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Chapter 1 : Pot Stocks & Biotech Stocks to Watch in & Beyond

Written for lay readers, Beyond Biotechnology is an accessible introduction to the complicated issues of genetic engineering and its potential applications. In the unexplored space between nature and laboratory, a new science is waiting to emerge.

Additional Information In lieu of an abstract, here is a brief excerpt of the content: While examining these issues, the authors also answer vital questions that get to the essence of genetic interaction with human biology: Should genetically engineered products be labeled as such? Do the methods of the genetic engineer resemble the centuries-old practices of animal husbandry? Written for lay readers, Beyond Biotechnology is an accessible introduction to the complicated issues of genetic engineering and its potential applications. In the unexplored space between nature and the laboratory, a new science is waiting to emerge. Technologybased social and environmental solutions will remain tenuous and at risk of reversal as long as our culture is alienated from the plants and animals on which all life depends. Craig Holdrege is director of the Nature Institute. He is the author of Genetics and the Manipulation of Life: From Evolutionary Fable to Whole Organism. Steve Talbott is a senior researcher at the Nature Institute. He is the editor of the online newsletter NetFuture and the author of Devices of the Soul: Battling for Our Selves in an Age of Machines. Scientists, politicians, theologians, and pundits speculated about what would follow, conjuring everything from nightmare scenarios of state-controlled eugenics to the hope of engineering disease-resistant newborns. As with debates surrounding stem-cell research, the seemingly endless possibilities of genetic engineering will continue to influence public opinion and policy into the foreseeable future. The Barren Promise of Genetic Engineering distinguishes between the hype and reality of this technology and explains the nuanced and delicate relationship between science and nature. Authors Craig Holdrege and Steve Talbott evaluate the current state of genetic science and examine its potential applications, particularly in agriculture and medicine, as well as the possible dangers. The authors show how the popular view of genetics does not include an understanding of the ways in which genes actually work together in organisms. Simplistic and reductionist views of genes lead to unrealistic expectations and, ultimately, disappointment in the results that genetic engineering actually delivers. It demonstrates how agrarian insights and responsibilities can be worked out in diverse fields of learning and living: Agrarianism is a comprehensive worldview that appreciates the intimate and practical connections that exist between humans and the earth. It stands as our most promising alternative to the unsustainable and destructive ways of current global, industrial, and consumer culture. You are not currently authenticated. View freely available titles:

Chapter 2 : Beyond Biotech M&A: What Comes Thereafter | LifeSciVCLifeSciVC

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Allergan has acquired four small companies in the past couple weeks. Pfizer won the Medivation prize. Horizon bought rare disease play Raptor. Just to name a few. Is more biotech deal making truly great for all of us? Specifically, is an acquisition of our employer great for all of us? If not, what could we do to make it great for all of us? At least in venture and business development circles, there is an assumption that an acquisition is great for everyone. We created value for shareholders, right? Unless the shareholders are convinced they would have gotten more value later by not selling now, an acquisition is certainly great for them. By selling, we also put our precious drug development programs in the hands of experienced teams who can apply ample resources to moving those therapies to patients. That should be incredibly motivating â€" and it is. An acquisition is not necessarily a welcome outcome for all people. Depending on the maturity of the post-acquisition plan at the time of announcement â€" if there even is a plan at that time â€" it can be a stressful time for employees of the target company. Everything from roles, reporting relationships, and decision-making to location, benefits, comp and the existence of a job can come into question. All that work we do to establish a meaningful mission, a compelling vision, an inspiring culture and a sense of passion within our energetic start-ups can seem to be swallowed up in the jaws of a behemoth in an instant if the integration process is swift and complete. What I will say is that we can try, when time allows for this, to plan an integration path that best harnesses the value of the target employees. When a company is acquired, there are choices to be made regarding the treatment of the acquired employees. Numerous factors drive those choices. As sellers, we may have little say in those choices, but can try to influence them as we convey the value proposition to potential buyers. Is the value purely in the assets? In the platform know-how our team has built? In our relationships with clinical experts, trial sites or prescribing physicians? If so, can we effectively persuade the acquirer to work hard to preserve that value? As buyers of companies, we may embed integration choices integrally into the value proposition. If so, we may endeavor to keep that team in place and operating as is, so as not to disrupt its value. We may even attempt to maintain its company identity, norms and culture. Some folks involved will have strong retrospective views on how well these examples worked out over time, yet good intention was surely there at the outset. The value proposition for the clinical asset was intrinsically linked with carrying out the clever clinical development plan authored by the Stromedix team. Biogen integrated the small Stromedix team into its fold, yet kept the team co-located, responsible for the drug program and reasonably nimble with its leadership intact. That was a smart approach. On the flip side, what if the value proposition is largely in marketed products? What if the value proposition lies largely in pipeline programs that the acquirer can fully integrate into its established research organization? They even went the extra mile to offer alternative positions in nearby geographies to Padlock employees who did not want to move to Princeton, NJ. By three months after the close of the transaction, no Padlock employees remained at BMS. No fault of BMS. No fault of anyone. It was predictable and was, indeed, bittersweet. A rare, but fantastic integration approach arises when the acquirer values the assets and genuinely values the help of the selling team â€" yet circumstances allow for the selling team to remain intact and focused on other elements of their business while providing transition services to the acquirer.. The challenge of preserving value post-acquisition is not new. The approaches I have covered are not particularly new, either, but deserve reviewing periodically since this topic is not always on top of mind for those driving the transaction decisions. I sign off by saluting the folks from Pharmasset and Organon and the countless other folks who have contributed to meaningful approved therapies even while losing their company identity somewhere along the way. May you feel fulfilled in the benefit you have provided to patients, whether you were there to receive a commemorative trinket upon launch or not.

Chapter 3 : biotechandbeyond

Beyond Biotech, LLc develop a nutrition supplement with the extract from Lingzhi used for supportive therapy of patients with different diseases and improving living quality.

Chapter One Biotechnology and the Pursuit of Happiness: An Introduction What is biotechnology for? Why is it developed, used, and esteemed? Toward what ends is it taking us? To raise such questions will very likely strike the reader as strange, for the answers seem so obvious: But they do not tell the whole story, and, when carefully considered, they give rise to some challenging questions, questions that compel us to ask in earnest not only, "What is biotechnology for? Though others have given it both narrow and broad definitions, i our purpose-for reasons that will become clear-recommends that we work with a very broad meaning: Overarching the processes and products it brings forth, biotechnology is also a conceptual and ethical outlook, informed by progressive aspirations. In this sense, it appears as a most recent and vibrant expression of the technological spirit, a desire and disposition rationally to understand, order, predict, and ultimately control the events and workings of nature, all pursued for the sake of human benefit. Thus understood, biotechnology is bigger than its processes and products; it is a form of human empowerment. By means of its techniques for example, recombining genes , instruments for example, DNA sequencers , and products for example, new drugs or vaccines , biotechnology empowers us human beings to assume greater control over our lives, diminishing our subjection to disease and misfortune, chance and necessity. The techniques, instruments, and products of biotechnology-like similar technological fruit produced in other technological areas-augment our capacities to act or perform effectively, for many different purposes. Just as the automobile is an instrument that confers enhanced powers of "auto-mobility" of moving oneself , which powers can then be used for innumerable purposes not defined by the machine itself, so DNA sequencing is a technique that confers powers for genetic screening that can be used for various purposes not determined by the technique; and synthetic growth hormone is a product that confers powers to try to increase height in the short or to augment muscle strength in the old. If we are to understand what biotechnology is for, we shall need to keep our eye more on the new abilities it provides than on the technical instruments and products that make the abilities available to us. As with all techniques and the powers they place in human hands, the techniques and powers of biotechnology enjoy considerable independence from ties to narrow or specific goals. Biotechnology, like any other technology, is not for anything in particular. Like any other technology, the goals it serves are supplied neither by the techniques themselves nor by the powers they make available, but by their human users. Like any other means, a given biotechnology once developed to serve one purpose is frequently available to serve multiple purposes, including some that were not imagined or even imaginable by those who brought the means into being. Second, there are several questions regarding the overall goal of biotechnology: What exactly is it about the lot of humankind that needs or invites improvement? Should we think only of specific, as-yet-untreatable diseases that compromise our well-being, such ailments as juvenile diabetes, cancer, or Alzheimer disease? Should we not also include mental illnesses and infirmities, from retardation to major depression, from memory loss to melancholy, from sexual incontinence to self-contempt? And should we consider in addition those more deep-rooted limitations built into our nature, whether of body or mind, including the harsh facts of decline, decay, and death? Just sickness and suffering, or also such things as nastiness, folly, and despair? Must "improvement" be limited to eliminating these and other evils, or should it also encompass augmenting our share of positive goods-beauty, strength, memory, intelligence, longevity, or happiness itself? Third, even assuming that we could agree on which aspects of the human condition call for improvement, we would still face difficulties deciding how to judge whether our attempts at improving them really made things better-both for the individuals and for the society. Some of the goals we seek might conflict with each other: Efforts to moderate human aggression might wind up sapping ambition; interventions aimed at quieting discontent might flatten aspiration. And, unintended consequences aside, it is not easy to say just how much less aggression or discontent would be good for us. Once we go beyond the treatment of disease and the pursuit of health, there seem to be no ready-made or reliable standards of better and worse available to

guide our choices. As this report will demonstrate, these are not idle or merely academic concerns. Indeed, some are already upon us. We now have techniques to test early human embryos for the presence or absence of many genes: We are acquiring techniques for boosting muscle strength and performance: We are gradually learning how to control the biological processes of aging: We are gaining new techniques for altering mental life, including memory and mood: Increasingly, these are exactly the kinds of questions that we shall be forced to face as a consequence of new biotechnical powers now and soon to be at our disposal. Increasingly we must ask, "What is biotechnology for? Enthusiasm and Concern By all accounts, we have entered upon a golden age for biology, medicine, and biotechnology. With the completion of the DNA sequencing phase of the Human Genome Project and the emergence of stem cell research, we can look forward to major insights into human development, normal and abnormal, as well as novel and more precisely selected treatments for human diseases. Advances in neuroscience hold out the promise of powerful new understandings of mental processes and behavior, as well as remedies for devastating mental illnesses. Ingenious nanotechnological devices, implantable into the human body and brain, raise hopes for overcoming blindness and deafness, and, more generally, of enhancing native human capacities of awareness and action. Research on the biology of aging and senescence suggests the possibility of slowing down age-related declines in bodies and minds, and perhaps even expanding the maximum human lifespan. In myriad ways, the discoveries of biologists and the inventions of biotechnologists are steadily increasing our power ever more precisely to intervene into the workings of our bodies and minds and to alter them by rational design. For the most part, there is great excitement over and enthusiasm for these developments. Even before coming to the practical benefits, we look forward to greatly enriched knowledge of how our minds and bodies work. But it is the promised medical benefits that especially excite our admiration. Vast numbers of people and their families ardently await cures for many devastating diseases and eagerly anticipate relief from much human misery. We will surely welcome, as we have in the past, new technological measures that can bring us healthier bodies, decreased pain and suffering, peace of mind, and longer life. At the same time, however, the advent of new biotechnical powers is for many people a cause for concern. First, the scientific findings themselves raise challenges to human self-understanding: Second, the prospect of genetic engineering, though welcomed for treatment of inherited genetic diseases, raises for some people fears of eugenics or worries about "designer babies. Precisely because the new knowledge and the new powers impinge directly upon the human person, and in ways that may affect our very humanity, a certain vague disquiet hovers over the entire enterprise. Notwithstanding the fact that almost everyone, on balance, is on the side of further progress, the new age of biotechnology will bring with it novel, and very likely momentous, challenges. While its leading benefits and blessings are readily identified, the ethical and social concerns raised by the march of biotechnology are not easily articulated. They go beyond the familiar issues of bioethics, such as informed consent for human subjects of research, equitable access to the fruits of medical research, or, as with embryo research, the morality of the means used to pursue worthy ends. Indeed, they seem to be more directly connected to the ends themselves, to the uses to which biotechnological powers will be put. Generally speaking, these broader concerns attach especially to those uses of biotechnology that go "beyond therapy," beyond the usual domain of medicine and the goals of healing, uses that range from the advantageous to the frivolous to the pernicious. Biotechnologies are already available as instruments of bioterrorism for example, genetically engineered super-pathogens or drugs that can destroy the immune system or erase memory , as agents of social control for example, tranquilizers for the unruly or fertility-blockers for the impoverished , and as means to improve or perfect our bodies and minds and those of our children steroids for body-building or stimulants for taking exams. In the first two cases, there are concerns about what others might do to us, or what some people, including governments, might do to other people. In the last case, there are concerns about what we might voluntarily do to ourselves or to our society. People worry both that our society might be harmed and that we ourselves might be diminished in ways that could undermine the highest and richest possibilities for human life. Truth to tell, not everyone who has considered these prospects is worried. On the contrary, some celebrate the perfection-seeking direction in which biotechnology may be taking us. Indeed, some scientists and biotechnologists have not been shy about prophesying a better-than-currently-human world to come, available

with the aid of genetic engineering, nanotechnologies, and psychotropic drugs. Not everyone cheers a summons to a "post-human" future. Not everyone likes the idea of "remaking Eden" or of "man playing God. The Case for Public Attention Despite the disquiet it arouses, the subject of using biomedical technologies for purposes "beyond therapy" has received remarkably little public attention. Given its potential importance, it is arguably the most neglected topic in public bioethics. No previous national bioethics commission has considered the subject, and for understandable reasons. The realm of biotechnology "beyond therapy" is hard to define, a gray zone where judgment is, to say the least, difficult. Compared with more immediate topics in bioethics, the questions raised by efforts to "improve on human nature" seem abstract, remote, and overly philosophical, unfit for public policy; indeed, many bioethicists and intellectuals believe either that there is no such thing as "human nature" or that altering it is not ethically problematic. The concerns raised are complicated and inchoate, hard to formulate in general terms, especially because the differing technologically based powers raise different ethical and social questions: Analysis often requires distinguishing the primary and immediate uses of a technology say, mood-elevating drugs to treat depression or memory-blunting drugs to prevent post-traumatic stress disorder from derivative and longer-term uses and implications the same drugs used as general mood-brighteners or to sanitize memories of shameful or guilty conduct. Speculation about those possible implications, never to be confused with accurate prediction, is further complicated by the fact that the meaning of any future uses of biotechnology "beyond therapy" will be determined at least as much by the goals and practices of an ever-changing society as by the technologies themselves. Finally, taking up these semi-futuristic prospects may seem a waste of public attention, especially given the more immediate ethical issues that clamor for attention. Some may take us to task for worrying about the excesses and abuses of biotechnology and the dangers of a "brave new world" when, in the present misery-ridden world, millions are dying of AIDS, malaria, and malnutrition, in part owing to the lack of already available biomedical technologies. Yet despite these genuine difficulties and objections, we believe that it is important to open up this subject for public discussion. For it raises some of the weightiest questions in bioethics. It touches on the ends and goals to be served by the acquisition of biotechnical power, not just on the safety, efficacy, or morality of the means. It bears on the nature and meaning of human freedom and human flourishing. It faces squarely the alleged threat of dehumanization as well as the alleged promise of "super-humanization. And it is far from being simply futuristic: Decisions we are making today-for instance, what to do about sex selection or genetic selection of embryos, or whether to prescribe behavior-modifying drugs to preschoolers, or how vigorously to try to reverse the processes of senescence-will set the path "beyond therapy" for coming generations. And fair or not, the decisions and choices of the privileged or avant-garde often will pave the way that others later follow, in the process sometimes changing what counts as "normal," often irreversibly. Taking up this topic is, in fact, responsive to the charge President Bush gave to this Council, formed by executive order "to advise the President on bioethical issues that may emerge as a consequence of advances in biomedical science and technology. Unlike legislators caught up in the demands of pressing business, we have the luxury of being able carefully and disinterestedly to consider matters before they become hotly contested items for public policy. Unless a national bioethics council takes up this topic, it is unlikely that anyone else in public life will do so. And if we do not prepare ourselves in advance to think about these matters, we shall be ill prepared to meet the challenges as they arrive and to make wisely the policy decisions they may require. Defining the Topic Having offered our reasons for taking up the topic, we need next to define it more carefully and to indicate how we mean to approach it. As already suggested, the "beyond therapy" uses of biotechnology on human beings are manifold. We shall not here consider biotechnologies as instruments of bioterrorism or of mass population control. The former topic is highly specialized and tied up with matters of national security, an area beyond our charge and competence. Also, although the practical and political difficulties they raise are enormous, the ethical and social issues are relatively uncomplicated. The main question about bioterrorism is not what to think about it but how to prevent it. And the use of tranquilizing aerosols for crowd control or contraceptive additions to the drinking water, unlikely prospects in liberal democratic societies like our own, raise few issues beyond the familiar one of freedom and coercion. Much more ethically challenging are those "beyond therapy" uses of biotechnology that would appeal to free and

enterprising people, that would require no coercion, and, most crucially, that would satisfy widespread human desires. Sorting out and dealing with the ethical and social issues of such practices will prove vastly more difficult since they will be intimately connected with goals that go with, rather than against, the human grain. For these reasons, we confine our attention to those well-meaning and strictly voluntary uses of biomedical technology through which the user is seeking some improvement or augmentation of his or her own capacities, or, from similar benevolent motives, of those of his or her children.

Chapter 4 : Beyond Therapy: Biotechnology and the Pursuit of Happiness

Food security in any country depends on the ability of its population to adapt new farming technologies. The technologies usually exist at each level of production such as land preparations, seed treatment, pest control, storage of the farm produce among others.

Phillip Boyne In , Dr. This technique became standard care and has remained unchanged for the last 40 years. Some surgeons tried to obtain bone from alternative sources including: Other surgeons tried amassing bone from different locations on the child, such as the skull, leg, and jaw. Hip harvesting remained the most common practice for decades. Although the results are generally good there are significant drawbacks to the approach. Significant pain at the hip bone harvesting site 2. Occasional long term difficulty walking 3. Prolonged hospital stay 4. A permanent scar over the harvest site In addition to the inherent problems incurred when a child is subjected to hip surgery, there is often a limit to the amount of bone that can be harvested, especially in young and small patients. Morphogenesis with BMP Use of bone morphogenetic protein BMP for repair of cleft palates and other craniofacial disorders is one of the early benefits of the biotechnology revolution in surgical practice. These naturally occurring agents BMP have the ability to grow living bone in patients with missing bone segments, such as in cleft palates. Unlike previous treatments, this process requires no initial bone and therefore spares children the hazards and trauma of harvesting bone from their own skeletons. Bone morphogenetic proteins BMPs are a group of molecules that occur naturally in all human beings. During the development of the embryo, BMPs are important in the formation of the fetal skeleton. In an adult skeleton, there are still small quantities of this protein housed inside the bones to help maintain the bone and repair fractures. Marshall Urist, an orthopedic surgeon, was able to isolate BMPs and now it is manufactured by pharmaceutical companies Wyeth and Stryker. Marshall Urist Urist was the first person to conceptually understand the role of bone morphogenetic protein BMP His research showed that BMPs could stimulate the formation of bone without the presence of bone cells to begin with. The process involved use of BMPs to recruit adult stem cells to a site and then to direct the cells to become bone forming cells called osteoblasts. John Wozney Later, Dr. John Wozney used modern biotechnology methods to sequence human BMP-2 and clone it. The recombinant rh technology used by Wozney and the pharmaceutical industry allows for the production of large and pure quantities of rhBMP What does BMP do? When placed into the cleft region, bone morphogenetic protein BMP-2 does two things. Second, it attaches itself to the stems cells and instructs them to become bone cells. The resultant newly formed bone cells then grow new bone, filling in the missing part that nature forgot. BMP simply stimulates the body to grow its own bone. Is BMP reconstruction better than hip grafting? The most obvious and compelling advantages of using bone morphogenetic protein BMP-2 is that it spares the child the trauma and hazards of undergoing hip surgery. Benefits, however, go beyond avoiding hip surgery. Benefits of utilizing BMP to repair clefts include: The entire upper jaw cleft can be repaired instead of just the front segment, which is the practice when performing hip graft surgery 2. Shorter anesthesia exposure 5. With this added treatment flexibility, timing of the repair can be done at an ideal stage of maturity to optimize development of facial bones and teeth. In the past, only a limited portion of the cleft was repaired due to the limitation of available bone. With BMP, the whole cleft can be repaired and the natural volume of the upper jaw restored. Repair of skeletal clefts is a multifaceted problem and no technique is percent successful. Clefts were successfully closed 98 percent of the time using bone morphogenetic protein BMP Roughly five patients in underwent a second placement of BMP to either establish bone fusion of the cleft or increase the volume of bone grown in a prior BMP surgery. Of the patients that failed hip grafting and elected BMP for the second repair, all of the patients to date were successfully treated. In some cases, a combination of distraction osteogenesis DO and BMP were required to attain a successful outcome. Is the use of BMP experimental? The FDA issues approval for a device or medication for a specific use. BMP is currently approved for: Spine fusion surgery 2. Treatment of orthopedic fracture non-unions 3. Maxillary bone construction for dental implants These specific approvals were issued by the FDA after scientific studies were completed on humans undergoing these specific procedures. This practice is

called off-label use. It should be understood that there has not been a formal controlled study supervised by the FDA on the use of BMP in cleft surgery. Practicing doctors use the experience described in published journal articles and their own experience and judgment when making a decision to offer treatments that are off-label. Many medications and devices prescribed by doctors every day are for off-label applications. Therefore, most medications and devices used for pediatric treatment are or were once used in an off-label capacity. You must select a collection to display.

Chapter 5 : GMO Beyond The Science I Archives | Genetic Literacy Project

Written for lay readers, Beyond Biotechnology is an accessible introduction to the complicated issues of genetic engineering and its potential applications. In the unexplored space between nature and the laboratory, a new science is waiting to emerge.

For this sector, the simplest of truisms has always held: Moreover, in the biotech industry in the US and Europe faced â€" and continues to face â€" unprecedented strategic and policy uncertainty. But despite these challenges and the peculiar gravitational pull that always follows years of success, biotech largely stayed the course in and was able to deliver historically strong results across a number of key metrics. In , overall financing was down, but the early-stage venture ecosystem remained healthy. In fact, biotech enjoyed its third-best financing year ever, despite a drop in proceeds from initial public offerings and follow-on rounds. Dealmaking remained active in as acquirers took advantage of biotech valuations coming back to Earth. But so far in it has enjoyed a bounce in tune with the broader market, and the lure of tax reform and continued consolidation has helped to buoy the sector. In particular, both venture investment and the public market bets appear to be focused on immuno-oncology companies. Whether the tremendous amount of capital deployed in immuno-oncology start-ups and by established biopharma companies turns out to be disproportionate to even rosy market predictions remains to be seen. Regulatory speed bumps The U. Legal details to the regulatory approval process for this new therapy class are still being ironed out in court, with particularly interest in the Amgen v. Sandoz case at the U. However, no matter the outcome, increasing payer pressure in specialty markets creates demand for these molecules. This was mainly the result of a mix of manufacturing-related issues and fewer new drug applications overall. Uncertainty, certainly Brexit is merely one aspect of what many in biotech see as unprecedented policy and regulatory uncertainty in The possible repeal of the Patient Protection and Affordable Care Act in the US and the possible impacts of tax reform also hang over the future prospects of biotechnology companies. Support by the Trump Administration for key institutions relied on by the biotech industry, such as the National Institutes of Health, is wavering. Hiring freezes and funding cuts at key federal agencies could raise issues for 21st Century Cures Act implementation. The policy arena could also drive more financing volatility in the short term, impacting both fundraising and dealmaking strategies. Meanwhile, for companies with marketed therapies, competitive as well as political forces will reinforce downward pressure on drug prices and the need to demonstrate drug value. Looking ahead through and into , the growth of the biotech industry is increasingly global. The emerging venture ecosystem in China comprising strategic as well as financial investors is quickly funding a new generation of home-grown biotech competitors. These and other forms of competition â€" from digital technologies to newly unearthed biological pathways or technologies, including cell therapy and gene editing that promise next-wave innovation, to the impact of biosimilars â€" will further drive biopharma dealmaking. To read more on our insights and analysis of the biotech industry, see our latest report, Biotechnology report Beyond borders â€" Staying the course. EY Legal Services Contacts:

Chapter 6 : Genetic Literacy Project Special Report: GMO: Beyond the Science | Genetic Literacy Project

Beyond Therapy: Biotechnology and the Pursuit of Happiness. The President's Council on Bioethics Washington, D.C., October

Chapter 7 : Beyond Biotechnology

"Beyond Therapy: Biotechnology and the Pursuit of Happiness" focuses on what's at stake ethically and socially when the uses of biotechnology go beyond therapy to the pursuit of personal.

Chapter 8 : Beyond biotechnology - www.nxgvision.com

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Chapter 9 : PCBE: Human Cloning and Human Dignity: An Ethical Inquiry -- Full Report

Beyond borders Biotechnology report 5. 2 3 Year in review Demonstrating value The rising power of increasingly consolidated payers is one reason for slowing.