

Chapter 1 : Opioid Epidemic

Doctors must be the humans in the room, regardless of where that room is located, or even if it's virtual.

Various internet resources contain many useful and free maps for East Texas. County level tax assessor or appraisal offices are a useful source for ownership information and maps, including any conservation easements. While some counties have information available online, many continue to maintain only physical copies available at county courthouses or offices. Data for Nacogdoches County are available online: Appropriate cruise designs consider: Assess feasibility of landowner objectives. Operations should not degrade site quality. Objectives should be realistic given stand conditions and site resources. Objectives should be achievable within the desired timeline. Using landowner objectives a timeline ranging from years to a whole rotation or longer should be decided upon. Development of a timeline facilitates understanding how operations may interact, and what the potential benefits and pitfalls of each operation are. Marking instructions communicate the information in the prescription to the operators on the site given the regeneration method or intermediate treatment proposed and the inventory. Specific marking instructions are included. Remember that marking is a time and money intensive process, and the minimal effort to achieve the desired objectives should be expended. Inventory and mark timber for bid prospectus. A more intensive cruise can provide detailed information for the bid prospectus. The bid prospectus allows timber buyers to make informed decisions on whether they will bid for the job. The prospectus is sent out to local timber buyers giving them permission to access the site to evaluate your inventory data and site conditions. Negotiate the timber contract. A contract is negotiated and recorded in the local courthouse. The forester meets the logger on site and demonstrates the provisions of the contract. Regular inspections of the site during logging insure continued compliance with contract stipulations. A stand description giving information on the current state of the site and stand, including all details relevant to future operations. A tabular timeline summarizing all prescribed data collection activities and all establishment, intermediate, and regeneration treatments. A prescription narrative detailing each operation. Stand Description This is a general checklist of items that may be included in a stand description. Not all items will be relevant for each stand. Only include relevant items.

Chapter 2 : Multidisciplinary Association for Psychedelic Studies

Google Future Tech: 10 Coolest Google R&D Projects From space elevators, robots, to curing cancer: Google works to make future generations brighter, healthier, and more informed.

Customers crowd into a department store in Hangzhou, Zhejiang province. China will continue to rise in the coming decades. Just a century ago, London was the centre of the world. Britain bestrode the world like a colossus and only those with strong nerves or weak judgment dared challenge the Pax Britannica. That, of course, is all history, but the Pax Americana that has taken shape since is just as vulnerable to historical change. In the s, the rising power and wealth of Germany and America splintered the Pax Britannica; in the s, east Asia will do the same to the Pax Americana. The 21st century will see technological change on an astonishing scale. It may even transform what it means to be human. But in the short term – the next 20 years – the world will still be dominated by the doings of nation-states and the central issue will be the rise of the east. By , the world will be more complicated, divided between a broad American sphere of influence in Europe, the Middle East and south Asia, and a Chinese sphere in east Asia and Africa. Even within its own sphere, the US will face new challenges from former peripheries. The critics who wrote off the US during the depression of the s and the stagflation of the s lived to see it bounce back to defeat the Nazis in the s and the Soviets in the s. The same will happen as American power erodes in the ss. In , for instance, Russia would never have dared attack a neighbour such as Georgia but in it took just such a chance. The danger of such an adventure sparking a great power war in the s is probably low; in the s, it will be much greater. The most serious threats will arise in the vortex of instability that stretches from Africa to central Asia. Here, the risk of Sino-American conflict will be greatest and here the balance of power will be decided. James Brittain It will be a second financial crisis in the s – probably sooner than later – that will prove to be the remaking of Britain. Confronted by a second trillion-pound bank bailout in less than 10 years, it will be impossible for the City and wider banking system to resist reform. The popular revolt against bankers, their current business model in which neglect of the real economy is embedded and the scale of their bonuses – all to be underwritten by bailouts from taxpayers – will become irresistible. The consequent rebalancing of the British economy, already underway, will intensify. Britain, in thrall to finance since , will break free – spearheading a second Industrial Revolution. In , there is thus a good prospect that Britain will be the most populous our birth rate will be one the highest in Europe , dynamic and richest European country, the key state in a reconfigured EU. Our leading universities will become powerhouses of innovation, world centres in exploiting the approaching avalanche of scientific and technological breakthroughs. A reformed financial system will allow British entrepreneurs to get the committed financial backing they need, becoming the capitalist leaders in Europe. And, after a century of trying, Britain will at last build itself a system for developing apprentices and technicians that is no longer the Cinderella of the education system. It will not be plain sailing. Massive political turbulence in China and its conflict with the US will define part of the next 25 years – and there will be a period when the world trading and financial system retreats from openness. How far beggar-my-neighbour competitive devaluations and protection will develop is hard to predict, but protectionist trends are there for all to see. Commodity prices will go much higher and there will be shortages of key minerals, energy, water and some basic foodstuffs. The paradox is that this will be good news for Britain. It will force the state to re-engage with the economy and to build a matrix of institutions that will support innovation and investment, rather as it did between and New Labour began this process tremulously in its last year in office; the coalition government is following through. These will be lean years for the traditional Conservative right, but whether it will be a liberal One Nation Tory party, ongoing coalition governments or the Labour party that will be the political beneficiary is not yet sure. The key point is that those 20 years in the middle of the 20th century witnessed great industrial creativity and an unsung economic renaissance until the country fell progressively under the stultifying grip of the City of London. My guess is that the same, against a similarly turbulent global background, is about to happen again. My caveat is if the City remains strong, in which case economic decline and social division will escalate. Will Hutton, executive

vice-chair of the Work Foundation and an Observer columnist

3 Global development: Certainly, we will be polio-free and probably will have been for more than a decade. The fight to eradicate polio represents one of the greatest achievements in global health to date. It has mobilised millions of volunteers, staged mass immunisation campaigns and helped to strengthen the health systems of low-income countries. Vaccines that prevent diseases such as measles and rotavirus, currently available in rich countries, will also become affordable and readily available in developing countries. Since it was founded 10 years ago, the Gavi Alliance, a global partnership that funds expanded immunisation in poor countries, has helped prevent more than 5 million deaths. It is easy to imagine that in 25 years this work will have been expanded to save millions more lives by making life-saving vaccines available all over the world. I also expect to see major strides in new areas. A rapid point-of-care diagnostic test “ coupled with a faster-acting treatment regimen ” will so fundamentally change the way we treat tuberculosis that we can begin planning an elimination campaign. We will eradicate malaria, I believe, to the point where there are no human cases reported globally in We will also have effective means for preventing Aids infection, including a vaccine. With the encouraging results of the RV Aids vaccine trial in Thailand, we now know that an Aids vaccine is possible. We must build on these and promising results on other means of preventing HIV infection to help rid the world of the threat of Aids. Energy is a means, not an end, but a necessary means. Reducing use of fossil fuels is necessary both to avoid serious climate change and in anticipation of a time when scarcity makes them prohibitively expensive. It will be extremely difficult. This is almost entirely due to consumption in developing countries where living standards are, happily, rising and the population is increasing rapidly. We need to go much further in reducing demand, through better design and changes in lifestyles, increasing efficiency and improving and deploying all viable alternative energy sources. Disappointingly, with the present rate of investment in developing and deploying new energy sources, the world will still be powered mainly by fossil fuels in 25 years and will not be prepared to do without them. Chris Llewellyn Smith is a former director general of Cern and chair of Iter, the world fusion project, he works on energy issues at Oxford University

5 Advertising: And all these things are important and will change how advertising works. Marketing geniuses are working on this stuff right now, but not all of them recognise that being allowed to do this kind of thing depends on societal consent “ push the intrusion too far and people will push back. Society once did a deal accepting advertising because it seemed occasionally useful and interesting and because it paid for lots of journalism and entertainment. Russell Davies, head of planning at the advertising agency Ogilvy and Mather and a columnist for the magazines Campaign and Wired

6 Neuroscience: I sincerely hope we will not still be interfacing with computers via keyboards, one forlorn letter at a time. But I predicted that 20 years ago, when I was a sanguine boy leaving Star Wars, and the smartest robot we have now is the Roomba vacuum cleaner. Artificial intelligence has proved itself an unexpectedly difficult problem. We will have cracked the secret of human memory by realising that it was never about storing things, but about the relationships between things. Will we have reached the singularity “ the point at which computers surpass human intelligence and perhaps give us our comeuppance? Having lain to rest the nature-nurture dichotomy at that point, we will have a molecular understanding of the way in which cultural narratives work their way into brain tissue and of individual susceptibility to those stories. Will we finally have a framework that allows us to translate the mechanical pieces and parts into private, subjective experience? That line of research will lead us to confront the question of whether we can reproduce consciousness by replicating the exact structure of the brain “ say, with zeros and ones, or beer cans and tennis balls. If this theory of materialism turns out to be correct, then we will be well on our way to downloading our brains into computers, allowing us to live forever in The Matrix. But if materialism is incorrect, that would be equally interesting: The one thing we can be sure of is this: David Eagleman, neuroscientist and writer

7 Physics: At the moment, we have successful descriptions of both, but we have open questions. For example, why do particles of matter have mass and what is the dark matter that provides most of the matter in the universe? I am optimistic that the answer to the mass question will be found within a few years, whether or not it is the mythical Higgs boson, and believe that the answer to the dark matter question will be found within a decade. Many theoretical proposals for answering these questions invoke new principles in physics, such as the existence of additional dimensions of space or a

"supersymmetry" between the constituents of matter and the forces between them, and we will discover whether these ideas are useful for physics. Both these ideas play roles in string theory, the best guess we have for a complete theory of all the fundamental forces including gravity. Will string theory be pinned down within 20 years? My crystal ball is cloudy on this point, but I am sure that we physicists will have an exciting time trying to find out. By the middle of that decade, therefore, we will either all be starving, and fighting wars over resources, or our global food supply will have changed radically. The bitter reality is that it will probably be a mixture of both. Developed countries such as the UK are likely, for the most part, to have attempted to pull up the drawbridge, increasing national production and reducing our reliance on imports. In response to increasing prices, some of us may well have reduced our consumption of meat, the raising of which is a notoriously inefficient use of grain. This will probably create a food underclass, surviving on a carb- and fat-heavy diet, while those with money scarf the protein. The developing world, meanwhile, will work to bridge the food gap by embracing the promise of biotechnology which the middle classes in the developed world will have assumed that they had the luxury to reject. In truth, any of the imported grain that we do consume will come from genetically modified crops. As climate change lays waste to the productive fields of southern Europe and north Africa, more water-efficient strains of corn, wheat and barley will be pressed into service; likewise, to the north, Russia will become a global food superpower as the same climate change opens up the once frozen and massive Siberian prairie to food production. The consensus now is that the planet does have the wherewithal to feed that huge number of people. This feat was a graphic symbol of the potential of the new field of nanotechnology, which promises to rebuild matter atom by atom, molecule by molecule, and to give us unprecedented power over the material world. Some, like the futurist Ray Kurzweil, predict that nanotechnology will lead to a revolution, allowing us to make any kind of product for virtually nothing; to have computers so powerful that they will surpass human intelligence; and to lead to a new kind of medicine on a sub-cellular level that will allow us to abolish ageing and death. Some stubborn physics stands between us and "the rapture of the nerds". But nanotechnology will lead to some genuinely transformative applications. The information technology that drives your mobile phone or laptop is already operating at the nanoscale. Another 25 years of development will lead us to a new world of cheap and ubiquitous computing, in which privacy will be a quaint obsession of our grandparents. Nanotechnology is a different type of science, respecting none of the conventional boundaries between disciplines and unashamedly focused on applications rather than fundamental understanding. Given the huge resources being directed towards nanotechnology in China and its neighbours, this may also be the first major technology of the modern era that is predominantly developed outside the US and Europe. Richard Jones, pro-vice-chancellor for research and innovation at the University of Sheffield 10 Gaming: I can imagine more physical activity games, too, and these might be used to harness energy €” peripherals like a dance pad that actually captures energy from your dancing on top of it.

Chapter 3 : Future Predictions for | calendrierdelascience.com Anti-Aging News

A prescription for the future The biggest change in the pharmacy industry occurred only ten years ago. Now, the biggest innovators and disruptors anticipate how that change will influence the.

Safe drug disposal Find a convenient location to take back your expired or unneeded drugs. The United States is in the midst of an opioid epidemic. Every day people die from opiate related overdoses - and misuse of prescription painkillers is a large contributor to this crisis. Thankfully, there is something we can do. One way that you can help reduce the potential misuse of drugs is to properly dispose of expired or unused medications. This site will be updated with more information as we get closer to the event. Zoom in on the map to find a place near you to safely dispose of leftover prescription medications. No disposal location near you? Unused medicine can be disposed of at home as a last resort. Mix the medicine with an undesirable substance, such as used coffee grounds or kitty litter, and discard in a separate, sealed container. Protect your privacy and scratch out your personal information on the original container. Learn more about the FDA guidelines for medicine disposal options here. Why does safe drug disposal matter? Click on the tiles below for more information.

Environmental Risks Medicines that enter the environment can have a negative impact, especially on fish and amphibians such as frogs and toads. This in turn can have an effect on other species. Most wastewater treatment facilities cannot filter out drugs.

Accidental Use Accidental drug overdose is one of the most common sources of household injury. Young children are especially at risk for unintentional exposure to prescription and over-the-counter medications. The number of poisoning deaths among children has doubled since All drugs should be safeguarded. An important part of safeguarding is getting rid of them when they are no longer needed.

Health Risks Keeping drugs in the home beyond the time when they are needed or wanted poses health risks. Expired drugs may not only be ineffective, they can be harmful to the user. Sharing medicines can lead to dangerous health consequences.

Intentional Misuse Prescription drugs can be intentionally misused to get high. Drug use by teens is especially concerning as it can lead to the development of a chronic substance use disorder. Findings show that one in four teens has misused or abused a prescription drug at least once in their lifetime.

Chapter 4 : Introduction: Prescription Process

Monitoring the Future (MTF) is a long-term study of substance use and related factors among U.S. adolescents, college students, and adult high school graduates through age 60. It is conducted annually and supported by the National Institute on Drug Abuse.

Without taking age distribution into account, the fact that younger people are more likely to die from opioid-related overdoses could result in an over-estimated death rate for the Hispanic community as a whole. We might experience similar mischaracterization when looking at cities and towns that skew older or younger than the rest of the state. In these ways and others, age-adjusting population data helps public health officials get a more accurate picture of the crisis and better target the most problematic areas and populations. Statisticians use confidence intervals to indicate the level of certainty of a measurement by showing a range of likely results. Analyzing a population is often done by looking at samples that are intended to be representative of the whole group. It is easier to assess whether that representation is accurate when the sample size is larger. For example, it is easier to trust the results of a survey with thousands of respondents than a survey with only a dozen respondents. So, adjusted for different sample sizes, confidence intervals show the precision of different results. When counts are smaller, rates are less precise and confidence intervals are wider. Larger samples have narrower ranges. Note that the confidence intervals on the rates for the Black non-Hispanic category are much wider than those around the rates for the White non-Hispanic category. This is because fewer non-Hispanic Blacks are dying from opioid-related overdoses than non-Hispanic Whites, so their sample size is smaller. When comparing two results, you can only be sure that there is truly a difference when the confidence intervals do not overlap. An example of this is seen in the death rates for the Black non-Hispanic and Hispanic populations. When doing population analysis, statisticians will often use a rate per sample size example: Densely populated areas are more likely to show many types of behavior, whether good or bad, because there are simply more people. Using raw count, the largest cities would always show up as hot spots and probably draw the most focus and resources. By contrast, a raw count change from 10 to 20 in a city of 1 million was 0. By normalizing all the rates to the same sample size, we can properly compare groups to see that the problem is truly more prevalent among non-Hispanic Whites than among other groups. Comparing apples to apples by standardizing to a normalized rate helps public health officials get a more accurate picture so they can develop the right strategies to combat the epidemic.

Incarcerated Population When an inmate is released from prison in Massachusetts, their ability to re-enter society is being threatened by the opioid crisis. The risk of opioid-related death following release from incarceration is more than 50 times greater than for the general public. Fatal overdoses during the first month after release are six times higher than for all other post-incarceration periods. Following the age trend noted above, the risk of death for people aged 18-24 in this group is roughly 10 times higher than for individuals 45 or older. While some inmates receive substance use treatment while incarcerated, the data from this study does not include how, when, or for how long that treatment takes place. However, there are signs of hope and a turning tide. The state has recently taken a number of important steps to address the crisis. From campaigns aimed at shifting the culture around how the public views addiction, to giving our health care professionals the tools they need to responsibly prescribe opioids and monitor prescriptions, Massachusetts is working to end the epidemic. While there is still a lot to do, findings from the Chapter 55 report have helped elected officials and public health leaders determine what should be done next.

What to Do Next Stopping Stigma – Shifting the way that people view addiction and individuals with substance use issues is a top priority. Stories from people in recovery like Sue and Stephanie, and Cotto have helped reframe addiction as the disease it is. This new online system is more efficient and user-friendly than older technologies.

Expanding Prescription Drug Training – More resources and programs have been offered to dental schools and nursing and physician assistant programs to train students and professionals on how to prevent prescription drug misuse.

Expand OAT Treatment – One of the findings from Chapter 55 was that opioid agonist treatment OAT can lower the ongoing risk for opioid-related death if it follows a non-fatal overdose. Developing a strategy to effectively deliver OAT could

reduce the number of opioid-related deaths in the state. Consider Gender â€” Substance use trends differ depending on gender. This information can be used when developing prevention programs for both men and women. For example, working with pharmacists to create education and coordinated care strategies targeted at female patients could reduce the percentage of women who have multiple prescribers. Develop Post-incarceration Treatment Plan â€” The short-term risk for opioid-related death is much higher for individuals who were recently released from prison. Creating treatment programs that target this population may help curb the epidemic. Continue Using Data â€” The Chapter 55 legislation itself is an incredible tool. By continuing to share and look at different datasets, Massachusetts can gain even more insight into the epidemic and how it is changing. Public health leaders can then develop solutions based on the latest trends, enabling the state to stay ahead of the problem.

Chapter 5 : Education, Social Change, and the Future - Sociological Images

*"Prescription for the Future is a detailed guidebook to achieve value-based care. Dr. Emanuel dives below the surface of politics and policy, focusing on concrete and effective changes clinics and hospitals can make to improve the quality and lower the cost of care."*â€•

We also sponsored completed clinical trials of MDMA-assisted psychotherapy for anxiety associated with life-threatening illness, and MDMA-assisted therapy for social anxiety in autistic adults. MAPS is interested in LSD for its potential to help people with a variety of conditions, focusing primarily on the treatment of anxiety associated with life-threatening illness. Our Phase 2 pilot study in 12 subjects found positive trends in the reduction of anxiety following two LSD-assisted psychotherapy sessions. The study results also indicate that LSD-assisted psychotherapy can be safely administered in these subjects, and justify further research. Ibogaine Therapy for Drug Addiction MAPS-sponsored researchers have published observational data from the first prospective ibogaine outcome studies in order to contribute to the growing scientific literature about ibogaine as a treatment for drug addiction. Although first-hand accounts indicate that ibogaine is not popular as a recreational drug, ibogaine remains classified as a Schedule I drug in the United States it is also scheduled in Belgium and Switzerland. Yet despite its classification as a drug with a "high potential for abuse" and "no currently accepted medical use," people who struggle with substance abuse continue to seek out international clinics or underground providers to receive ibogaine treatment. We also support conferences, meetings, and publications about the scientific, therapeutic, sustainable, and spiritual uses of ayahuasca. We also serve as non-profit fiscal sponsor for organizations that support these uses. We recently completed the first North American observational study of the safety and long-term effectiveness of ayahuasca treatment for addiction and dependence. The paper describing the results of the study was published in June in Current Drug Abuse Reviews. Medical Marijuana MAPS has been working since to sponsor FDA-approved clinical studies into the safety and efficacy of botanical marijuana as a prescription medicine for specific medical uses. On March 14, , the U. Psychedelic Peer Counseling The Zendo Project provides a supportive environment and specialized care at festivals and events, designed to transform difficult psychedelic experiences into valuable learning opportunities, and even potentially offer healing and growth. In turn, our work reduces the number of drug-related hospitalizations and arrests. Our Values Information is shared openly and clearly. Communications are respectful, honest, and forthright. Passion and Perseverance We persist in the face of challenges. Intelligent Risk Our decisions are informed by research. We try new things and learn from our mistakes. Trust and Accountability We value integrity and honesty, and embrace high standards. MAPS We are a c 3 non-profit research and educational organization developing medical, legal, and cultural contexts for people to benefit from the careful uses of psychedelics and marijuana.

Chapter 6 : Prescription mapping

Prescription for the Future shines a bright diagnostic light on the state of American healthcare and provides invaluable insights for healthcare workers, investors, and patients. The book gives all of us the tools to recognize the places that will deliver high-quality, effective care when we need it.

It is estimated that the doubling time of medical knowledge in was 50 years; in , 7 years; and in , 3. In it is projected to be 0. Computer power is doubling every 18 months, so massive increases in scope and scale. Once nanotechnology and nano circuitry, stem cells, and genetic engineering, come on board, the world as we know it will be unrecognizable. Get ready for the first complete synthetic human brain, moon mining, chips implanted in our brains, self-driving cars, trucks and planes, robotic moon bases and maybe even high-speed rail linking London to Beijing. This Brave New World is coming into being faster than we imagined. To have the great jobs and careers of the future, you must embrace and see it before it arrives. Interventions such as caloric restriction, rapamycin, stem cells, genetic engineering, nanotechnology and metformin, etc have been studied for decades for their anti-aging capacity. In the past several years, multiple scientific teams demonstrated the rejuvenating powers of young blood. Hundreds of anti-aging drugs are now in the pipeline and billions of dollars are being expended to find real answers. The Robots are Coming Robotics is a rapidly emerging technology which will penetrate every aspect of business and our daily lives. This will replace massive numbers of manufacturing jobs and manual labor. Japan is expecting one in three of its population to be over the age of 65 by , and one in five to be over 75, creating a major requirement for the care of the elderly. Japan is now using robots to service the elderly. Aid assistance in nursing facilities is on the horizon, meaning many of the entry-level jobs in those areas will become obsolete just like bank tellers. Coastal Changes Climate change will have a strong economic impact in the future. Becoming efficient with resources is socially responsible and cost beneficial. Organizations need to adapt to increasing regulations controlling energy efficiency, waste, water leakage, urban congestion, transportation efficiency, land degradation, freight impact, and other factors. Allowing employees to work virtually also reduces the need for facilities and helps organizations minimize their carbon footprints. New Energy Sources Where we get our energy from will change dramatically. It makes political sense not to rely on volatile regions for energy, and this push could mean both cleaner vehicle fleets and a major bump in the competitiveness of biofuels in the market. The strangle hold that Middle Eastern oil holds will soon be an ancient memory. Biofuels and renewable clean energy are growth industries of the future.. Oil and coal are on their way out. These tissues should be better predictors of drug function than animal models in many cases. By , the goal is to have the technology be broadly used by pharmaceutical companies, resulting in the identification of safer and better drug candidates and fewer failures in clinical trials. This same 3D Printed technology via stem cells, is also being applied to meat production for human consumption. These were replaced largely by new global entrants and technology companies. This will continue to shift to farther parts of the planet. Technology is already disrupting existing jobs, and creating new jobs that never existed before. In fact, the top 10 in-demand jobs in did not even exist in . If u wish to be competitive you must enhance your tech skill levels for future industries not yet mainstream. Under-investment in water management is exacerbating the problem, causing serious impacts on human health and the environment. A key challenge is the high capital cost, and high energy requirements, of current wastewater treatment and management systems. Desalination plants will spring up worldwide to create massive needed fresh water from sea ocean water. The ability to use biotechnology to extract resources, such as energy, from waste, and the dropping cost of industrial automation, will begin to change our approach to managing water globally. Rather than a liability, wastewater will be viewed as an environmental resource, providing energy and clean water to communities and industry, and ushering in a truly sustainable and economical approach to managing our water resources. Supercomputers with artificial intelligence taking better care of you than your Doctor? IBM Watson has partnered with Celgene to better track negative drug side effects and IBM is applying its cognitive computing AI technology to recommend cancer treatment in rural areas in the U. And coupled with advanced MRI, CT and PET scans, view the inner body in mind

boggling ways and even treating cancers and other issues at the microscopic level. This will turn the medical profession on its ear. Nanotechnology "nanotech" is manipulation of matter on an atomic, molecular, and supramolecular scale. The earliest, widespread description of nanotechnology referred to the particular technological goal of precisely manipulating atoms and molecules for fabrication of macroscale products, also now referred to as molecular nanotechnology which is the manipulation of matter with at least one dimension sized from 1 to nanometers and such technologies deal with the special properties of matter which occur below the given size threshold potential applications including industrial and military. Governments have invested billions of dollars in nanotechnology research and can be as diverse as surface science, organic chemistry, molecular biology, semiconductor physics, microfabrication, molecular engineering, etc. The associated research and applications are equally diverse, ranging from extensions of conventional device physics to completely new approaches based upon molecular self-assembly, from developing new materials with dimensions on the nanoscale, to direct control of matter on the atomic scale. Nanotechnology may be able to create many new materials and devices with a vast range of applications, such as in nanomedicine, nanoelectronics, biomaterials energy production, and consumer products. On the other hand, nanotechnology raises many of the same issues as any new technology, including concerns about the toxicity and environmental impact of nanomaterials, and their potential effects on global economics, as well as speculation about various doomsday scenarios. These concerns have led to a debate among advocacy groups and governments on whether special regulation of nanotechnology is warranted.. So with nano circuitry, we may be able to live, basically, in a virtual world " Matrix style This may in fact lead to virtual bodies like the wild video games and Virtual Reality VR and Artificial Intelligence AI devices we seeing exploding on the scene: To look forward to how we will drive in you just have to look back to The US electricity industry ran a newspaper ad promising a life of leisure in the future with a now iconic image showing a near empty highway and a family in a self-driving car with a glass bubble roof. Nissan and Mercedes-Benz have set down as when they plan to introduce cars that can navigate city streets without the need for a driver. Volvo, which will soon begin trialling self-driving cars in Australia, has taken that one step further. Since then, Volvo has added some fine print to that bold prediction. No matter how attentive a human driver can be, a self-automated car with lasers, radar, sonar and video sensors gives the car the edge in keeping an eye on the road. In many ways Google is leading the charge towards self-driving cars with its autonomous vehicles now having driving nearly 3 million self-autonomous kilometres with only a handful of minor accidents and most of them caused by drivers running into the self-driving car because they are distracted by the Google logo and sensors on the top. But other new players working on autonomous cars include Uber, Tesla and, if the rumours are true, Apple. You can imagine people ringing state capitals with their trucks. Mining giant Rio Tinto already uses 45 ton driverless trucks to move iron ore in two Australian mines, saying it is cheaper and safer than using human drivers. Now the race is on to put driverless trucks on public roads. In May , the first self-driving truck hit the American road in the state of Nevada, and there have been several tests around the world since then including a convoy that drove across Europe to the port of Rotterdam. That convoy used a new automated driving technology called platooning, which connects trucks using Wi-Fi, sensors, GPS and cameras. The leading vehicle dictates speed and direction, while the rest automatically steer, speed up and slow down in close convoy. In addition to cost savings, fleets of automated trucks could save lives. Crashes involving large trucks killed 3, people in the US in , according to the National Highway Traffic Safety Administration, and a further , people were injured. What next for drivers? Where does this leave the 3. Truck Driver is not a profession for the future. There are currently Juniper Research predicts that figure will reach Technology analysts Telsyte predict the number of connected devices in the average Australian home will jump from the current figure of nine to at least 24 and the internet-enabled white good will become the norm, just as smart TVs are now standard. This is another career growth area in the tech fields.

nonprofit, nonpartisan membership organization that helps people 50+.

Chapter 8 : Safe drug disposal – Google Earth Outreach

A prescription for the future How hospitals could be rebuilt, In future, rather than checking patients' vital signs only at intervals, or parking ICU-nurses next to beds, live data-streams.