused, Crane tentatively made his way forward. The smugglers had to be caught in the act with the weapons. Using night vision goggles he saw the suspects leave the shed carrying a large wooden crate. This had to be it. "Go, go, go," he barked into his radio. Suddenly the area was bathed in light as custom officers in flak jackets, carrying automatic weapons, descended heavily upon the two startled men, who, statue like, still held onto the box.

With arrests made, Crane checked out the contents of the crate. Inside he found hand held missile launchers and automatic rifles. The shed yielded even more guns, personnel mines and grenades, all of which were confiscated and loaded into the transit van that waited nearby.

Crane turned to Dalby, his first officer. "All in all not a bad nights work. Well done."

"It'll only be worth it if we get them to talk, sir."

"It shouldn't be too difficult. They almost shat themselves when they saw our people. Now lets get them to our lock up."

Pogreen and Darick, the two arrested weapons smugglers, were separated and put in different cells. They were later interviewed individually. Pogreen was first.

After introducing themselves to the recorder, Crane fixed Pogreen in his gaze. "How did you get the weapons?"

Pogreen stared dumbly at him and Dalby.

Crane decided it was time for a reality check. "Mr Pogreen, for that weapons haul we caught you with, you could be looking at 30 years minimum. So I suggest you cooperate with us,"

"We were delivering a crate for someone. We didn't know what was in it."

Dalby said, "Games are going to cost you more time behind bars."

"I'm not playin' games man. It's the truth"

Crane glanced at Dalby, "Do you think he is telling the truth?"

"He thinks you are kidding about the 30 years." Dalby stabbed his finger at Pogreen, "Listen ass hole, things have got a lot tougher for you people, since 9/11. So how do you account for the weapons haul we found in the shed?"

“I dunno. We were told to pick up the crate.”

“By whom?” Crane asked.

“He had a weird name – Zaphod Ludlow, I believe.”

“What does he look like?” Dalby asked.

“I don’t know. I’ve never seen him. We got a phone call from a public box.”

Crane asked, “So where were you taking the crate with the weapons?”

“We were told to drop it off.”

Crane, sick of the bull shit, leaned into Pogreen's face. “WHERE?”

“Some boat”

“And what is this boat called?” Crane pressed.

“Something like, Sea Horse. I’m not sure.”

Dalby went over the report in the Director’s office. He looked up at Crane. “Do you think someone like Pogreen has the nous to deal with people selling missile launchers?”

“He’s probably a courier. I think it’s likely this Ludlow character employed them to do the legwork. We need to find out who Ludlow is dealing with. Then we’ll be getting somewhere.”

“Maybe we should drag in this Ludlow character.”

Dalby tended to jump the gun and Crane had to rein him in at times. “No, not yet. Find this Sea Horse, if that is the name of his boat. Put it under surveillance.”

Dalby turned to walk away. Then he turned around to face Crane. “We haven’t interviewed Darick yet.”

“Someone else can do that. We won’t get any more from him and Pogreen has already given us this Ludlow.”

“I guess you’re right, Director.”

It had been a long night and Ryan Crane needed sleep. He yawned and stretched. Dalby came into his office bearing a cappuccino for his boss. He looked as fatigued as the Director.

Crane took the coffee. “Thanks. Now get yourself off home. Get some rest and come back in the morning alert and ready to concentrate on Ludlow.”

“Do we have anything on him?”

“Not yet. It seems he has no record so he probably very smart and hasn’t put a foot wrong. So we have to go softly, softly. Anyway, I think it's a fair assumption our smuggler here has an organisation behind him in Europe and we need Ludlow to tell us about it.”

“That’s why I think we should lean on him a bit.”

“No. First we need to know what we're dealing with here. Is it a loose confederation of individuals

or a Russia Mafia kind of group? If it is the latter, Ludlow won't squeal for fear of Russian Mafia style retribution. So leave him alone at present. Just collect intelligence."

"Okay, Director. We'll play it that way."

Crane took out a bottle of Wild Turkey from his desk drawer. "Thanks for the coffee but I need something a bit stronger. Do you want one?" he asked, pouring a good measure into a coffee mug.

"I could certainly do with one." Dalby took the proffered Bourbon. "So how do we find out about this Mafia group?"

"I wouldn't necessarily characterise it as a Mafia type group yet. I think its more likely to be an organised group of individuals in a position to smuggle weapons into Eastern Europe, where they sell them on."

Dalby nodded, "It would have to be a big organisation involved for them to be able to get these missiles out of the country of origin, through the country or countries they are being shipped, for their ultimate delivery to the United States. That's certainly more than two people would have been able to achieve." He took a sip of whiskey. "Maybe we ought to use Interpol intelligence on this."

"Not at this stage. I don't want any other agency to fuck things up for us."

## ***Chapter 10***

**Dalby**, frustrated by lack of progress in the 'Sea Horse' case, as he called it, wondered whether to pull the plug on the op. But it wasn't his call, so he went to Crane's office. But he was busy talking with a couple of guys in suits.

Crane noticed him, excused himself and went to the door. "I'm kind of busy at present, Dalby. Can it wait?"

"What sir?" Dalby asked, distracted by the text book Federal Agent types with his boss.

"Whatever it was you came to see me about."

Jerked back to the present, Dalby said, "Oh, sure. Yes."

Crane closed the door. "Sorry about that."

The two FBI agents were showing impatience. Agent Wood said, "I don't know how you can maintain you knew nothing about it. One of your Customs people tipped us off."

Crane, at a loss for what to say, responded, "If one of my people discovered a WMD being smuggled they would have come to me. That's normal protocol here. Unless of course this person is a mole."

Agent Goodfellow said, "I wouldn't go there if I were you, Director. This does not look good for you. You are supposed to spot these things. What if we have revealed a dirty bomb plot to attack the U S mainland. Where would that leave you?"

It left Crane wondering what the hell was going on but he didn't say that. "Which of my people contacted you."

"We can't tell you that."

"What the hell do you mean? If this person works for customs I want to know why they broke protocol."

Wood grinned. "You should know better than to ask things like that."

"Damn it! It's my right to know!"

Goodfellow jumped in, "That's just it Director. But you didn't know and that makes you incompetent."

Crane, confused, frustrated, puzzled and angry didn't know how to extricate himself from what appeared to be a classic catch 22. "If the FBI is not going to cooperate with Customs then I will carry out my own internal investigation. Now, if that is all gentlemen..."

"... It would be for the best if you left it to us, Director," Wood said, with underlying menace in his voice.

"It would be best. What the hell is that supposed to mean?"

Goodfellow answered, "Have you heard the expression, let sleeping dogs lie. This thing could blow over if we take it quietly."

Crane confused said, "I need to know what is going on in this department otherwise there is no discipline and we cannot carry out our work effectively."

"That's exactly why we are here, Director."

Goodfellow rose from his seat. "You've had your card marked. Let it drop and nothing more comes of it. The ball is in your court."

Dalby watched the suits leave. Then he entered Crane's office. "What was that all about?" he asked. The director scratched his head.

"They're fucking Feds."

"So what did they want?"

"They claim a wmd got into the country under our radar."

"That's horse shit boss. We would have known about it."

"Somebody did, and they alerted the FBI."

"Why the fuck didn't they come to us."

"I don't know but something fishy is going on?"

"Any idea who went to the Feds?"

"I keep going over it in my head. Why would one of ours contact the Feds instead of me? It doesn't make sense."

"Unless something is not Kosher. Where did they say the WMD came from and where is it?"

"All they said was a 'weapon of mass destruction' had been found. They did not specify exactly where or what it was."

"Then there's no proof."

Crane wished it was that simple. "Do you think they need proof to prove their point?"

Dalby rubbed his chin. "No, you're probably right." Then his eyes sparkled. "What if we do have a spy in our midst? That could explain why the Sea Horse case is going nowhere. Which brings me to the question. Could the two things be linked?"

"Possibly, but I can't see a connection. Other than the person who ratted to the Feds."

Dalby grinned. "Rats need rat catchers. Let me run with it. You needn't know what I'm doing."

Crane looked at Dalby. "I don't like the sound of that."

Dalby grinned. This was his chance to show his initiative

The two Customs agents located and kept the Sea Horse in view from their concealed vantage point. There was nothing much to report. The suspect Zaphod Ludlow had left the boat in the early evening and had not returned by – one of the agents checked his watch – 11.30 pm. He sighed.

There was another 2 hours to go before their relief would take over.

## ***Chapter 11***

**Isaac Rance** sent out invitations to all sectors of the nano-industry to meet in Quanano Industries boardroom, to discuss the subject of ethics in nano-technology. Six recipient companies responded favourably. Five representatives from five companies turned up. Isaac was disappointed about getting only a ten percent response but he realised it was early days. The first order of the day was a discussion on 'What is ethics?' Isaac asked each person to introduce themselves as their company name.

Charles South from Mediquanta suggested “Ethics, for me has to do with what my feelings tell me is right or wrong.”

Mary Branson from Nanotec said “Ethics has to do with my religious beliefs.”

Melville Harper from Bioquan added, “Being ethical is doing what the law requires.”

Thomas Shields from Technano suggested “Ethics consists of the standards of behaviour our society accepts.”

Sean Santos from Novatech stated, “I don't know what the word really means.”

Isaac Rance from Quanano said, “If each of us has a different concept of ethics how can we expect to come to a consensus about ethical science practices. First off we need to come to a description we can all agree upon. Now, I guess I've had longer to think about this but ethics to me means simply, 'For the good of all'.

Charles, a nano scientist, working with a team of scientists on nano delivery systems nodded, “I don't think we can argue with that. It seems a good basis to work from.”

The others all agreed.

After some discussion Quanano listed the points as:

Ethics is:

For the good of all.

For the betterment of humanity.

A win, win situation.

Optimum health and happiness.

Wisdom through Beauty, a concept taken from the pages of ancient Greek philosophy.

Isaac wrote this list on his white board. He then turned to those present. “Okay, I think this is a good start. We can refine it as we go. But at least we have something to measure with when looking at applications of this new technology. Now we are ready to look at our idea of ethics and how implementation of such ethics can lessen the risk factor in the way our technology is administered.”

Sean, who's company Novatech specialised in graphite nano sheets, interrupted, “I'm not sure

about this. I mean can it be ethical if it is imposed upon others?”

Isaac responded, “Thank you Novatech. That's a valid point we need to look at.”

Melville, in his sixties, the most senior member of the small gathering, split his time between his quantum biology research at Bioquan and lecturing senior mathematics students. He suggested, “In my view this is what education is about. Education is basically about survival. I would suggest unless society is driven by ethics, ultimately everybody loses.”

Isaac added, “And that point has never, ever been so important to humanity as it is right now.”

General Marcus Munter, nicknamed the 'Duke of the desert' by his closest contemporaries, owing to his role in Iraq and his facial likeness to John Wayne, considered it his personal mission to protect the United States of America from harm. He made it his business to keep up-to-date with the latest military weapons systems, in keeping with his role as advisor to the Chiefs of Staff. His most recent concern being that China led America in the nano weaponry stakes. So he gathered a consortium of, mostly quantum arms manufacturers and researchers, to find ways to incorporate nano-technology into the next generation of lethal projectiles. This Applied nano-technology Consortium, was attended by Dr Samuel Berry, who addressed the meeting in his advisory capacity. The gathering was held at the Army's Joint Munitions and Lethality Centre at Picatinny Arsenal, New Jersey.

General Munter, the keynote speaker explained, “We are gathered here today with a view to bring the Army up to scratch concerning the development of advanced munitions based on nano and micro components.” Scanning his audience, he continued, “I have it on good authority China is ahead of us in the nano-technology stakes and India is not far behind. So why are other nations ahead of us? The answer is simply that their weapons manufacturers are not hampered with the kind of regulations and red tape that prohibits American manufacturers from applying their weapons technology with the same degree of autonomy. It is, therefore, very important that the industrial military complex in America be allowed to self regulate where weapons technology is concerned.”

Once General Munter had finished his talk and the applause had died down, Dr Samuel Berry went to the podium. His ponytail seemed a little out of place among the mostly conservative types. He tapped the mike, put on his reading glasses, checked his notes, and began. “What any military campaign needs is effective weapons that are safe to use and nano-weapons are very effective indeed. For those amongst us who have no idea of the size of molecules, a nano model that comprises a number of assembled molecules is about one thousandth the width of a human hair. So you can see we are working with very small things. As an example, the smallest insect is about 200 microns; this creates a plausible size estimate for a nano-technology built anti-personnel weapon, capable of seeking to inject and inject toxin into unprotected humans. The human lethal dose of botulism toxin is about 100 nanograms, or about 1/100 the volume of the weapon. What this means, in terms of size and effectiveness, is that as many as 50 billion toxin-carrying devices-theoretically enough to kill every human on earth-could be packed into a single suitcase.”

The General laughed “Even I think that's overkill.”

Sam Berry grinned and continued his pitch. “Guns of all sizes will be far more powerful, and their bullets can even be self-guided. Aerospace hardware would be far lighter and higher performance;

built with minimal or no metal, it would be much harder to spot on radar.”

The General asked, “In simple terms how does all this work?”

Ed Pitt from Nanowar Systems explained, “General, embedded computers will allow remote activation of any weapon, and more compact power handling would allow greatly improved robotics. Yet, even these innovations barely scratch the surface of what's possible.”

“Thank for that explanation. But how does this nano-technology figure with nuclear weapons?”

Pam Collins from Killman Inc answered, “That's a very important question, General. But the bigger question is whether nano-tech weapons would be stabilising or destabilising. Nuclear weapons, for example, perhaps can be credited with preventing major wars since their invention. However, nano-tech weapons have few similarities to nuclear weapons and nobody has any idea as to whether or not nano-weapons can be used as the same kind of deterrent. Having hugely visible phallic missiles on view is very different to the micro, concealed nature of nano-weapons of mass destruction.”

“Ms Collins are you suggesting that nano-weapons will be less stable than nuclear weapons?”

“Yes General. Nuclear stability stems from at least four factors. The most obvious is the massive destructiveness of all-out nuclear war. All-out nano-tech war is probably equivalent in the short term, but nuclear weapons also have a high long-term cost of use (fallout, contamination) that would be much lower with nano-tech weapons.”

Ed Pitt added, “Using nano-tech weapons means wars can be much cleaner, with no unnecessary death or damage. These weapons can make the Gulf War smart weapons look like the dumb bombs.”

Pam Collins said, “The second factor, as Ed pointed out, is where nuclear weapons cause indiscriminate destruction, nano-tech weapons could be targeted. My third point is nuclear weapons require massive research effort and industrial development, which can be tracked far more easily than nano-tech weapons development; such weapons can be developed much more rapidly due to faster, cheaper prototyping.”

Sam Berry said, “Nano-tech weapons will rewrite the strategies of war. It's not enough for nations to have access to such weaponry, they have to be able to change their whole approach to conflict. This means we also have to rewrite detection, deterrent and defence mechanisms to increase nano-weapon stability factors.”

Pam, trying to get her fourth factor over, said, “Finally, nuclear weapons cannot easily be delivered in advance of being used; the opposite is true of nano-tech. Greater uncertainty of the capabilities of the adversary, less response time to an attack, and better targeted destruction of the enemy's resources during an attack, all make nano-tech arms races less stable. Also, unless nano-tech is tightly controlled, the number of nano-tech nations in the world could be much higher than the number of nuclear nations, increasing the chance of a regional conflict blowing up.”

After the meeting, General Munter and Sam Berry met privately in the scientist's office. “So, Sam, how do you think it went today?”

“Good enough to get Ephemess increased funding,” he quipped, “I hope.”

“I’ll have to show the committee something concrete. I like the idea of research into nano-weapon detection. Our ‘Proliferation Security Initiative’ seems to be working well in helping to stop the flow of weapons of mass destruction, but it’s going to be less effective with nano-weapons. If your Ephemess came up with an effective detection system, you would be given a blank cheque.”

“That sounds all very good, Marcus, but until the kind of nano-weapons we are talking about become common place we won’t know exactly what it is we need to detect, let alone having the technology to find such weapons.”

The General tapped the side of his nose. “That’s why I wanted to see you alone.”

“What do you mean?”

“I think you and I know each other pretty well.” Seeing the blank look on Sam’s face, he said, “If I tell the committee that Ephemess is very close to developing the technology to effectively detect the presence of nano-weapons, funding certainly won’t be a problem.”

“But we are nowhere near...”

“...Sam, that doesn’t matter. The beauty of all this nano-tech stuff is it’s like the Emperor’s new clothes. If the experts tell them something they have to believe it because they haven’t got a fucking clue.” He grinned, “You’re not adverse to becoming stinking rich, are you.”

“What about demonstrations? We’ll have to show them how it works.”

“I’ll leave that to your expertise. But I’ll tell you something. This will not only make you rich. You’ll go down in history, like the guy who invented radar.”

“Yes, but that was real.”

“Who’s going to be able to prove this isn’t?”

Sam looked at the General sideways. “What’s in it for you?”

Munter did his nose tapping again. “Don’t look a gift horse in the mouth.”

“That’s all very well as long as it doesn’t turn out to be a ‘Trojan’ gift horse.”

## *Chapter 12*

**Stan Grant** followed his damp footprints in the sand, but in the opposite direction. He loved the smell of the ocean early in the morning. The sun began to rise over the far horizon. He checked his watch and headed back to the house. The first meeting of the ethical science group was due to start within minutes. From his many years chairing board meetings Stan knew the importance of punctuality. He reasoned if he couldn't get the time right, then nothing that followed would be right.

Stan welcomed his house guests as they entered his sun deck, around seven am, the appointed time for their meeting. The sun, which had almost risen, spread ribbons of liquid gold across the Atlantic ocean, affording those gathered, an inspiring panorama.

Once the group settled, Stan Began, "Let me welcome you all to the inaugural meeting of NEW (New Ethical World).

On cue, Stan's butler served chilled champagne.

Stan raised his glass. "Let's make a toast to our brave new venture."

"Our brave new venture," the group chorused.

"And let's raise a toast to Maggie who has helped get it off to a flying start. Thank you Maggie," Stan said.

They all raised their glasses to her.

Stan perused his notes. He looked up. "We have a number of important things to discuss today but let us catch up on what you guys have been doing." Isaac, how is the ethics group coming along?"

"We've had one full meeting and follow up conference calls. We have a consensus on our definition of 'ethics' and we have a mission statement of sorts. It still needs some work though." He handed out the details to each member. Then he read, "Ethics is reasoned to be about the good of all; the betterment of humanity; a win, win situation; and Optimum health and happiness."

Stan said, "I like 'For the good of all' Its simple straight to the point and cannot be misconstrued." He turned to Maggie. "I want this to be our slogan, Get onto your advertising people."

She made a note on her phone.

Stan then said, "Now Maggie will show you all what our public relations people at Byrrd, Brayne & Butler have created for our ad campaign."

Maggie unveiled the first of two signs that sat on easels, and waited for the group's response.

There was a moment's silence as they took in the image of Robin Williams in his garish Mork costume.

Marty Diamond commented, "Nano, nano. Jeez that brings back memories."

Isaac smiled, "I think it works well. It's already a well known icon. But I was wondering, how is

Robin with it?”

Maggie explained, “Byrrd, Brayne & Butler have done a deal with his agent, so everything is legal and above board.”

Stan added, “Yes but we'll change 'for an ethical world' to 'for the good of all'. Okay?”

Isaac contested, “Don't you think its better with the word 'ethics' in it?”

“I did. But this message is perfect. We have to promote nano so it becomes synonymous with ethics. Nano says ethics. This is how it must be. Who agrees with that?”

They all raised their hands.

Maggie said, “I feel happier with it. Ethics can mean many things to many people. It's too abstract. As Stan says, this is clear and to the point.”

Marty pointed out, “Ethics is heavy to the average Joe but he can relate to 'good', man.”

Stan smiled. “Then, 'For the good of all' it is.”

“Do we want it on the other poster as well?” Marty asked.

“We should make it ‘Nano, for the good of all’ on everything,” Stan suggested.

Maggie then revealed a poster on the second easel. It showed graphic images of abundant crops in an African scene and the same scene devastated by war. Underneath it read, ‘Abundance or Armageddon – your choice’.

Isaac commented, “It says 'your choice' but it doesn't say how folks can make that choice. May I suggest we get a website for NEW up and running and run a poll on it. Put the web address on the poster so that people can actually vote.”

Maggie’s emerald eyes lit up. “Isaac, that is one hell of an idea. What do you reckon Stan?”

“It’s god damn brilliant! Get your ad people onto it right away.”

Following the morning recess, which included a gentle stroll along the beach, the NEW group reassembled for the second part of the meeting. After everyone was seated Stan said, “The Hippocratic Oath is an oath historically taken by physicians and other health care professionals swearing to practice medicine ethically. It is widely believed to have been written by Hippocrates, who is often regarded as the father of Western medicine. I think it is time it was upgraded and has to be taken by all scientists as well as medical practitioners.” He looked at his friends. “What do you think?”

Isaac spoke up. “Here, here. That is a great idea. Maybe we could call it the Platonic Oath, because it was the Platonic tradition of ancient Greek philosophy that invented the Science for Ethical Ends.”

Everyone agreed.

## **Chapter 13**

**Stan Grant** decided to follow up on the Oath idea personally. Besides it gave him chance to catch up with Helen Burns, a good friend. She lived in Victoria, in a small country town called Bundoora. It had been a long time since Stan had visited Australia and he looked forward to the prospect of catching up with her again. He wanted to spend time with her both socially and professionally. Socially because he enjoyed her company and professionally, owing to her position as Head of Humanities at Latrobe University.

She met him at Tullamarine Airport. Overjoyed to see her old friend as he came through arrivals, she smiled “G’day mate,” giving him a huge hug, which was slightly impeded by the bags he held. Grabbing his arm, she said, “It’s wonderful to see you again, Stan.”

“It’s great to see you too,” he replied, kissing her on the cheek.

Loading his cases into the boot of her Commodore wagon, he smiled, “Thanks for taking the trouble to pick me up.”

“No trouble at all,” she smiled back, settling into the driver’s seat.

Once they were settled back at her place Helen plied him with fresh coffee and chocolate cake. “You haven’t yet told me what’s brought you to this neck of the woods.”

“You remembered my favourites,” he said, munching into a wedge of cake.

“Yes, it’s my way of welcoming you to little ol’ Bundoora.”

Stan grinned “Bundoora seems like a nice peaceful place to live. From what I have seen it has all the good things Melbourne has to offer, without the noise and rush.”

“You sound like an estate agent.”

Stan laughed. “One day I want you to see my place.”

“Chance would be a fine thing. But anyway Stan Grant, why have you come all the way to Oz? Surely not just to see me.”

“I’ve been meaning to catch up with you but since I retired I seem to be busier than when I was running GCE.”

“Busy doing what?”

“That’s one of the reasons I’m here.”

“Stan, you’re talking in riddles.”

“Yeah. I guess I am. So let me explain...”

As they drank their coffee Stan regaled Helen with his tale. Afterwards, he said, “We have long road to travel but we have made a good start.”

“It all sounds very exciting. What a fabulous idea. If there is anything I can do to help” She paused, then looked him in the eye. “That's why you're here, isn't it?”

Stan smiled shyly, “Yes, I do need your help with something.”

“Oh!”

“Can you set your students a project to come up with an oath for micro and nano scientists to sign?”

Helen sat quietly thinking. She became animated. “Hey, we could call it the 'Platonic Oath'.”

“It's funny you should say that. We were thinking of calling it that to associate it with the ethics of Platonic science.”

“Great idea. This could really put Humanities out there. It's a brilliant idea, Stan.”

“Our slogan is 'nano, for the good of all'. That's going on everything. So your students brief is to come up with an oath based on the idea nano-technology must be for the good of all and needs to be accessible to all.”

“It sounds great Stan. So, how long are you staying?”

Stan grinned, “I don't know, Helen. I guess as long as you can put up with me.”

“I could probably cope for a couple of days,” she joked. “Let's work on the concept this weekend and I'll set up the project for my senior class, next week.”

“Sounds like a plan.”

That night the pair dined in nearby McLeod, at the Piyada Thai restaurant. Between mouthfuls of Red Curry Duck, Stan said, This was a good idea. I didn't really fancy travelling into the city tonight.”

“I'm glad you like it. Apart from takeaways and Maccas there's not much to choose from around here.”

They ate in silence for a while. Stan detected concern on Helen's face. “Nickel for your thoughts.”

“Oh! I'm a bit concerned,”

“What about?”

“You know you are taking on some heavy hitters, don't you.”

Stan wiped his mouth with a napkin. “I know the project is in its honey moon stage at present. We are among friends and the advertising hasn't hit the airwaves yet. Next we have to deal with the media and I'm not looking forward to that.”

“What, with all you public speaking experience?”

“Oh, I am strictly a background man on this one. No, I meant we will need the right people out there, getting the NEW message across.”

“You need a front man, someone young, fit and charismatic. Someone who can take the kicks and punches and bounce straight back.”

“I think you are right, Helen. Maggie has done a lot of that kind of stuff but she already has a lot to cope with. I'll get her onto it right away. Stan took out his sat phone and speed dialled Maggie's number. She wasn't there. He left a message. “Hi Maggie, Stan here. We need a tough front person to face the media when NEW hits the airwaves. Ring me as soon as you get this.” Stan. He winked at Helen. “See, it's done.” He went back to his duck.

“You certainly believe in seizing the moment.”

“Saves me having to remember it.”

Back at Helen's place, Stan yawned. “I guess it's time to hit the sack.”

“Yes it probably is,”

Then Stan realised they hadn't made any sleeping arrangements. “Where shall I sleep?”

Helen hadn't given it any thought either. Having been used to living alone for many years, she never gave it any consideration. She hoped at some stage he might share her bed but as he had not hinted at it, she let it go. “There's the sofa, or I can make up the bed in the spare room.”

“Oh, I wouldn't want to put you to all that trouble. I could always shack up with you,” he laughed. There he had said it. If she took it as a joke, so be it.

“Oh, aren't you gallant, kind sir” she laughed, with a mock curtsy. Then she said, “Come here,” opening her arms to him.

They fell into a tight embrace and, for the first time they kissed – really kissed. For the first time in months NEW wasn't the most important thing on Stan's mind.

## **Chapter 14**

**Stan** looked at Helen as the pair sat eating breakfast on Her veranda. As they tucked into Vegemite with melted cheese on toast each was lost in their thoughts about the night they had enjoyed together. He reached over and took her hand. "I could get used to this."

She pulled back a little. She hadn't been involved in a meaningful relationship for some years, and the post coital period proved a little awkward for both of them. They had been friends, albeit at long distance for the most part, but now their relationship had taken on new dimensions.

Although the mourning period was over for Stan – well most of the time – He felt awkward about becoming involved with another woman. He said, "Sorry, I didn't mean..."

"...Stan, you have nothing to be sorry for. It's just that..."

Stan grinned, "...Yes, I know."

She took his hand and whispered, "Thank you."

He simply smiled.

Helen said, "We're still the same people Stan. Nothing has changed between us, except we have taken our relationship to a physical level. Let's not read too much into it."

Stan fumbled with his butter knife. "I guess I'm a bit out practice."

Helen smiled, "I don't have any complaints."

"You know what I mean. Not just the sex. Relating to another woman on an intimate level."

She covered his hand with hers. "Stan, lighten up and enjoy it. You'll soon be winging back stateside. So let's enjoy the time we have together."

He sighed, "You're right Helen. So what fun things are we going to do today?"

"I was thinking maybe a picnic lunch."

"Sound's great. Any of that cake left?"

They took a packed lunch and drove to a shaded creek, where they relaxed on a blanket, Helen had extricated from the back of her Commodore. After lunch she said, "Stan I'd like you to meet a friend of mine. His name is Professor Robert Bishop and he lives in his castle in Northern New South Wales."

Stan chuckled, "A professor living in a castle. This I've got to see."

she smiled, "Good because we have an invitation there next weekend."

Stan sat up. "Next weekend! I wasn't figuring on staying that long, As president of the NEW group I..."

"... I'm sure they'll survive without you for a few days. Besides I would love to spend some more

time with you.”

He brushed away a nuisance march fly. “Why would you want to spend time with this broken down old warhorse?”

She whacked him playfully on the shoulder. “You're only fishing for compliments.” Then, after a short pause. “Stan I promise you the delay will be worthwhile.”

“So tell me something about this professor.”

“Why don't you read this, She handed him a book called 'New Renaissance' by Robert Bishop. Then she added, Bishop didn't buy his castle, Stan, together with two others, they built it themselves. It is actually an Australian Government Approved Research Institute.

Stan took the book, “Sounds like it could be interesting.”

“He actually has a wicked sense of humour but he is deadly earnest about making sure their new life energy chemistry is handled ethically.”

“I'm beginning to like him already.”

Maggie Mcgee couldn't figure it out. Here she was about to retire, put her feet and enjoy a few luxuries in life – God knows she deserved it – when she finds herself the busiest she had even been. How had she allowed Stan Grant to coerce her back to the coal face? She didn't even have any grandchildren to worry about. Once she left this mortal coil there would be no progeny to remember her. That didn't worry her though. But she had wanted her remaining years to be happy and carefree. She didn't think that was asking too much. But it wasn't to be. Now Stan wanted her to find the 'Face' of NEW. A suitable candidate to take on the media and spread the message of their mission. Yes their mission! What had been Stan's mission Maggie had somehow become hers as well.

Bolstering herself with a Star Bucks latte, Maggie set forth to find books on nano-technology. Barnes and Noble's superstore in down town Washington seemed the best bet. She was right on the button but not for the reason she anticipated. Cardboard cut outs of a personable looking man with blue eyes and straight coffee coloured hair, holding a book 'Understanding the Super Rich' by Todd Berg, stood outside the bookshop. He sat inside, signing books. Maggie joined the queue. She had a gut feeling that Todd would fit the bill and usually, when she experienced them, they were right.

When Maggie finally made it to the front of the queue, she handed her book to him for his autograph. As he opened the book to sign it, he saw her business card. On the back she had written. *NEW wants you. Phone me.* The look in his eye suggested thought her strange. She said quietly, “We are serious.” Then she picked up her book and left.

## **Chapter 15**

**Stan** wanted to treat Helen like a queen, so it was first class all the way. The Cessna Citation was waiting ready and fuelled at Tullamarine Airport, as Helen and he alighted from their hired limousine. Soon they were airborne and on their way to the Gold Coast Airport, where a luxury hire car would be waiting.

“I could get used to this,” Helen laughed, supping her champagne.”

“I think we are entitled to a few little luxuries in our old age,” He laughed.

“Old age! You speak for yourself, she laughed, giving him a friendly nudge.”

He raised his glass, “Here's to the good life. May our grandchildren also thrive.”

“To the future,” Helen said, raising a toast.

Helen sat behind the wheel, enjoying state-of-the-art climate control. Sat nav, blue tooth and all the other hi-tech comfort afforded by the up-market hire car. She had never driven such a luxury car before: the soft leather seats, the whisper quiet engine and its excellent performance, all contributed to their fast, safe journey. The latest model Statesman seemed small to Stan but it was efficient and very comfortable, as they whisked along the Tugun Bypass, around Tweed Heads and onward to the quaint village of Uki. As soon as they hit Tweed Valley Way, which led them to the heart of Tweed Shire and Murwillumbah, the iconic shape of Mt warning seemed to loom everywhere, as a backdrop.

“What mountain is that?” Stan asked.

“It's called Mt Warning,”

“Why? He asked.

“Captain Cook named it that. Further North are some dangerous reefs.”

“Oh,” was all he said, his nose buried in Robert Bishop's book.

“So, what do you think of it?” she asked, indicating the book.

“He looked at her. “I get the sense of desperate hope about it. He comes over as a sad, angry man who has always fought uphill battles.”

“You always were good at reading people, Stan”

They stopped for a hotel lunch in Murwillumbah, the main country town in the heart of the Tweed Valley. There they got directions to Uki, an old cedar logging village, reborn as a trendy tourist destination. It boasted great views of Mt warning, which seemed to hold a fascination for the local folk, and dawn and dusk sighting of the Platypus, a strange duck-billed mammal that lays eggs. With all the odd and unique animals in the land Helen often wondered if Australia was some kind of animal testing ground.

“You Aussies have some real weird place names like Murwillumbah and Uki.” He paused, then asked, “How did it get to be called Uki?”

Helen shrugged, “It could have been an Aboriginal name but the favourite local version is that the top quality cedar logs were sent to the UK, hence UK1, which became UKI.”

Upon their arrival at the Castle on the Hill, Science-Art Centre, Stan was somewhat disappointed to find no turrets, ramparts or even a moat. There was also the absence of a drawbridge. But it certainly was an impressive building dwarfed only by the impressiveness of Professor Bishop, himself. His beautiful wife Eileen, a wonderful host, fussed around to make sure they were comfortable.

Robert took the pair on a tour around the castle grounds. He explained the building design was based on Italian Renaissance architecture. He then launched into an explanation of How Leonardo da Vinci didn't understand the source of all knowledge because he said it came from the eye. But the eye doesn't even exist when the sperm enters the egg to, begin the living process.”

Stan found Robert very interesting, if a little overpowering.

Eventually, Robert asked, “Stan what do you do?”

“I'm a retired business man who now wants to leave the best world I can for my kids, and kids in General. Especially those poor little souls starving to death in third world countries that don't even merit time on the news.

The Professor, impressed, said, “I think you and I have a lot in common.”

“I know. I read your book on the way here”

“Which book was that?”

“New Renaissance”

“Come inside and I'll show you what we are working on now.”

Robert took his guests through to what he called the 'function hall' where they held lectures and workshops. Massive single paned windows afforded a magnificent view of Mt Warning and the small Temple of Diana, built by Robert Todd, a fellow artist and business partner. On a long Oak table was an open A3 vinyl folder, containing proof pages for a new Science-Art book. Robert explained the concept to Stan, hoping he would come on board and help get the book published.

Stan said, “It sounds great Robert. Put me down for a copy. Hell, make it 20 copies.”

“That's great Stan,” Robert said gratefully. But there was no mention of bank rolling the project.

Stan eventually got away from Robert, for whom he was developing great respect, and rang Maggie. “Look, I'm still down under but I should be back in two or three days. The thing is I have met an amazing guy here, who's even more on track than we are. I know it sounds incredible but this guy has been battling science and the Australian government for over 40 years. The thing is I want him to be our front guy.”

Maggie thought she had misheard. “You what? “I am negotiating with a Todd Berg.”

“Who's he?”

“The guy you told me to find. He's young, energetic, handsome and ethical. He's a best-selling author and a recognised celebrity. He would be a great asset to NEW.”

“Todd sounds great but this Professor is right on the ball.”

“Have you any idea what I had to go through to convince Todd to come on board?”

“I'm sorry Maggie but we have to put personal feelings aside and go for who is best.”

“Stan, who do you think the American public are going to prefer, a handsome, charming man who has done the hard yards in Africa or a crusty old professor?”

“Maggie, I want this man with us. I appreciate you have set Todd up for this but this guy has the big picture. So hold fire and we can discuss it when I get back.”

Over dinner that night conversation was often interrupted the domineering professor. Stan had never experienced such passion, obsession and drive in a man. That was good because he could punch the points he wanted to make, home. But Stan knew he would need softening around the edges. Helen was quiet during the meal. She was enjoying Stan's company but knew he would be leaving her soon.

During the meal, Stan blurted out, “How would you guys like to come out and have a holiday at my home in Palm Beach?”

Helen thought he meant her as well. But he had already asked her and she couldn't take the time off from her university workload.

Robert looked at his wife

Eileen looked at him. Then she turned to Stan. “That would be wonderful,”

Stan smiled, “To be truthful I do have an ulterior motive, a kind of proposition. But I want you guys to come on vacation so I won't tell you what it is until you come and stay. What do you say?”

“It's very tempting but right now our book project is very important and has to be given priority.”

“No problem Robert. Bring your computer with you. You can do your work like I do, out in the sun room, overlooking the magnificent ocean.”

“That could work,” Robert agreed.

Stan raised his glass of apple juice. “Here's to a happy holiday and fruitful friendship.”

They all raised their glasses.

Helen was feeling a little bit left out. She excused her self and went up to the guest room made up for her. It was very comfortable, overlooking the beautiful Tweed Valley.

## Chapter 16

**Maggie McGee** stood on her balcony four stories up over the busy road at 46 Rue de la Terrasserie, Geneva. She had never been to Switzerland before and would have loved to have visited the snowy Alps and magnificent lakes – especially Lake Geneva. But this whistle-stop tour only gave her enough time to catch up with Dr Selina Herbert, before she went winging off to Africa. Stan had set her up with a \$100 thousand budget to use at her own discretion. She needed certain information and, her research told her Selina Herbert would be the best person to provide it.

Selina had been reticent at first, saying her tight schedule made it impossible for her to see Maggie. But after a little gentle persuasion she agreed to a brief meeting to hear Maggie's story. They met at Selina's place, where she rushed around, packing belongings into a suitcase. "So, Ms McGee, what do you want?"

"I represent a group of people called NEW, who's aim is to help bring about an ethical nanoscience."

"Good luck with that," Selina said, more than a hint of cynicism showing in her voice.

Maggie, following the academic into her bedroom, said, "We need good solid data concerning human extinction scenarios to back up our argument."

Selina closed the lid of her case. "And you want me to provide you with this data?"

"What is your fee for doing this?"

"You are letting me name my fee. What if I say 1000 Euros?"

"What if I say 2000 Euros, if you can provide me with the information in two days?"

"Impossible. I fly to Africa in two days. I can do some research and provide you with a detailed report, once I return."

"How long will you be away?"

"I'm not sure. Look, give me your Email address and I will send you the report – for 2000 Euros."

Dalby only had a few days to get something solid on Zaphod Ludlow, or drop the case. Desperate measures were needed. Dalby had gone undercover before but he was out of practice. Then he hit upon a plan but never divulged it to anyone, including his superior, Director Crane. Crane would never go for it but Dalby's instinct urged him to act.

He had his cover story ready as he watched the Sea Horse, from a concealed setting. A quick reconnoitre showed him Ludlow wasn't on board. So he waited patiently until he returned. Around two hours later the suspect arrived back at the boat, boarded it and let himself into his cabin. Once Ludlow went inside, Dalby followed him and knocked at the cabin door.

Ludlow, not expecting any visitors became alert. "Who's there?"

"Don't piss me about Mr Ludlow. You're in enough shit as it is."

Ludlow opened the door. "Who the fuck do you think you are threatening me?"

"I represent the principle. You know, the one who didn't get his merchandise."

"That wasn't my fault. The idiots walked into a trap and got themselves arrested."

Dalby prayed the wire worked. "How come you're still free then?"

"The stupid fuckers had nothing on me."

"Good. Then you can fulfil your obligations, Mr Ludlow."

"Where the fuck am I supposed to find weapons like that at short notice?"

"Not the principle's problem. You've got two days or you will be considered useless baggage. And you know what happens to useless baggage."

A pregnant pause took place while Ludlow thought things over. "Maybe I can arrange something."

"Good. I will see you in two days."

As Dalby passed a stationary car he stopped and rapped on the driver's door window, which slid down. "Okay boys, give it ten minutes and haul his ass in." He then got in his car and drove back to headquarters proud with what he had achieved.

Crane burst in on Dalby, who sat checking his evidence. "Ludlow is demanding his lawyer. We need that evidence now."

Dalby's pinched expression made him look as though he had sucked on a lemon.

Crane asked, "What's the problem?"

Dalby hurled the radio receiver onto the desk. "Fuckin' thing only picked up static!"

Crane couldn't believe it. "Are you telling me you brought Ludlow in without any evidence?" he asked, his face rapidly reddening.

"It's not my fault, sir. It's the cheap fucking equipment they land us with."

Crane turned on Dalby. "Even if we do get Ludlow in court we are going to have to produce the taped evidence."

Dalby stared at crane. Hell, "I didn't think of that."

"So we have to let him go."

"If we do that we have blown any chance of finding out who he is working for."

The commander's eyebrows narrowed. "Why the fuck didn't you check the equipment before hauling him in?"

"I thought I could rely on the equipment."

Crane shook his head, disbelievingly.

Dalby brightened. "Maybe we can fake it."

"What the hell are you on about?"

Dalby, animated, explained, "We have his voice on tape from the interview. I remember the conversation on the boat. So why can't our tech boys put it together?"

Crane stared at him in disbelief. "Do you want a fucking shovel to dig yourself in even deeper?"

"At least lets see what the techs can do."

"If I agree to this it's not only your career on the line here, Dalby."

An officer interrupted Crane.

"What is it?" I'm busy." He retorted, roughly.

"Sorry sir, but Mr Ludlow wants to see you."

Crane turned away, his fists clenched. "Jesus Christ Dalby, you have fucked up big time. You can be the one to let the bastard go."

"Maybe we don't have to release him."

"What's that supposed to mean?"

"We know the wire didn't work but Ludlow doesn't know, does he?"

"He didn't even know you were wearing the fucking thing. So how does that help?"

"I can remember the conversation." He fixed Crane in his gaze. "Sir, we can do this. Besides, if I go in there he'll know I know."

"A fucking pig. I might have known," Ludlow snarled, as Dalby entered.

"If you like, Mr Ludlow. But as you know, I have the goods on you."

"It's only your word against..." Then seeing the smirk on the pig's face, he realised, "You were fucking wired."

"Exactly, which means you are in big trouble. We have enough evidence to put you away for a long time."

Ludlow stared at Dalby. "I want to talk to the organ grinder, not his fucking monkey."

Dalby stood up and left, a big grin on his face, reflecting contentment that he had repaired the damage.

Crane waited outside the interview room. As Dalby came out, he asked, "How did it fly?"

"He bought it. We're in the clear," Dalby said, a huge smile showing his relief.

"What do you mean by we, Kemo Sabe?" Crane responded. "So has he confessed?"

"He wants to talk to you."

Zaphod Ludlow looked up as Crane entered the room.

The Director seated himself opposite the gun runner. "You asked to see me."

“I want a deal.”

Crane couldn't believe his luck. “It all depends on what you've got to offer.”

Ludlow took a deep breath. “An army officer.”

Crane leaned forward, “There's a lot of them. Anyone in particular?”

“This didn't come from me, right?”

“Nothing has so far and I'm losing my patience.”

“A General.”

“Are you going to tell me or not?” Crane snarled.

“General Marcus Munter.”

Crane scratched his head in puzzlement. “Why did he deal with you? Doesn't the army have enough guns?”

“Now, what about my deal?”

“You haven't answered my question.”

“The fucking army doesn't know about these weapons – okay!”

“What sort of weapons are we talking about?”

Ludlow shook his head. “No more until I get my deal.”

Crane sighed, “Okay what's this deal you want to discuss?”

“I'll put my hands up to a lesser charge. One that doesn't involve jail time.”

Crane laughed, “You've been smuggling illegal weapons into the US and you want to do community service! Why don't we make it working in a munitions factory while we are at it?”

“Did you find any weapons on my boat?”

“No, but information on your laptop led us to a warehouse and, Mr Ludlow, what do you think we found there?”

Ludlow froze. Those idiots were suppose to clear it out. He stared at the customs officer. *Were Customs bluffing or had this gloating idiot stumbled upon arms and munitions that could be traced back to him?* Ludlow paled. “Okay, the General is after new weapons that don't exist yet.”

Crane scratched his balding head. “Just how are you able to smuggle something that doesn't exist, for Christ's sake?”

Ludlow cracked a thin smile. “That's going to look good when you give your evidence in court.

Crane knew Ludlow was right. Perhaps a court case was not a good idea. “Okay you do something for me and we will drop all charges due to lack of solid evidence.”

Ludlow smiled for the first time in the interview. “What do you want from me?”

“You set up a meet with this General Munter, so we can catch him with the weapons.”

“You have got to be fucking joking. Besides, I've only ever met the guy once and that was for a fleeting glimpse. He works through an intermediary.”

“Yes. You.”

“No. He's military – an adjutant or something.”

“Name?”

“Oliver Kent. Major Oliver Kent.”

Crane thought about how to proceed. “Okay, you need to set up a meet with the Kent guy.”

Ludlow shook his head. “It won't work. They contact me. I can only contact him in an emergency”

“Then tell him it is an emergency.”

Getting agitated, Ludlow said, “I told you. I don't have any contact numbers.”

Crane leaned into Ludlow's face. “Then, how do you contact him in an emergency?”

Dalby was mentally pacing when Crane came into the office.

“Dalby, you are one lucky son-of-a-bitch. Ludlow has coughed up a name. Two actually. But he claims the big honcho is untouchable.”

“Who is it?”

“The top guy, at least at this end, is one General Munter. He's protected behind one Major Kent, his batman, adjutant whatever.”

“Is he bullshitting?”

“I don't think so.”

Dalby smiled, “Did you know our Mr Ludlow is an ex-navy seal major?”

“No I didn't know that. But it makes sense.”

“Why?”

“His army contacts of course. If a serving General is involved this has got be much more than mere gun-smuggling.”

“So what's next?”

“We need Ludlow to contact this Oliver Kent.”

“Will he do it?”

“I think so. If we drop the charges against him.”

“I thought we didn't cave in to arms smugglers, sir?”

Crane glared at Dalby. I've just retrieved your balls for you so don't fuck with me. I'm not in the mood.”

## **Chapter 17**

**Matt Byrrd** was happy to go with 'Nano, for the good of all'. He showed Maggie what Byrrd, Brayne & Butler had come up with. Copyright had been cleared and a deal had been struck. The message was a positive one so it was okay. There was a young Robin Williams in his Mork gear, with a speech bubble saying, 'nano, nano'. Underneath was the simple message 'Nano – for the good of all'

Matt Byrrd then showed her the 'Your choice' poster and its link to the NEW Website, which was also looking very good. It explained the NEW concept and had an interactive poll set up on line. Maggie checked the stats and the results already showed a 82 to 8 percent in favour of Nano for peace and health. Not many people had visited the site yet but that was bound to change once the TV ads hit the air waves.

Byrrd showed Maggie the story boards for three ads. He explained the first ad follows the line of the poster. The second ad is pitched at education. What is nano-technology and how can it help us, sort of thing? There is a link to a web-page with the same heading. The third ad focuses on the dangers and risks associated with getting it wrong. People are prompted to phone or sms as another way to register their vote.

Maggie, very impressed, said, “I can't wait for all this to hit the media.”

“Are you prepared for that, the interviews and articles? Only you said something about some Aussie professor being your front man.”

“I am meeting with Stan and this guy tomorrow. After assessing the situation, I'll let you know.” She then smiled, “So are we ready to rock and roll?”

“We'll be carrying out initial tests this week, starting tonight.”

Stan Grant had no idea how difficult it was for Professor Robert Bishop not to be the front runner in the project. For over four decades he had fought tooth and nail to have his Creative Physics recognised by science and the arts. First, it was his one man crusade, then, over the years others rallied to his side. But Robert was always the one who had the knowledge, the passion, the survival instinct and the purpose. So his Science-Art colleagues always played along to his tune.

Now another person, on the same path, with the same missionary zeal and with much more influence, wanted Robert to be part of his team. Stan had made it perfectly clear Robert would have his own project, his own autonomy and it would be funded by NEW. He would be required to attend NEW meetings from time to time because, despite his independence, he would be part of a team. It was a huge thing for the bombastic, sometimes arrogant, professor to cope with and he needed time to consider the ramifications.

Stan Grant accepted the fact Robert was having a hard time coming to grips with his new reality. Being skilled in people potential, Stan nurtured him while treating him as an advisor. Robert agreed to go to America with Stan. Eileen wasn't able to go with him. The Castle also served as a bed-and-breakfast venue. She had guests booked in, so she would follow later.

As they flew to Palm Beach in luxurious executive class, Stan asked, "What did you think of the ad?"

"It has a good, clear, simple message. But do you really think people will bother to go to your Website and vote? I mean it's not a scientific poll, is it?"

"No, but it's a symbolic one and, in my opinion, they can be more effective."

"In my experience, Stan, the average person needs a cattle prod stuck up their arse, to get them to respond to anything outside their comfort zone."

"Robert, we are not waving a big stick or threatening anyone. We are educating people about this mysterious nano-science and how it needs to be implemented responsibly."

The professor turned on Stan. "I have to pull you up right there. Firstly, nano-science is not mysterious because nano photographs exist to prove how it works, and secondly the ethical responsibility cannot be implemented because present entrenched Western science forbids it."

"I'm a beginner when it comes to this quantum stuff, so can you explain it simply, Professor?"

"Probably not, but I can at least try. Einstein accepted ancient mythical beliefs were expressions of an intuitive reality. For example, in the beginning was the dark abyss, then came light, then came matter. In his definition of quantum mechanics he only allowed the laws of physical reality to prevail, dismissing what the ancient Greeks called the spiritual laws from the abyss, which, in nano-science, refers to the laws upholding universal holographic reality."

Stan said, "Are you suggesting that Einstein wasn't the genius he was purported to be?"

"Einstein simply extended the banishment of the ancient *Science for Ethical Ends*, leaving us to worship the universal law of chaos, which is called the second law of thermodynamics. Einstein was not wrong about the existence of continual chaos, but he cut himself off from considering how the energies of evolving creation entangled itself with the chaos of quantum mechanics. This entanglement is now accepted as a function of quantum biology and it is called quantum

entanglement. But those making big money from the now obsolete technologies will fight to the death in order to accelerate humanity to a chaotic extinction.”

“Tell me more about this second law. What is it?”

They were distracted by a flight Attendant, who handed them lunch menus. Robert continued, “The second law is also known as the *Universal Heat Death Law*, in which all the energy of the universe is considered to be radiating off into cold space, so eventually all life in the universe must be destroyed. That law was originally deduced as applying itself to the workings of a steam engine. While it does govern all mechanical inventions, it does not govern the evolution of life. Albert Einstein was incorrectly convinced it applied to the entire workings of the universe. The modern technological world-view is simply accelerating the process of destruction toward an inevitable human extinction.

“Are you suggesting it isn't the case?”

“That's the point, Stan. It is very much the case, instead of evolving we have chosen to devolve. Our total obsession with the harnessing of chaotic energy is simply rapidly accelerating us to Einstein's extinction. Without an evolving creative physics consciousness to balance the entropic energies of universal chaos we are simply accelerating our entropy.”

“One thing I have learnt in all my years in the credit business is you cannot rush the process, because we cannot afford to make any mistakes.”

“This is why your 'Platonic Oath' is brilliant. But it has to be implemented and adhered to very quickly. Helen is doing her bit but it has to be adopted by every university throughout the world. And, knowing, first hand, how recalcitrant they can be, good luck on that.”

## Chapter 18

**Maggie** had already arrived by the time Stan and Robert alighted from his car at Maison de Liberte. Most people were very impressed with Robert's Castle on the Hill and with good reason but now it was the Professor's turn to be moved. "This is some place!"

"Yeah, but I didn't build it." he grinned. Then, indicating a middle-aged woman with rich brown hair, "This is Maggie, the backbone of our operation." he effused.

Robert was instantly taken by her dark chocolate hair and sparkling emerald green eyes. For a woman of sixty she looked fit and healthy. "Stan is always singing your praises so it's nice to actually meet you."

Maggie, in turn was somewhat wary of the balding, white bearded professor, who's face reminded her of a mix between Sean Connery and Ayatollah Khomeini. She wondered how Todd was going to take it when he heard of Stan's suggestion. "And I have heard a lot about you, Professor."

Stan said, "Robert, come inside and I'll give you the grand tour."

After a walk on the beach, while Robert worked on his book, Stan took Maggie aside. "What do you think of Robert?"

"In what respect? As a guest or as the spokesperson for NEW?"

"As part of our team."

"From the short conversation we had he seems very confident. He has an intensity about him. I wonder how the American audience would react to that."

Stan smiled. "Relax Maggie. After talking to you I've had a rethink. I want to let him loose on Uni campuses."

Maggie became animated, "So we stay with Todd in the media?"

"Yes. But we all need to be on the same page. Robert has given me a copy of a DVD lecture he and some other Science-artists made at his castle. I think we should all watch it."

"Sounds okay to me."

With good relations restored, Stan turned away. Then, as an afterthought, he turned to face her, saying, "Oh, and we need another ad, one promoting the Platonic science code of ethics."

"I wasn't aware it had been completely worked out yet."

"It hasn't. Tell Matt to put that part on hold. Let him play around with the rest of the concept."

Todd arrived late but he made it before the DVD was played. Maggie filled him in quickly and they watched, enthralled as Robert Bishop took them through over four thousand years of science history to the present day 'New Measure of Humanity Project', initiated by Florence University. Afterwards professor Bishop fielded questions.

Stan stood and thanked Robert, commenting, 'I am much better informed now. We never got taught that stuff in schools. I never realised the historical ramifications and I can see an advertising theme using historical characters.' Brightening as elements of this on-the-spot idea, jumped into place. "Yes, we need to brainstorm this."

Maggie, nonplussed, asked, "What are you on about?"

"It will be wonderful. Imagine somebody dressed up like Plato, for example, talking about his concept of evil being unformed matter in the physical atom, which, when unleashed will destroy worlds. Then we cut to the bomb dropping on Hiroshima."

Todd said, "My God, that should shake a few people."

Stan turned to his strategist. "Get onto Matt. Tell him we are changing the theme."

"Stan, it's going to cost a fortune."

"That's my problem, Maggie. We are going to hit them hard and fast with this." He turned to Robert. "I want you to go to New York with Maggie. I want your input and scripting on this. He took a deep breath. "This is very exciting people. This is what we want."

Maggie wasn't so sure.

Sam Berry made his way to the speakers rostrum. The Consortium, had invited him as their keynote speaker at a meeting, held at the Army's Joint Munitions and Lethality Center at Picatinny Arsenal, New Jersey. Sam's talk, about bringing the US Military up to scratch with the development of advanced munitions, centred on nano and micro components. As the guest speaker at the 'Tactical Applications of Nano-technology Consortium' (TANC) conference, it gave him the opportunity to get his message across loud and clear. He began by fumbling in his pockets, as though searching for something. He said, "That's the problem with nano notes, you can never find them when you need them."

"This raised a laugh and broke the ice.

Sam began, "Gentlemen, imagine a future of nano-dust spies, sentinels, assassins, and defensive weapons, becoming the method of engagement against our enemies. Make no mistake this is becoming our military reality. Yet most of the world's military specialists are unprepared for this – to say nothing of the average world citizen." He paused for a mouthful of water, then continued, "Yet most of these weapons are far closer and easier to devise and build, than the molecular nano-assembler – the horn of plenty most people relate to with nanotechnology."

He went on to speak about nano-weapons combined with bio-weapons, chemical weapons, and genetic weapons, and how they could provide the budding world religious or ideological dictator with far more ultimate aggressive power than that afforded by the more traditional nuclear weapons. He explained the inevitability that every measure has a counter-measure. But that not everyone will have the resources to obtain counter-measures, when the means of deadly attack becomes nearly ubiquitous.

He wrapped up his talk, saying, "Guns of all sizes will be far more powerful, and their bullets can

even be self-guided. Aerospace hardware would be far lighter and higher performance; built with minimal or no metal, it would be much harder to spot on radar. So, as you can see, gentlemen, we are in for a whole new 'bomb game'. Now if you have any questions.”

General Munter was first. “In simple terms how does all this work?”

Sam answered, “embedded computers will allow remote activation of any weapon, and more compact power handling would allow greatly improved robotics. General, even these innovations barely scratch the surface of what's possible.”

“So how does this nano stuff figure with nuclear weapons?” Admiral Kremmin of the Joint Chiefs of Staff, asked.

“That's a very important question, Admiral. But the bigger question is whether nano-technology weapons would be stabilising or destabilising. Nuclear weapons can, for example, be credited with being a deterrent in a no-win situation. Missiles are very big and very visible. However, nano-technology weapons are not.”

Ed Chase of Nanowar Inc. asked, “What advantages do you think these nano-weapons have over nuclear weapons?”

“Nuclear weapons cause indiscriminate destruction; nano-technology weapons could be targeted. Nuclear weapons require massive research effort and industrial development, which can be tracked far more easily than nano-technology weapons development; nano-technology weapons can be developed much more rapidly due to faster, cheaper prototyping.”

Janette Moley from Nano Systems, asked, “What's the downside of nano-weapons?”

Sam smiled, “As you anticipated, there can be a downside. As you know, nuclear weapons cannot easily be delivered in advance of being used; the opposite is true of nano-technology. However, greater uncertainty of the capabilities of the adversary, less response time to an attack, and better targeted destruction of the enemy's resources during an attack all make nano-technology arms races less stable. To be perfectly frank about this, unless nano-technology is tightly controlled, the number of nano-tech nations in the world could be much higher than the number of nuclear nations, greatly increasing the chance of a regional conflict blowing up.”

Munter asked, “Can't we regulate the bad guys and leave us to regulate ourselves?”

Chuckles filled the briefing room.

Ed asked, “Why can't we do what we do now. Only allow responsible nations like ours to have them in the first place.”

Sam jumped in. “That's a subject for another discussion. Today is about showing what nano-weapons can achieve.”

General Marcus Munter, met with Admiral David E. Kremmin, at the Baja restaurant. It's Mexican theme, completed by the 'Four Amigos' who managed some fancy guitar work, adding greatly to the ambience. He said, I've never been here, so what do you suggest?”

The taciturn ex-naval man said, "I'm going with the vegetable fajitas. You should try them, Marcus, they're delicious."

"No, I'll stick to a nachos."

"Go on live dangerously and give it a go. I know vegetarian dishes are often very lacking, but not here."

Changing the subject, Marcus said, "What did you think of Sam Berry's talk?"

"Sam Berry. Didn't he serve in Iraq?"

"Yes he did, as a Captain in the Marines. He came back and took over the family business."

A personable young waiter arrived. The Admiral placed his order. Marcus chose his nachos. Then he said, "Admiral, I'm becoming firmly convinced military applications of molecular manufacturing have even greater potential than nuclear weapons when it comes to changing the balance of power."

"In our favour, I trust."

"I am beginning to wonder about that. It seems as soon as we figure something out about this nano stuff, two other problems raise their ugly heads. For example, there is the belief nano-technology can destabilise international relations: It will reduce economic influence and interdependence, encourage targeting of people as opposed to factories and weapons, and reduce the ability of a nation to monitor its potential enemies."

"Marcus, I may be old school but I prefer weapons I can see and hear. To be frank this silent invisible death and destruction freaks the hell out of me."

"Whether we like it or not, it is the future."

David sighed heavily, "Then I'm glad I'm not."

Marcus felt he was losing ground. "Dammit David! We need the Joint Chiefs on side here. Congress is going to take some persuading to go down the nano-weapons road."

The Admiral sat back as the waiter placed his vegetable fajitas in front of him.

Munter continued, "Look, I know this stuff has its problems. Many nations may well become globally destructive."

The Admiral contributed, between mouthfuls, "The way I see it is this nano stuff will eliminate the ability of powerful nations, such as ours, to 'police' the international arena. By making small groups self-sufficient, it could also encourage the break-up of existing nations. That would not be good."

Marcus started on his nachos. He wiped his mouth on napkin. "I think you are approaching this from the wrong perspective. China is already ahead of us in nano-weapons research and we cannot afford to be left behind, despite the unknown aspects involved."

David took a mouthful of beer. "Marcus, even if these things are true and I believe they are far-fetched or at least so remote they need not alarm us now, we must not think that way."

"Ordinarily I would go along with that but experts in the field, such as Sam, have told me nano-technology development could accelerate at such a pace we might be caught unaware and

unprepared.”

David laughed, “You not joining the bleeding heart mob are you?”

Marcus exploded, “God-dam it David! You people don't get it. We are way beyond all that 60's shit. This is now and right now anybody can use this science and we have to be ready to defend ourselves against such threats. We have to be prepared and that means looking at everything.”

The Admiral pushed his plate away. “The food gets better here every time I come here. The veggies weren't too greasy and the flavour was spot on.” He called the waiter over to order margaritas. He then addressed his dinner guest. “I hear what you are saying Marcus. Forward me your report and I will get in into Congress.”