**1nc ptx**

**Obama’s consistent political capital pressure is key to get Boehner to allow a vote**

**Sullivan, 10/24/13** (Sean, “John Boehner's next big test: Immigration” Washington Post Blogs, The Fix, lexis)

President Obama delivered remarks Thursday morning to renew his call for Congress to pass sweeping immigration reform. The prevailing sentiment in Washington is that it’s not going to happen this year, and may not even happen next year.

But because of the last few weeks, it just might get done by early next year. It’s all up to House Speaker John A. Boehner (R-Ohio), who by political necessity, must now at least consider leaning in more on immigration.

“Let’s see if we can get this done. And let’s see if we can get it done this year,” Obama said at the White House.

Fresh off a decisive defeat in the budget and debt ceiling showdown that cost the GOP big and won the party no major policy concessions from Democrats, Boehner was asked Wednesday about whether he plans to bring up immigration legislation during the limited time left on the 2013 legislative calendar. He didn’t rule it out.

“I still think immigration reform is an important subject that needs to be addressed. And I’m hopeful,” said Boehner.

The big question is whether the speaker’s hopefulness spurs him to press the matter legislatively or whether the cast-iron conservative members who oppose even limited reforms will dissuade him and extinguish his cautiously optimistic if noncommittal outlook.

Months ago, as House Republicans were slow-walking immigration after the Senate passed a broad bill, the latter possibility appeared the likelier bet. But times have changed. The position House Republicans adopted in the fiscal standoff badly damaged the party's brand. The GOP is reeling, searching desperately for a way to turn things around. That means Boehner, too, must look for ways to repair the damage.

And that's where immigration comes in. Even before the government shutdown showdown, a vocal part of the GOP (think Sen. John McCain) had been talking up the urgent need to do immigration reform or risk further alienating Hispanic voters. Now, amid hard times for the party driven by deeper skepticism from Democrats, independents and even some Republicans following the fiscal standoff, the political imperative is arguably even stronger.

The policy imperative already exists for some House Republicans -- perhaps enough of them that if Boehner allowed a vote, reform of some type could pass with a majority of House Democrats and a minority of House Republicans, as did last week's deal to end the government shutdown and raise the debt ceiling. (What specifically could pass and whether Obama could accept it is another question.)

What's not clear is whether Boehner would be willing to chart a path with less than majority GOP support again so soon after the last time and without his back against the wall as it was in the fiscal standoff.

This much we know: The White House and Senate Democrats will **keep applying pressure** on Boehner to act on immigration. Obama's planned remarks are the latest example of his plan. The speaker will be feeling external and internal pressure to move ahead on immigration.

But he will also feel pressure from conservatives to oppose it. Here's the thing, though: Boehner listened to the right flank of his conference in the fiscal fight, and that path was politically destructive for his party. That's enough to believe he will at least entertain the possibility of tuning the hard-liners out a bit more this time around.

**Nanotechnology faces massive political resistance**

**FI 06** (Foresight Institute, “Controversy over proposed U.S. nanotech regulatory legislation”, 1/20/06, <http://www.foresight.org/nanodot/?p=2148>)//AS

A **prominent new** [**report on nanoparticle safety**](http://www.wilsoncenter.org/index.cfm?fuseaction=news.item&news_id=165552) **issues** from the Woodrow Wilson International Center for Scholars **is generating a bit of controversy.** Author J. Clarence Davies, a **former EPA Administrator, advocates new** federal **legislation,** while others see the situation differently. From a [Chicago Tribune article](http://www.chicagotribune.com/technology/local/chi-0601130251jan13%2C1%2C2210881.story?coll=chi-technologylocal-hed):¶ “Davies said that because nanoparticles behave differently than traditional materials, **they pose a regulatory dilemma** that would best be solved through new federal legislation. While **enacting a nanotech regulation act would be difficult**, Davies said it should be attempted.¶ ” ‘The **political obstacles to passing new legislation are very large**,’ Davies said in his report, ‘though not impossible, and the drawbacks of trying to fit [nanotech] under existing laws make the attempt worthwhile.’

**Immigration reform is key to a housing recovery – stops economic collapse**

**Fitz, 13** - Director of Immigration Policy, and Oakford, Research Assistant with the Economic and Immigration Policy teams at the Center for American Progress,

(Marshall and Patrick, “The Price of Inaction on Immigration Reform Is Too High,” 7/12, http://www.americanprogress.org/issues/immigration/news/2013/07/12/69398/the-price-of-inaction-on-immigration-reform-is-too-high/)

As the House of Representatives mulls over whether to move forward on immigration reform legislation, one point should be front and center in the debate: Maintaining the status quo is not cost neutral. Every day that Congress fails to pass immigration reform that enables the 11 million undocumented immigrants to earn legal status and citizenship is both a lost economic opportunity and a cost to all Americans.

Last month the Senate passed immigration reform legislation by a bipartisan vote of 68-32. Numerous studies and the nonpartisan Congressional Budget Office found that the Senate’s bill would lead to significant economic growth as immigrants fully enter into our society and economy. Over the next 10 years, the Border Security, Economic Opportunity, and Immigration Modernization Act, S. 744, would increase our gross domestic product, or GDP, by 3.3 percent and would raise the wages of all Americans by a cumulative $470 billion, while creating on average 121,000 jobs each year.

In other words, if the House of Representatives fails to pass immigration reform, our country will forgo significant gains to our economy. Not only would it leave these gains behind, but the House also would guarantee that the United States continues to experience significant financial losses each year as a result of a broken immigration system. When these funds are lost, it is a loss to our local communities, our children’s education, and the retirement benefits of American retirees.

Two examples of the financial losses that result from maintaining the status quo are the underground labor force and diminished demand and consumption in the housing market.

The underground labor force

Throughout the debate over immigration reform, many people have described the undocumented population as “aspiring Americans living in the shadows.” This phrasing is not only poetic, but it also describes this population’s fear of deportation and accurately describes how these immigrants are marginalized from the formal economy. Our current broken immigration system creates shadow economies where millions of people live and work.

There are currently an estimated 8 million undocumented immigrants working in the United States, which is more than 5 percent of the American workforce. With no means to work legally under current law, it is no surprise that the Social Security Administration estimates that close to two-thirds of these immigrants work in an underground labor market where neither they nor their employers are able to legally declare their earnings or pay their payroll taxes. With only one-third of unauthorized immigrants working in the formal economy and contributing about $12 billion in payroll taxes each year, we estimate that the United States loses around $20 billion in payroll tax revenue each year. Given that the Social Security Administration already pays out more in retirement benefits than it receives in taxes, this lost revenue would go a long way toward funding the retirement benefits of Americans across the country.

The housing market

In addition to pushing immigrants into an underground economy, our broken immigration system has kept millions of people from fully participating in their local communities and economies. This is perhaps most evident in the context of the housing market.

Research by the Pew Hispanic Center found that just 35 percent of unauthorized immigrant households owned their own homes, compared to the 66 percent of naturalized-citizen homeowners. This low rate of homeownership among undocumented immigrants is not surprising, given that 18 percent of them move each year either out of fear of deportation or an inability to find stable jobs because of their lack of status, compared to just 10 percent of immigrants with legal status.

Over the past two decades, immigrants have contributed significantly to the health of our country’s housing market. Between 2000 and 2010 immigrants accounted for 40 percent of the growth in homeownership, and this trend is projected to continue through the next decade. But local communities stand to benefit significantly more if the purchasing power of undocumented immigrants is unleashed through reform that normalizes their immigration status. Simply put, our broken immigration system stifles immigrants’ natural tendency to purchase homes and contribute to our economy.

Rebounding housing markets—specifically, increased homeownership—is crucial to local communities’ recovery from the Great Recession. At the most basic level, homebuyers spur economic growth through all of the transactions and consumption associated with their purchases. The National Association of Realtors estimates that an average of $60,000 is spent in associated purchases—for example, the cost of movers—when a home is bought. In addition to the consumption associated with buying a home, research has found that immigrant homeownership increases the property values of all homeowners and subsequently leads to greater property tax revenues for communities. All homeowners win when home prices rise.

If undocumented immigrants were provided legal status and were able to become full members of our society, many of them would decide to purchase homes, similar to their legal counterparts. This would mean that immigrants would settle down in communities all across the country, buy homes, and invest in their communities, contributing greatly to local economies.

Conclusion

Last month the Senate took a giant step toward reaping the economic benefits of immigration reform. The potential to add billions of dollars to our economy should in and of itself be sufficient motivation to spur the House of Representatives to act. But if not, the House at a minimum must understand that a vote for the status quo is a vote for continuing the financial losses that burden our country.

**Extinction**

**Auslin 9**

(Michael, Resident Scholar – American Enterprise Institute, and Desmond Lachman – Resident Fellow – American Enterprise Institute, “The Global Economy Unravels”, Forbes, 3-6, http://www.aei.org/article/100187)

What do these trends mean in the short and medium term? The Great Depression showed how social and **global chaos** followed hard on economic collapse. The mere fact that parliaments across the globe, from America to Japan, are unable to make responsible, economically sound recovery plans suggests that they do not know what to do and are simply hoping for the least disruption. Equally worrisome is the adoption of more statist economic programs around the globe, and the concurrent decline of trust in free-market systems. The threat of instability is a pressing concern. China, until last year the world's fastest growing economy, just reported that 20 million migrant laborers lost their jobs. Even in the flush times of recent years, China faced upward of 70,000 labor uprisings a year. A sustained downturn poses grave and possibly immediate threats to Chinese internal stability. The regime in Beijing may be faced with a choice of repressing its own people or diverting their energies outward, leading to conflict with China's neighbors. Russia, an oil state completely dependent on energy sales, has had to put down riots in its Far East as well as in downtown Moscow. Vladimir Putin's rule has been predicated on squeezing civil liberties while providing economic largesse. If that devil's bargain falls apart, then wide-scale repression inside Russia, along with a continuing threatening posture toward Russia's neighbors, is likely. Even apparently stable societies face increasing risk and the threat of internal or possibly external conflict. As Japan's exports have plummeted by nearly 50%, one-third of the country's prefectures have passed emergency economic stabilization plans. Hundreds of thousands of temporary employees hired during the first part of this decade are being laid off. Spain's unemployment rate is expected to climb to nearly 20% by the end of 2010; Spanish unions are already protesting the lack of jobs, and the specter of violence, as occurred in the 1980s, is haunting the country. Meanwhile, in Greece, workers have already taken to the streets. Europe as a whole will face dangerously increasing tensions between native citizens and immigrants, largely from poorer Muslim nations, who have increased the labor pool in the past several decades. Spain has absorbed five million immigrants since 1999, while nearly 9% of Germany's residents have foreign citizenship, including almost 2 million Turks. The xenophobic labor strikes in the U.K. do not bode well for the rest of Europe. A prolonged global downturn, let alone a collapse, would **dramatically raise tensions** inside these countries. Couple that with possible protectionist legislation in the United States, unresolved ethnic and territorial disputes in **all regions of the globe** and a loss of confidence that world leaders actually know what they are doing. The result may be a series of small explosions that coalesce **into a big bang**.

**1NC specification**

**Interpretation- the affirmative must state what nanotechnology they use**

**Specifying is key – multifaceted nature of nanotechnology uniquely overstretches the negative research burden and destroys depth**

**Ramsden 09** – Professor of Nanotechnology Microsystems, Chair of Nanotechnology and Director of Research for Bionanotechnology at Cranfield University (Jeremy, “Nanotechnology,” http://www.ebookbyte.com/admin/upload/Electrical%20Engineering/Nano%20Technology%20(www.eBookByte.com).pdf)//VP

One should not underestimate the multidisciplinary nature of nanotechnology. This forces researchers to adopt a manner of working more familiar to scientists in the 19th century than in the 21st. Many active fields in nanotechnology research demand an understanding of diverse areas of science. Sometime this problem is solved by assembling teams of researches but members of the team still need to be able to effectively communicate with one another. An inevitable consequence of this multidisciplinarity is that the range of material that needs to be covered is rather large. As a result, some topics have had to be dealt with rather sketchily in order to keep the size of this book within reasonable bounds, but I hope I may be at least partly excused for this by the continuing rapid evolution of nanotechnology, which in many cases would make additional details superfluous since their relevance is likely to be soon superseded. Fundamental discoveries will doubtless continue to be made in the realm of a very small – and given the closeness of discoveries to technology in this field, in many cases they will doubtless be rapidly developed into useful products.

**Defining nanotechnology is a prerequisite to solvency- means they cant solve, vote neg on presumption**

**Plan text is key – we can only see if the plan affirms the resolution if we know what the plan does. It is impossible to disprove them meeting the resolution without a coherent plan**

**1NC t**

**A. Interpretation - Engagement is the attempt to influence the political behavior of a state by increasing contacts with that state – economic engagement means using exclusively economic contacts like trade, loans and grants**

**Resnik, 1** – Assistant Professor of Political Science at Yeshiva University (Evan, Journal of International Affairs, “Defining Engagement” v54, n2, political science complete)

A REFINED DEFINITION OF ENGAGEMENT

In order to establish a more effective framework for dealing with unsavory regimes, I propose that we define engagement as the attempt to influence the political behavior of a target state through the comprehensive establishment and enhancement of contacts with that state across multiple issue-areas (i.e. diplomatic, military, economic, cultural). The following is a brief list of the specific forms that such contacts might include:

DIPLOMATIC CONTACTS

Extension of diplomatic recognition; normalization of diplomatic relations

Promotion of target-state membership in international institutions and regimes

Summit meetings and other visits by the head of state and other senior government officials of sender state to target state and vice-versa

MILITARY CONTACTS

Visits of senior military officials of the sender state to the target state and vice-versa

Arms transfers

Military aid and cooperation

Military exchange and training programs

Confidence and security-building measures

Intelligence sharing

ECONOMIC CONTACTS

Trade agreements and promotion

Foreign economic and humanitarian aid in the form of loans and/or grants

CULTURAL CONTACTS

Cultural treaties

Inauguration of travel and tourism links

Sport, artistic and academic exchanges(n25)

Engagement is an iterated process in which the sender and target state develop a relationship of increasing interdependence, culminating in the endpoint of "normalized relations" characterized by a high level of interactions across multiple domains. Engagement is a quintessential exchange relationship: the target state wants the prestige and material resources that would accrue to it from increased contacts with the sender state, while the sender state seeks to modify the domestic and/or foreign policy behavior of the target state. This deductive logic could adopt a number of different forms or strategies when deployed in practice.(n26) For instance, individual contacts can be established by the sender state at either a low or a high level of conditionality.(n27) Additionally, the sender state can achieve its objectives using engagement through any one of the following causal processes: by directly modifying the behavior of the target regime; by manipulating or reinforcing the target states' domestic balance of political power between competing factions that advocate divergent policies; or by shifting preferences at the grassroots level in the hope that this will precipitate political change from below within the target state.

This definition implies that three necessary conditions must hold for engagement to constitute an effective foreign policy instrument. First, the overall magnitude of contacts between the sender and target states must initially be low. If two states are already bound by dense contacts in multiple domains (i.e., are already in a highly interdependent relationship), engagement loses its impact as an effective policy tool. Hence, one could not reasonably invoke the possibility of the US engaging Canada or Japan in order to effect a change in either country's political behavior. Second, the material or prestige needs of the target state must be significant, as engagement derives its power from the promise that it can fulfill those needs. The greater the needs of the target state, the more amenable to engagement it is likely to be. For example, North Korea's receptivity to engagement by the US dramatically increased in the wake of the demise of its chief patron, the Soviet Union, and the near-total collapse of its national economy.(n28)

Third, the target state must perceive the engager and the international order it represents as a potential source of the material or prestige resources it desires. This means that autarkic, revolutionary and unlimited regimes which eschew the norms and institutions of the prevailing order, such as Stalin's Soviet Union or Hitler's Germany, will not be seduced by the potential benefits of engagement.

This reformulated conceptualization avoids the pitfalls of prevailing scholarly conceptions of engagement. It considers the policy as a set of means rather than ends, does not delimit the types of states that can either engage or be engaged, explicitly encompasses contacts in multiple issue-areas, allows for the existence of multiple objectives in any given instance of engagement and, as will be shown below, permits the elucidation of multiple types of positive sanctions.

**B. Violation – the affirmative uses non-economic instruments**

**C. Voting issue –**

**1. limits – they explode the topic – blurring the lines between economic and other forms of engagement makes** any positive interaction with another country **topical. It’s impossible to predict or prepare**

**2. negative ground – the economic limit is vital to critiques of economics, trade disads, and non-economic counterplans**

**3. precision – it’s key to effective policy analysis**

**Resnik, 1** – Assistant Professor of Political Science at Yeshiva University (Evan, Journal of International Affairs, “Defining Engagement” v54, n2, political science complete)

In matters of national security, establishing a clear definition of terms is a precondition for effective policymaking. Decisionmakers who invoke critical terms in an erratic, ad hoc fashion risk alienating their constituencies. They also risk exacerbating misperceptions and hostility among those the policies target. Scholars who commit the same error undercut their ability to conduct valuable empirical research. Hence, if scholars and policymakers fail rigorously to define "engagement," they undermine the ability to build an effective foreign policy.

The refined definition I propose as a substitute for existing descriptions of engagement is different in two important ways: First, it clarifies the menu of choices available for policymakers by allowing engagement to be distinguished from related approaches such as appeasement, containment and isolation. Second, it lays the groundwork for systematic and objective research on historical cases of engagement in order to discern the conditions under which it can be used effectively. Such research will, in turn, help policymakers acquire the information necessary to better manage the rogue states of the 21st century.

**1NC k**

**The utopian neoliberal discourse of nanotech glosses over the inherent risks of nanotech - risks environmental catastrophe, intergenerational inequality, and destroys democracy**

**Rudd, 09** - Jeffery Rudd is a lawyer who is now a doctoral student in Environmental Studies at the University of Wisconsin (“U.S. nanotechnology policy and the decay of environmental law, 1980 – 2005”, ProQuest, UMI Dissertations Publishing, 2009. 3399926,Portions of this dissertation are modified from previous publications in and reprinted with the permission of the Columbia Journal of Environmental Law, Ecology Law Quarterly, and the William and Mary Environmental Law and Policy Review. The preparation and writing of this dissertation was supported in part by National Science Foundation grant no. DMR0425880.)//RJ

This dissertation analyzes institutional and ideological changes occurring since the Environmental Era supporting its thesis that neoliberalism's economic logic has transformed environmental law and eroded its normative authority to protect humans and the environment from me risks of economic development. Chapter 1 illustrates how institutions resting beneath the surface of environmental law combined with political shifts toward neoliberalism to undercut legal protections for health and the environment. The legal process school's "institutional competence" idea, born during the New Deal, produced administrative standards of technical expertise and political independence that evolved to undermine Environmental Era visions of a fundamental normative shift in the exercise of political authority over public policy. Supreme Court decisions in Vermont Yankee and Baltimore Gas expanded regulatory agencies' authority over the role of science in environmental law to the detriment of normative concerns. The Court's Chadha and Chevron decisions insulated administrative rulemaking from meaningful deliberative adjustment. Institutional competence themes of economic efficiency and rational order combined with regulatory agencies' broad authority to support the gradual domination of neoliberalism's economic logic over the environmental regulatory regime. Chapter 2 analyzes the institutional evolution of nanotechnology policy in the United States between the late 1980s and 2003. Nanotechnology is the manipulation of matter on an Id. at 703. 38 atomic or near-atomic scale to produce new materials and devices. The policy's primary legal institutions are the National Nanotechnology Initiative ("NNI") and the 21st Century Nanotechnology Research and Development Act200 ("NRDA"). **Economic logic drove the genesis of nanotechnology policy, contributing subtly to the erosion of environmental law's normative authority**. Congress failed to ensure that environmental law would adequately protect humans and the environment from the risks nanotechnology posed to humans and the environment. Nanotechnology policy developed at odds with sustainable development ideals of intergenerational equity, environmental protection, and deliberative democratic governance. Chapter 3 takes a closer look at the discourse contained in government reports that drove the genesis of nanotechnology policy. It shows how an **insulated group of like-minded individuals** may produce a one-sided view of the risks or benefits of a new technology. The reports' economic discourse helps explain Congress's failure to ensure that nanotechnology policy adequately protected humans and the environment. The discourse reflects a system of beliefs about nanotechnology that resist recognizing the potential for the technology to pose significant risks to society and the environment. The reports' Utopian conception of nanotechnology lacked space for a reasonable portrayal of its risks, subtly devaluing concerns about health and environmental protections. The policy discourse also undercut the force of environmental laws designed to integrate the protection of human health and the environment with the commercialization of new technologies. 39 Chapter 4 analyzes the institutional evolution of the Toxic Substance Control Act 901 ("TSCA") to integrate the first chapter's overarching discussion of environmental law's transformation with subsequent chapters' analysis of nanotechnology policy. It continues the third chapter's focus on power over information to illuminate differences between neoliberalism and sustainable development. It describes TSCA's transformation from a law intended to protect public health and the environment into a symbol of the market's power over the implementation of environmental legislation. It compares the relative costs of risk-related information among government, industry, and the public and concludes that industry's low costs of information allow it to dominate administrative decision-making. This institutional arrangement undercuts transparency and weakens the environmental regulatory regime, forcing the Environmental Protection Agency's ("EPA") to adopt deregulatory or voluntary compliance policies. The chapter concludes with a proposal to amend TSCA with regulatory penalty default rules that lower the EPA's information and litigation costs, create incentives for industry to share riskrelated information, and enhance the EPA's political accountability

**US-Mexican S&T cooperation is militarized – nanotech cooperation occurs through FUMEC – which operates on behalf of Sandia National Labs and wants cooperation for weapons development. Commercial nanotech development in Mexico exists as a testing ground for militarization**

**Foladori, 11** – 1ac author and Profesor de la Universidad Autónoma de Zacatecas (Guillermo, “U.S. Military Involvement in Mexican Science and Technology” 11/5, <http://www.globalresearch.ca/u-s-military-involvement-in-mexican-science-and-technology/27476>) **MEMS = Microelectrical Mechanical Systems; NEMS=Nanoelectrical Mechanical Systems, SNL = Sandia National Labs**

There exists a long history of scientific collaboration between Mexico and the USA. In the last decade, **there has been an increase in the participation of Mexican** and Latin American **scientists in research projects shared with U.S. military laboratories** and / or enterprises.

 In April 2004, the US Marines and Air Force held a forum in Washington, D.C., entitled the Latin America Science & Technology Forum, with the stated aim “to increase the U.S. leadership’s awareness of the progress of S&T in Latin America” (ONRG, 2004). **Top representatives of civilian S&T institutions from** Argentina, Chile and **Mexico** (including the Director of Scientific Research of CONACYT) **presented the “state of the art” of S&T** in their respective countries. These collaborative contacts were reinforced with official visits to Latin American countries. **The US Armed Forces interests were explicit: to draw into its sphere of influence researchers, institutions and businesses from Latin America** and the rest of the world.

 The US Armed Forces have at least three branches which finance scientific research in public and private universities and research centers of various countries; the Army, the Navy and the Air Force. These three arms work together through International Technology Centers, organized as the ITC-Atlantic, ITC-Pacific, and in 2004, the newly-formed ITC-Americas in Santiago de Chile, which covers all of the Americas and the Caribbean, including Canada (U.S. Army ITC-Atlantic, n/d). The goal of the ITC-Americas is:

to foster cooperative relationships between the U.S. Army and private sector, university, and civilian government research and development (R&D) entities that result in leading-edge scientific and technological cooperation that benefit the civilian institutions and support the U.S. Army’s current programs and future goals (ID U.S. ARD&EC, 2004).

**The incorporation of Mexican researchers into U.S. military projects was facilitated through** various means:

· The North American Free Trade Agreement (NAFTA) facilitated the migration of Mexican scientists to the USA with the creation of special temporary visas (TN1).

· The existence of specific projects of the U.S. army to acquire talent in high-technology areas. The Navy, in cooperation with the Air Force, held three Latin American workshops in different countries on one of the principal topics of interest of the U.S. Department of Defense: multifunctional materials (NMAB, Chapter 3, 2003). The second of these workshops was held in Huatulco, Oaxaca, Mexico, in 2004 (Foladori, 2008).

· SPPNA (Security and Prosperity Partnership of North America): **an agreement signed between the three governments partners in NAFTA to foster economic development** within the framework of security and military necessities. This agreement provided the cover, within the Merida Initiative, under which the FBI, CIA, DEA and other U.S. intelligence agencies operate freely within Mexican territory under the guise of fighting narcotrafficking.[2] Also, **under the SPPNA agreements, bilateral scientific research projects were established, such as the Bi-National Sustainability Laboratory** (BNSL) **under the auspices of the Sandia National Laboratories** (SNL), a military research facility located in New Mexico, whose Mexican counterpart is CONACYT, the official S&T policy institution in México (SER, 2003: 13).

· **Mexican S&T policy has undergone a substantial shift** over the past decade, **reorienting its philosophy and financing** toward the incorporation of private business in practically all investigative financing. **The need for business partners to launch projects and the value placed on obtaining research projects linked to networks with international agreements has resulted in a desperate race by researchers to obtain external support of any kind.**

**These factors favored the incorporation of CONACYT and some Mexican scientists and institutions into U.S. military projects** where there were neither precedents nor debate in Mexico.

 There is no database listing the various research projects in which Mexicans are working alongside American military institutions, although many of these can be found on the pages of the CONACYT website; but neither would it be appropriate here to highlight individual examples. Rather, it serves our purpose to consider institutional cases and themes, such as the most ambitious project connected to the top Mexican S&T institution, CONACYT (equivalent of USA National Science Foundation), and an American military institution – the Sandia National Laboratories via the Bi-National Sustainability Laboratory (BNSL); and a theme of great importance: MEMS/NEMS technology, a high-technology field and a paradigmatic example of dual-use technology; and, also, for the rapid development that it has had in Mexico during the first decade of the 21st Century.

2. The Interests of the Sandia Laboratories in the Bi-National Economic Development of the Mexico-USA Border and in the Development of MEMS/NEMS

The American military’s Sandia National Laboratories (SNL) operate under the GOCO (government-owned / contractor-operated) framework, based on state property with private administration. The first GOCO was the Alamos National Laboratory, operated by the University of California and a part of the Manhattan Project, which created the atomic bomb during the Second World War. The SNL has passed from various administrations to its current operator, Lockheed-Martin. Lockheed-Martin is the world’s largest arms producer, with more than 70% of its earnings coming from arms sales. The SNL has an annual budget of around $2.5-billion, of which some 60% is supplied by the DoE (Department of Energy) (SNL, n/d).

Beginning the nineties, **the SNL began to intensively research** MEMS / NEMS (micro / **nano electromechanical systems**). They also initiated research lines related to national security, such as mechanisms to counteract chemical agents, systems for the detection of epidemics, high-temperature ceramics for space vehicles, Kevlar gloves made of carbon used in the wars in Iraq and Afghanistan, and flash-bang grenade technology. The SNL have been the focus of intense criticism by social organizations on the issue of nuclear testing in the state of New Mexico.[3]

In 1998, a high-ranking Reagan administration officer created and directed the Advanced Concept Group (ACG) inside the SNL, with the goal of confronting problems of terrorism and internal security through the socio-economic development of the Mexico-USA border through high-technology parks. This was far from a new idea. From the signing of the NAFTA accords, various bi-national political agreements were signed with the border states of the U.S. and Mexico to foster economic development in a coordinated manner. The installation of the maquiladoras on the Mexican side of the border is part of these agreements. The specificity of **the SNL’s proposal was to support the creation and research in high technology**, something the maquiladoras do not provide. **In order to achieve this purpose a Mexican counterpart was needed.** **FUMEC** (Mexico-United States Science Foundation), a bi-national non-profit institution oriented to the development of S&T, **served making the connections with the Mexican government and supported the initiative to create the Bi-National Sustainability Laboratory** (BNSL).

 The BNSL began operations in 2003, although it was officially launched in 2005. It is “a bi-national non-profit organization that creates and promotes technology-based businesses along the Mexico-United States border, whether these are recently created, medium- or small-scale, or even large, well-established companies” (BNSL, n/d). At its inauguration, the SNL Vice-President said: “This will be a wonderful opportunity for collaborative technical efforts to enhance border security … This is a perfect opportunity to follow up on work with Canada and Mexico to foster a continental approach in dealing with terrorism” (Eurekalert, 2005). Although named “Laboratory”, the BNSL is a commercialization of technology bureau, linked with many S&T research centers in USA and México.

 The agreement for the implementation of the BNSL was driven on the American side by the Department of Commerce and the Agency of Economic Development, the Department of Economic Development of the state of New Mexico, and by the SNL, which came up with the plan. The Mexican counterpart is CONACYT, under the direction of then-President of Mexico, Vicente Fox. **The negotiations were managed by FUMEC** (Eurekalert, 2005). **Presently, the BNSL works in the area of MEMS / NEMS; clean fuels and nanomaterials, and environmental technologies** (BNSL, n/d).

**One of the key themes of the BNSL is the development of MEMS / NEMS. This theme is a significant part of the work done at the SNL and of great military interest to the U.S. government**. **MEMS / NEMS are miniscule electronic machines built into semi conductive materials** with multiple uses. The automobile industry is one of the top clients, employing MEMS in everything from air bag sensors to tire pressure sensors. They are also used in printers, computers and wireless networking systems, aero-navigation, video games, health, energy and many other industries. In 2009 the world market in MEMS was estimated at $7.6-billion.

The first commercial MEMS appeared in computers and ink-jet printers in the 1980s. From the beginning of the 1990s, the U.S. government invested significant funds for MEMS research for military application. The AFOSR (Air Force Office of Scientific Research) and DARPA (Defense Advanced Research Projects Agency) financed projects in military laboratories in this field. The SNL are one of the first to receive considerable funding for MEMS research, and by the end of the decade of the 1990s they had developed technical processes to produce MEMS layers (“SUMMIT” technology). A DoD report estimated that in 1995, the government invested 35 millions of dollars for MEMS R&D, with 30 of those directed to military institutions (ODDRE, 1995).

**Their reduced size makes MEMS of strategic importance in military industries; especially for the production of smart / precision weapon**s. In 2001, the Forbes website noted that the U.S. government had invested some $200-million in MEMS annually, through two agencies: DARPA and SNL. The SNL Director said: “anything that’s good for MEMS is good for national defense,” showing the strategic military importance of MEMS (Forbes, 2001).

The boost that military industry gave to MEMS has been an important accelerant in diversifying the technology for civilian use. One director linked to DARPA noted:

In 1992, there was little industry involvement and virtually no MEMS fabrication infrastructure anywhere in the world. DARPA’s MEMS investments have generated that infrastructure (cited by Rhea, 2000).

MEMS are a dual-use technology, and although military purchases of the technology are less than civilian, there are two factors of military industry that have a civil sector impact.

The first is in efficiency, since military industry is not guided by rate of profit but rather high performance. The second is maturity, which in the civil sector implies stagnation or fall in profits, but in the military sphere has no equivalent effect on research.

At the time, civilian industry was important for the military sector in relation to three factors. One is extended testing across diverse sectors. The Director of the Microsystems Science, Technology, and Components Center at the SNL said:

**Before we can use** MEMS and **microsystems in critical weapons systems, it must be shown they are manufacturable and reliable. The best way to demonstrate this is to commercialize them and use them in everyday products** (SNL, 2001).

 Another factor is the elaboration of large-scale production infrastructure, although **the ultimate objective remained** in **the production of weaponry**. This was highlighted by the administrator of the SNL’s MEMS project:

Ultimately, **Sandia wants to use MEMS in weapons systems. But Sandia can’t manufacture all the necessary parts itself, so the lab is offering its own MEMS technology and fabrication services to the industry, hoping to seed the MEMS market** …. (Matsumoto, 1999).

n 1998, the Sandia Science & Technology Park was created, a facility associated with businesses involved in the transference of technology. In 2001, an agreement was made with Arresta for the production and sale of MEMS – with the SUMMiT technology developed at SNL (SNL, 2001). A permanent program of courses and training in SUMMiT technology for commercial use was established, known as SAMPLES (McBrayer, 2000); and the dialogue began with FUMEC to initiate the MEMS project in Mexico.

 The third factor is the reduction of costs. In an article from a 2003 edition of the magazine Military & Aerospace Electronics we note:

**Military developers** and contractors also **are looking to reduce costs by offering some of the evolving MEMS technology to commercial users**, such as the automobile industry, essentially completing the development circle, as some MEMS technology came from that sector originally. “We have make sure the military application of the technology isn’t proliferated, of course, but in the auto industry the accuracy they are looking for is nowhere near what the military requires,” Panhorst [manager for MEMS programs at Picatinny Army facility] says of the MEMS IMU (Wilson, 2003).

With these synergies between civil and military industries, the SNL is driving the budding MEMS field via the Bi-National Sustainability Laboratory.

**Vote neg to accept an ethic of care and endorse a policy of sustainable development that recognizes the value of public deliberation free from neoliberal assumptions**

**Rudd, 09** - Jeffery Rudd is a lawyer who is now a doctoral student in Environmental Studies at the University of Wisconsin (“U.S. nanotechnology policy and the decay of environmental law, 1980 – 2005”, ProQuest, UMI Dissertations Publishing, 2009. 3399926,Portions of this dissertation are modified from previous publications in and reprinted with the permission of the Columbia Journal of Environmental Law, Ecology Law Quarterly, and the William and Mary Environmental Law and Policy Review. The preparation and writing of this dissertation was supported in part by National Science Foundation grant no. DMR0425880.)//RJ

**The "strong version"114 of sustainable development**—referred to in this dissertation simply as "sustainability" or "sustainable development"—**differs sharply from the weak, neoliberal version**. The strong version requires that policymakers use law to protect and restore ecological systems to provide a foundation for future economic and social sustainability.115 It also requires policymakers to specify "an appropriate degree of risk aversion to adopt in response to scientific uncertainty."116 It embraces the use of law to "channel"117 the development and commercialization of technology innovations to protect and improve the environment and public health. This "precautionary" approach to the development and implementation of economic policy requires legislative protection from the health and environmental risks of new iliId (arguing that public law should be used to guide the actions of government and private parties to achieve sustainability, but that it should not abandon all together law's substantive authority to mandate sustainable development goals). technologies.119 Langdon Winner suggested that Congress adopt such an approach for nanotechnology policy. He argued that Congress should use law to guide nanotechnology's commercial applications and scientific experiments "in a controlled, bounded way rather than simply releasing them into the world and then see what happens." The strong version also includes establishing and enforcing principles of "good 191 governance" at odds with neoliberalism's economic logic. These principles provide the democratic nexus essential to the promulgation of laws and policies that embrace sustainable 199 development's goals of environmental protection and intergenerational equity. **Sustainable development** requires integrated planning across economic, social, and environmental disciplines and democratic debate grounded in public participation.123 It **challenges neoliberalism's economic assumptions about the normative value of efficiency, favoring instead "collective moral decision-making" that selects or rejects particular technologies and values during the 1 94 policymaking process.** Since collective decision-making encourages critical discussion about policy alternatives and goals, neoliberals "avoid the prospect of collective decision-making (2007). The "precautionary principle" is an integral part of international sustainable development law. Id. regarding appropriate types and volumes of environmentally intensive activities for sustainability planning."125 Good governance requires the creation of institutions that produce transparent information about the environmental impacts of political decisions. A critical part of establishing policies that advance sustainability's intergenerational equity and environmental protection norms rests on creating an equitable distribution of power over government's production of information. Good governance institutions aim to eliminate corruption in political decision-making that undercuts public participation, transparency, and environmental 1 1"7 protection. **Collective decision-making processes cut from the deliberative democratic model help ensure that policy makers "look through the eyes of all those affected.**" They also require institutional mechanisms to hold government officials accountable for their decisions and the 1 7Q knowledge claims underlying policies. Accountability "occupies a key normative juncture in the relationship between producers and users of knowledge."130 Thus sustainable development essentially requires that deliberative democratic institutions govern economic development decisions. Such institutions rest on the belief that the). 25 deliberative process aims to discover "substantively right answers" to settle normative disputes.131 Classic republicans postulate that citizens achieve freedom by subordinating "their private interests to the public good through political participation in an ongoing process of collective self-determination." The deliberative process seeks tentative solutions to moral disagreements caused by scarcity, incompatible values, and incomplete understanding.133 It overcomes the limitations of an individual's capacity to identify and understand all information bearing on a particular issue, and it enhances a person's understanding of others' ideas and values.134 1 ^S During the late-1980s, the "deliberative turn" in democratic theory marked the reemergence of deliberation as the essence of democratic governance. The "essential moment" of political decision-making in deliberative democracies is the formation of the collective will through the deliberative process.136 Deliberative democracies consider politics a "reflective form of substantial ethical life" in which members are aware of their dependence on each other and they strive to shape their relations into an association of free and equal participants in the. During "political deliberation, individuals acquire new perspectives not only with respect to possible solutions, but also with respect to their own preferences." We must affirm, at the risk of contradicting a long tradition, that the legitimate law is the result of general deliberation, and not the expression of the [predetermined] general will." Id. at 352. 26 political process.137 Government's institutional structure is amplified beyond neoliberalism's preference for self-regulating markets to create space for "horizontal political will-formation" n o aimed at "solidarity" and concern for the public good. Strong deliberative models locate the public sphere in civil society, encourage discussion about postulated or assumed divisions between the public and private domains, support open discussion of policy agendas, and aim to "bridge the gap" between constitution-making and normal politics by elevating the political status of "ordinary people's everyday deliberations."139 Deliberative democracy requires the justification of political decisions by citizens and their representatives in a political atmosphere based upon conditions of reciprocity, publicity, and accountability. ° The provisional nature of deliberative decisions recognizes that dialogue should continue to amend decisions in light of changing conditions or to correct unjustified decisions. 41 The principle of reciprocity, or "reason-giving," regulates the terms of deliberation to achieve a fair, mutually justifiable and binding exchange of reasons. Public discussion and debate provides citizens and their representatives the opportunity to form and modify their ideas about political issues—preferences are not "prepolitical or static." 3 Participation in the process generates public information about relevant topics, and expands the understanding of such topics and their relevance to policy selection and agenda formation. Government officials who conceal the basis for their decisions or use scientific or economic uncertainty to avoid evaluating the impact of new technologies on human health or the environment violate principles of publicity and accountability.144 **Thus, the strong version of sustainable development advocates a democratic approach to the development of public policy that contradicts important neoliberal assumptions**. It supports a normative, institutional strategy for the integration of economic and environmental policies that challenges neoliberalism's economic logic. It rejects the neoliberal notion that economic efficiency should be the primary goal of public policy and shifts authority over public policymaking from the market to deliberative democratic institutions. Sustainable development also challenges the idea that technology innovations produced by the 'free' market, standing alone, will solve resource scarcity problems. In contrast, it endorses an "**ethic of care**"145 that prioritizes the use of law to protect the environment as the foundation of future economic and social stability. The idea that current generations are at least partially responsible for the wellbeing of future generations supports sustainable development's standard of intergenerational equity. In several important respects, then, sustainable development and neoliberalism represent opposing forces vying for ideological control over the direction of environmental policy.

**1NC cp**

**CP Text: The United States federal government should propose to the International Atomic Energy Agency that international nanofactories be built as specified by the Center for Responsible Nanotechnology. The International Atomic Energy Agency should build these nanofactories and require mutual inspection of all nations’ nanofactories and nanotechnology. The United States federal government should not create any nanotechnology without first consulting the International Atomic Energy Agency.**

**CP solves all of the inevitability claims, BUT the plan destroys the CP. Competition and US hegemonic pursuit of dominance assures a Nano-Race and turns the entire aff**

**Vandermolen, 06** – BS, Louisiana Tech University; MA, Naval War College (Thomas D., Maritime Science and Technology Center, Yokosuka, Japan. He was previously assigned as a student at the Naval War College, Newport Naval Station, Rhode Island, [http://www.airpower.maxwell.af.mil/airchronicles/apj/apj06/fal06/vandermolen.html)//VP](http://www.airpower.maxwell.af.mil/airchronicles/apj/apj06/fal06/vandermolen.html%29//VP)

Two strategic approaches have relevance to international regulation of MNT: a hegemonic regulation imposed on the rest of the world by the United States, or

a cooperative regulation overseen and enforced by an international organization.

In either case, regulation will succeed—if it does—only by removing the majority of reasons nations will have to develop “uncontrolled” MNT. The basic premise in regulation should be to maximize public access to the benefits of MNT while eliminating independent (i.e., unregulated) development by minimizing access to, or interference with, the manufacturing technology itself. Ideally, freely providing the fruits of MNT to the world population will decrease the urge to develop unregulated alternative R&D programs and may simultaneously reduce the impetus for civil and/or resource-related conflicts by virtually eradicating the effects of poverty.35 The Center for Responsible Nanotechnology, a nonprofit think tank “concerned with the major societal and environmental implications of advanced nanotechnology,” has proposed a solution based around a nanofactory, a self-contained, highly secure MM system—in effect a highly advanced NT version of Gershenfeld’s desktop fab-lab apparatus.36 In this strategy, a closely guarded crash development program would be set up as soon as possible to develop the MM expertise required to build a nanofactory. It is essential that the nanofactory be developed before any possible competing MNT R&D program can come to fruition. Nanofactories would then be reproduced and distributed to nations and organizations (at some point possibly even to individuals) around the world, with emphasis placed on the most poverty-stricken regions. This “standard” nanofactory would be the only approved MNT manufacturing apparatus in the world and would even have internal limitations as to what could be constructed (no replicating assemblers, for example, except under very carefully controlled and monitored conditions). The advantages of this strategy are that it would offer a very large carrot—with the stick of regulation—in the form of the nanofactories. They could act as valid tools of humanitarian assistance, as leverage to prevent balking governments from pursuing their own rogue MNT development programs, or even as assurance that citizens’ needs are being met.37 The appeal of (and the demand for) the nanofactories would likely be enormous, particularly if they are produced for personal use. As Gershenfeld has noted about his conceptually similar fab-labs, “The killer app for personal fabrication is fulfilling individual desires rather than merely meeting mass-market needs.”38 By restricting nanofabrication methods to the standard nanofactory alone, the threat of gray-goo replicators would be minimized probably as much as is possible.39 Of course, there are disadvantages and risks in this strategy as well. Although widespread availability of nanofactories may reduce the desire for independent MNT R&D programs, “noncomplying” groups will try to hide their projects, thus making compliance even harder to verify. A significant risk is inherent in distributing the nanofactories; the units will require extensive, built-in security to protect both their inner physical workings and their operating software. Every hacker in the world (not to mention rogue organizations or governments) would be dying to crack nanofactory security. As a possible solution, the nanofactories must be programmed to destroy themselves if any attempt to access the classified areas of the unit occurs. This will lead to many, many broken nanofactories, but since they can be created relatively easily and cheaply, replacing them should not be an issue. In order for this strategy to have a decent chance of working, the United States should not attempt to assume a hegemonist stance and become the sole governing body of this system. Such a strategy would require a US‑only nanofactory development program. Furthermore, US efforts to dominate nanofactory technology will likely result in a “nanofactory race” that the United States could lose. Europe, Japan, Korea, China, and India are all conducting research into nanotechnology.40 However poorly the US national image is perceived throughout the world today, it could grow exponentially worse if the United States emerged as the sole MNT superpower. Therefore, for both technical and diplomatic reasons, the US primacy option is not the best solution. However, the United States should play a major role in establishing an international control organization to formulate and carry out the regulation strategy. Such an organization would have a better chance of actually developing a working nanofactory before competing efforts do so (although maintaining security would be horrendously difficult) as well as encouraging international legitimacy for the nanofactory plan, which in turn would likely result in greater buy-in by the world community. There are already some rumblings of international support for an arms-control-like containment structure for NT. For example, the North Atlantic Treaty Organization’s special report on emerging technologies notes that “the need for control of these new technologies is more important now than in previous times of scientific development.”41

**Unilateral nanotech like the plan causes an arms race and ensures extinction – only CP can solve- every reason why nanotech is bad is a net benefit**

**Treder And Phoenix, 08** – Executive Director of CRN, BS Biology, University of Washington, Research Fellow with the Institute for Ethics and Emerging Technologies, a consultant to the Millennium Project of the American Council for the United Nations University AND CRN’s Director of Research, has studied nanotechnology for more than 15 years. BS, Symbolic Systems, MS, Computer Science, Stanford University (Mike and Chris. Center For Responsible Nanotechnology, “The Need for International Control” <http://www.crnano.org/int_control.htm>)//VP
Overview: International administration appears to be necessary for several reasons. Some of the risks of molecular nanotechnology (MNT) are potentially global in scope. At least one of the sources of risk, the possibility of a nanotech arms race, is explicitly international. Even well-intentioned and well-policed nations cannot always prevent internal terrorism, and companies with strong financial incentive do not always design secure products. Each additional MNT program increases the risk that unrestricted molecular manufacturing will fall into the wrong hands. For all these reasons, it seems best to have a single, trustworthy, international administration imposing tight controls on the technology. However, unless the technology is made widely available for a wide variety of applications and purposes, there will be strong incentive for independent MNT programs. Any successful administration program must satisfy many competing interests. Nanotech problems and nanotech solutions are international. Both nanotech problems and nanotech solutions are international. If MNT goes wrong, some of its problems may be global in scope. Grey goo and military nanobots will not respect national borders. Economic collapse of any large nation will shake all the rest. Likewise, MNT risk prevention must also be global. Programs and policies for reducing poverty must be international. Administration to detect and prevent rogue MNT programs must have global jurisdiction. An accretion of national programs may be able to mitigate some problems and risks, but cannot address all of them. International policies, and international bodies, must be designed and created before molecular manufacturing arrives. Nanotech arms races can only be prevented internationally. Conflict between nations killed millions in the last century. MNT-based conflict could be even worse. Nations attack when they feel threatened by others, or to satisfy internal political pressures including desperate domestic conditions. As discussed on our Dangers page, molecular manufacturing can easily lead to an unstable arms race—a very threatening situation. Even nations that are ostensibly allies may be uneasy about each other's ultimate intentions, and there are many combinations of powerful nations that maintain at best an uneasy truce. Unless nations can find some basis for trusting that MNT won't be used against them in unexpected ways, they will have no choice but to develop defensive, and probably offensive, nanotechnology. International MNT arms control, with strict and trustworthy verification, appears to be the best alternative. Internal politics may drive a nation to war even when this is not a wise course. A nation that is starving may go to war out of desperation, or a single war-minded leader can drag a nation into a pattern of conflict and conquest. MNT can help with one of these problems—the technology can be deployed far faster than humans reproduce, and can alleviate material shortages for at least a few generations. Bad leaders cannot be prevented by technology, but again, the best way of dealing with such situations appears to be an international institution that protects each nation from each other. It will require careful design to implement a system that nations can trust enough not to engage in ultimately suicidal arms races on a national level. But without such a system, arms races and eventual conflict are far too likely. Preventing rogue nanotech requires international effort and cooperation. Unrestricted molecular manufacturing is far too risky, but useful restrictions will require international cooperation. With millions of criminals and thousands of terrorists in the world, immense damage could be done to people and to society. Hackers, even without intending harm, could create a self-replicating device that could do billions of dollars of damage—as software worms and viruses have done. Unfortunately, creating and maintaining useful restrictions is a huge job. Companies with strong incentive to protect their intellectual property have failed. The DVD standard, eBook format, audio watermarking, WAP, and at least one cell phone encryption system have been cracked. A multiplicity of security systems only multiplies the chance that one of them will be broken, removing all restrictions on the technology. The safest course appears to be a single security infrastructure, designed and implemented with a maximum of scrutiny from military, commercial, and private experts, applied to all nanotechnology that could be used to create unrestricted molecular manufacturing systems. A lot would be riding on this system: international arms control, commercial intellectual property control, and the continued ability to innovate without creating unacceptable risk. In the broader picture, independent or rogue nanotechnology programs would have to be discovered and prevented. This requires a body with global jurisdiction, perhaps analogous to the International Atomic Energy Agency.

**mexico**

**Squo solves – work plan to regulate the nanotech industry is already in place**

White House 12 – Executive Office of the President of the United States

(“United States – Mexico High-Level Regulatory Cooperation Council Work Plan”, 2/28/2012, http://www.whitehouse.gov/sites/default/files/omb/oira/irc/united-states-mexico-high-level-regulatory-cooperation-council-work-plan.pdf)//BD

Nanotechnology The fourth item on the HLRCC Work Plan involves the potential alignment of U.S. and ¶ Mexican policy approaches to oversight of applications of nanotechnology and nanomaterials. ¶ The relevant agencies are the Office of Information and Regulatory Affairs (OIRA) and the ¶ National Metrology Centre (CENAM).¶ Description: Mexico and the United States are in the process of developing principles and ¶ approaches to inform government oversight and regulation of nanotechnology applications and ¶ nanomaterials.¶ Objective/Desired Outcome: Share information and develop approaches on foundational ¶ regulatory elements, including terminology/nomenclature, information-gathering, and ¶ approaches to risk assessment and management. Develop initiatives to align regulatory ¶ approaches in specific areas, such that consistency exists for consumers and industry in Mexico ¶ and the United States. Specific Deliverables and Timeline: Specific deliverables identified in the Work Plan include: • The United States will share with Mexico the list of regulators that were involved in the development of the general nanotechnology principles (accomplished by September 2011); • Response of Mexico’s relevant regulators to the U.S. Memorandum on “Policy Principles for the U.S. Decision-making Concerning Regulation and Oversight of Applications of Nanotechnology and Nanomaterials,” of June 9, 2011 (accomplished by October 2011); • Creation of a mechanism for exchanging information between the United States and Mexico on regulatory matters for nanotechnology applications and nanomaterials (accomplished by February 2012); • Share the advances of the Mexican side on potential principles on regulations for nanotechnology applications and nanomaterials (accomplished by February 2012); and • Engage in a dialogue to consider a possible model framework providing key elements and approaches to regulating nanotechnology applications and nanomaterials with respect to potential impacts on the environment, human health, labor, food or agriculture (by February 2013).

**Nanotech is funded under the Fiscal Year 2013 budget
Roco, 12** – American Society of Mechanical Engineers **(**M.C., “National Nanotechnology Investment in the FY 2013 Budget”, 8/19, American Society of Mechanical Engineers.http://www.aaas.org/spp/rd/rdreport2013/13pch23.pdf)//VP

The FY 2013 President’s Request of $1.77 billion for federal investment in nanotechnology is 4.1 percent over the FY 2012 budget estimate of $1.70 billion. Approximately 65 percent of the total NNI funding supports academic research. About 25 percent of NNI funding supports R&D at government laboratories and about 10 percent supports industry R&D, of which about 6 percent is for SBIR/STTR. NNI-sponsored R&D is reported in eight program component areas (PCAs). While fundamental research (PCA 1) remains the largest single NNI investment category, the research on nanodevices and systems (PCA 3) and in nanomanufacturing (PCA 5) would total about the same as PCA 1 under the FY 2013 request. Environmental, health and safety (PCA 7) would have an investment of about $105 million, representing about 6% of total NNI investment. The fastest growing PCAs since 2010 are in the areas of nanomanufacturing (PCA 4) and EHS (PCA 7). The requested nano-EHS (PCA 7) investment in 2013 is almost 20% above 2011 actual spending, without accounting for inflation. This increase is guided by the revised NNI EHS Research Strategy that was released in October 2011 (posted on www.nano.gov). Cumulatively, the NNI agencies have allocated over $650 million to EHS research since 2005, including the requested amounts in the 2013 budget. The PCAs and proposed FY 2013 funding levels across all NNI agencies are as follows: (1) fundamental nanoscale phenomena and processes, $498 million; (2) nanomaterials, $368 million; (3) nanoscale devices and systems, $412 million; (4) instrumentation research, metrology, and standards for nanotechnology, $69.2 million; (5) nanomanufacturing, $89 million; (6) major research facilities and instrumentation acquisition, $190 million; (7) environment, health, and safety (EHS), $105 million; and (8) education and societal dimensions, $34 million. Nanotechnology is partially transitioning its R&D focus from nanoscale components to nanosystems, and from basic research to innovations that support national priorities such as energy, manufacturing, healthcare, and environmental protection (see “Nanotechnology Research Directions for Societal Needs in 2020” (M.C. Roco, C. Mirkin, M. Hersam, eds.), Springer, 2011; available on <http://www.wtec.org/nano2/>).

**Low industry involvement means Latin American nanotech fails**

**Kay et al 09** School of Public Policy, Georgia Institute of Technology; Shapira- Manchester Institute of Innovation Research, Manchester Business School, University of Manchester (Luciano, Philip, “Developing nanotechnology in Latin America”, 02/11/2009, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2988220/#__ffn_sectitle>//VS)

Our findings suggest policy issues and implications for our group of Latin American countries. For example, all four countries present some level of institutional concentration in their research. This is most pronounced in the case of Brazil, which seems to follow a strategy based on national targets rather than international collaboration, as suggested by the implementation of programs aimed at creating national research networks, like the Rede BrasilNano program. The institutional concentration of research is even greater in Uruguay (which is a much smaller country), but in this case it is consistent with its emphasis in regional collaborations and less developed S&T system. Whether greater incentives for international collaboration in nanotechnology research in Latin America are appropriate is an issue that policymakers in these countries may wish to consider.¶ Moreover, we note the weakness of industry involvement in nanotechnology research. For countries like Chile or Uruguay this is perhaps not surprising, given the emerging state of development in their industrial sectors. The weakness of industry involvement is most significant for Brazil (where conglomerates and internatioally oriented companies have emerged in technology and natural resource sectors) and, to less extent, Argentina. Possible explanations for low industry involvement include the still early stage of nanotechnology development in Latin America, the weakness of domestic corporate R&D, the dominance of foreign multi-national branches who draw on their own company rather than local universities for R&D, a general lack of industry awareness of nanotechnology, and bureaucratic barriers faced by industry in working with universities. Whatever the causes, this finding foreshadows weaknesses not only in industry R&D but also in the absorptive capabilities of firms in Latin America to apply nanotechnology applications. In Brazil, given its efforts to develop aerospace, electronics, and other advanced technologies, as well as in the resource-intensive areas of all the countries (such as the prominent minerals, metals, and pulp and paper sectors in Chile) there may be unexploited opportunities for collaborative nanotechnology R&D with industry in nanomaterials and other nanotechnology domains.

**Nanotech laboratories would be bombed by eco-anarchist groups, turns the case**

**The Verge, 12** – National News Report Service (“Eco-anarchists fight nanotechnology research with bombs”, The Verge, 9/2/2012, http://www.theverge.com/2012/9/2/3285426/mexico-its-nanotechnology-eco-anarchists-bombs)//EX

**Major advances in technology often stir opposition**, and as Nature reports, nanotechnology is no exception: an eco-anarchist group known as Individuals Tending Towards Savagery (ITS) has been responsible for **several bombings at prominent nanotechnology universities** in Mexico over the past two years. The group reportedly **looks to prevent "nanocontamination"** and agrees with author Derrik Jensen's view that "industrial civilization is **responsible for environmental destruction and must be dismantled."** Nanotechnology concerns are a global issue — in 2010 another group attempted to bomb IBM's nanotechnology lab in Switzerland — but Nature explores why Mexico appears to be the epicenter of the violence. Mexico began investing heavily in nanotechnology in 2002 in an attempt to develop the country's economy, and Nature speculates that concern over the environmental and health impacts of nanotechnology combined with growing violence and political upheaval in the country may have lead to the inception of groups like the ITS. Nature says that while other environmental activist groups like the Canada-based ETC condemn the violence, they're worried about even more elaborate consequences, like a future in which "the merger of living and non-living matter will result in hybrid organisms and products that are not easy to control." Regardless of whether the violence continues to spread, universities have instituted new stringent security measures to combat the attacks, and researchers told Nature that they will not be discouraged from their work.

**Disease spread is inevitable.**

**Bower & Chalk ’03** (Jennifer Bower, Science & Tech Policy Analyst, Peter Chalk, Political Scientist, “Vectors Without Borders,” summer 2003,

http://www.rand.org/publications/randreview/issues/summer2003/vectors.html)

In the latter half of the 20th century, almost 30 new human diseases were identified. The spread of several of them has been expedited by the growth of antibiotic and drug resistance. Globalization, modern medical practices, urbanization, climate change, sexual promiscuity, intravenous drug use, and acts of bioterrorism further increase the likelihood that people will come into contact with potentially fatal diseases.

**No extinction**

**Posner 5**—Senior Lecturer, U Chicago Law. Judge on the US Court of Appeals 7th Circuit. AB from Yale and LLB from Harvard. (Richard, Catastrophe, http://goliath.ecnext.com/coms2/gi\_0199-4150331/Catastrophe-the-dozen-most-significant.html)

Yet the fact that Homo sapiens has managed to survive every disease to assail it in the 200,000 years or so of its existence is a source of genuine comfort, at least if the focus is on extinction events. There have been enormously destructive plagues, such as the Black Death, smallpox, and now AIDS, but none has come close to destroying the entire human race. **There is a biological reason**. Natural selection favors germs of limited lethality; they are fitter in an evolutionary sense because their genes are more likely to be spread if the germs do not kill their hosts too quickly. The AIDS virus is an example of a lethal virus, wholly natural, that by lying dormant yet infectious in its host for years maximizes its spread. Yet there is no danger that AIDS will destroy the entire human race. The likelihood of a natural pandemic that would cause the extinction of the human race is probably even less today than in the past (except in prehistoric times, when people lived in small, scattered bands, which would have limited the spread of disease), despite wider human contacts that make it more difficult to localize an infectious disease.

**Patenting flaws take out solvency**

**Foladori 06** (professor in the Doctoral Program on Development Studies, Universidad ¶ Autónoma de Zacatecas, México, Guillermo, “Nanotechnology in Latin America ¶ at the Crossroads”, [http://www.estudiosdeldesarrollo.net/administracion/docentes/documentos\_personales/193983\_2\_International\_138[1].pdf](http://www.estudiosdeldesarrollo.net/administracion/docentes/documentos_personales/193983_2_International_138%5B1%5D.pdf)//VS)

We live in a world where patents dictate the possibilities of use and enrichment. Nanotechnology ¶ patents are concentrated in the hands of wealthy countries and multinational corporations. ¶ In 2003, the five countries with the largest number of nanotechnology patents are as follows: the ¶ U.S. (5,228), Japan (926), Germany (684), Canada (244) and France (183). In addition, the five entities ¶ that obtained more patents related to nanotechnology included four multinational electronics companies ¶ and one university: IBM (198), Micron Technologies (129), Advanced Micro Devices (128), Intel (90) ¶ and the University of California (89).48¶ This means that the restructuring of industry on a worldwide scale will mean having to pay for new ¶ patents. In Argentina, as in Brazil and Mexico, the possibility that research into nanotechnology will lead ¶ to patents is one of the goals and economic arguments for investing in these new technologies. However, ¶ this is a two-edged sword. Even when new patents are registered, it is highly likely that the country as a ¶ whole will have to disburse much more for all the patents than it should pay for. This is a topic that has ¶ to be discussed in depth.

**1NC Disease Frontline**

**Market pressures and implementation hurdles decimate effectiveness**

**Spieler 07**

(Jeff, chief of research, technology and utilization for the Office of Population and Reproductive Health at the US Agency for International Development was held recently at the Woodrow Wilson International Center for Scholars , “Nanotechnology and Health”, 02/2007, <http://www.anythingbutwork.com/health/nanotechnology.htm>//VS)

Measuring one billionth of a meter, one nanometer is a fraction the average width of a human hair (about 100 000 nanometers). **Nanotechnology is the ability to** measure, see, **manipulate** and manufacture **objects** between one and 100 nanometers.¶ Dr. Peter A. Singer, senior scientist at the McLaughlin-Rotman Centre for Global Health and Professor of Medicine at University of Toronto said:¶ "**Nanotechnology has the potential to generate** enormoushealth **benefits** for the more than five billion people living in the developing world. Nanotechnology might provide less-industrialized countries with powerful new tools for diagnosing and treating disease, and might increase the availability of clean water.¶ "**But it remains to be seen whether novel applications of nanotechnology will deliver on their promise.** **A fundamental problem is that people are not engaged and are not talking to each other. Business has little incentive-as shown by the lack of new drugs for malaria, dengue fever and other diseases that disproportionately affect people in developing countries-to invest in the appropriate nanotechnology research targeted at the developing world.** **Government** foreign **assistance agencies do not often focus,** or focus adequately, **on science and technology**. **With scant public awareness** of nanotechnology in any country, **there are few efforts by** nongovernmental organizations (**NGOs**) and community groups **to examine how nanotechnology could be directed toward**, for example, **improving public health in the developing world**."¶ Previous research by Dr Singer's group identified nanotechnology applications relating to energy, agricultural productivity, water supply, and diagnosis and treatment of disease as having most immediate relevance to the developing world. Researchers also highlighted a surprising amount of innovative nanotechnology R&D in a number of developing countries.¶ Dr. Andrew Maynard, chief science advisor for the Woodrow Wilson Center's Project on Emerging Nanotechnologies commented:¶ "**Countries** like Brazil, India, China and South Africa **have** significant **nanotechnology research initiatives** **that could be directed toward the particular needs of the poor. But there is still a danger**-**if market forces are the only dynamic-that small minorities of people in wealthy nations will benefit from nanotechnology breakthroughs in the health sector, while large majorities, mainly in the developing world, will not**. **Responsible development of nanotechnology must include benefits for people in both rich and poor nations** and at relatively low cost. **This** also **requires** that careful **attention** be paid **to** possible **risks nanotechnology poses for human health and the environment**."¶ Dr. Piotr Grodzinski, director of the Nanotechnology Alliance for Cancer at the National Cancer Institute, National Institutes of Health said:¶ "It is my belief that nanomaterials and nanomedical devices will play increasingly critical and beneficial roles in improving the way we diagnose, treat, and ultimately prevent cancer and other diseases. But **we face challenges; the complexity of clinical implementation and the treatment cost may cause gradual,** rather than immediate, **distribution** of these novel yet effective approaches.

#### Pandemics unlikely and no extinction

Ridley **12** [8/17, Matt Ridley, columnist for The Wall Street Journal and author of The Rational Optimist: How Prosperity Evolves, “Apocalypse Not: Here’s Why You Shouldn’t Worry About End Times,” http://www.wired.com/wiredscience/2012/08/ff\_apocalypsenot/all/]

#### The emergence of AIDS led to a theory that other viruses would spring from tropical rain forests to wreak revenge on humankind for its ecological sins. That, at least, was the implication of Laurie Garrett’s 1994 book, The Coming Plague: Newly Emerging Diseases in a World Out of Balance. The most prominent candidate was Ebola, the hemorrhagic fever that starred in Richard Preston’s The Hot Zone, published the same year. Writer Stephen King called the book “one of the most horrifying things I’ve ever read.” Right on cue, Ebola appeared again in the Congo in 1995, but it soon disappeared. Far from being a harbinger, HIV was the **only new tropical virus to go pandemic in 50 years**.¶ In the 1980s British cattle began dying from mad cow disease, caused by an infectious agent in feed that was derived from the remains of other cows. When people, too, began to catch this disease, predictions of the scale of the epidemic quickly turned terrifying: Up to 136,000 would die, according to one study. A pathologist warned that the British “have to prepare for perhaps thousands, tens of thousands, hundreds of thousands, of cases of vCJD [new variant Creutzfeldt-Jakob disease, the human manifestation of mad cow] coming down the line.” Yet the total number of deaths so far in the UK has been 176, with just five occurring in 2011 and none so far in 2012.¶ In 2003 it was SARS, a virus from civet cats, that ineffectively but inconveniently led to quarantines in Beijing and Toronto amid predictions of global Armageddon. SARS subsided within a year, after killing just 774 people. In 2005 it was bird flu, described at the time by a United Nations official as being “like a combination of global warming and HIV/AIDS 10 times faster than it’s running at the moment.” The World Health Organization’s official forecast was 2 million to 7.4 million dead. In fact, by late 2007, when the disease petered out, the death toll was roughly 200. In 2009 it was Mexican swine flu. WHO director general Margaret Chan said: “It really is all of humanity that is under threat during a pandemic.” The outbreak proved to be a normal flu episode.¶ The truth is, **a new global pandemic is growing less likely, not more**. Mass migration to cities means the opportunity for viruses to jump from wildlife to the human species has not risen and has possibly even declined, despite media hype to the contrary. Water- and insect-borne infections—generally the most lethal—are declining as living standards slowly improve. It’s true that casual-contact infections such as colds are thriving—but only by being

**US**

**Nanotechnology is not inevitable**

**Jones, 02** – senior associate at Foresight Nanotech Institute (Tanya, “Foresight Update 49” Foresight Institute, http://www.foresight.org/Updates/Update49/Update49.2.html)//VP

Neil Jacobstein spoke on combating anti-technology memes in the fresh light of his efforts to encourage discussion and critique of the Foresight/IMM guidelines for the safe development of molecular nanotechnology. Through his efforts, our draft has not only been discussed extensively online and at meetings across the country, but was presented to the White House Office of Science and Technology Policy. Memetic challenges exist in this attempt to develop policy for molecular nanotechnology. In assessing the reactions to his presentations, Neil has found that we are still fighting the last war — the one on technical feasibility — rather than the new ones on what solutions should we develop and how we pro-actively mitigate the risks of these emerging, powerful technologies. Anti-technology memes include statements that the risks of molecular nanotechnology outweigh any potential benefits that may accrue; and nanotechnology is not inevitable, and we can decide not to do it. He also hears that nanotechnology should be criminalized in a fashion similar to certain aspects of the biotech industry or that the risks of future terrorism are so high that development should cease. Increased accountability, better intelligence and law enforcement, and greater transparency would help reduce these risks."Theissue is the quality and accountability of interaction, not whether we are going to have nanotechnology," he says, suggesting that the most important thing we could do is reduce the number of people in the world who are mired in desperate circumstances. Neil presents specific recommendations for how these, and other, anti-technology memes might be countered or diffused in reasoned debate.

**US S&T leadership high now – trends prove**

**Hummel et al 12** – Hummel - Ph.D in Mathematics, Chief Scientist at Potomac Institute for Policy Studies, former project manager at DARPA. Cheetham – Research Associate for Academic Centers and Programs at the Potomac Institute for Policy Studies, research and analytical support to policy development projects for DOD (Robert Hummel, Patrick Cheetham, Justin Rossi, “US Science and Technology Leadership, and Technology Grand Challenges,” Synesis, 2012, <http://www.synesisjournal.com/vol3_g/Hummel_2012_G14-39.pdf>)//RH

The **US enjoys a** science and technology (S&T) enterprise that is the envy of the world. Our universities, industries, laboratories, and government institutions have developed and used technology that has driven economic benefits and secured superpower defense status. The US remains the leader in S&T innovation, a position enjoyed since World War II. While the health of the US S&T enterprise remains strong, there are considerable stresses within each major component. Some believe that the US position as leader in S&T could falter, at least in some fields. We review the stresses in various components of the S&T enterprise and the evidence of trends in S&T quality. We conclude that the enterprise maintains a leadership position for now.

**Nanotech not inevitable <sfsdf>**

**Squo solves – promotes sustainable economic growth, relations, and regional stability US and Mexico already cooperating on S&T – over 40 S&T agreements already in place**

**Miotke 8** – subcommittee on research and science education, committee on science and technology, House of Representatives, 110 Congress, Foreign Service Officer, Deputy Assistant Secretary of State for Science, Space, and Health (Jeff, “International Science and Technology Cooperation,” Government Printing Office, 4/2/2008, <http://www.gpo.gov/fdsys/pkg/CHRG-110hhrg41470/html/CHRG-110hhrg41470.htm>)//RH

The Bureau of Oceans, Environment, and Science (OES) in DOS pursues such efforts through the establishment of bilateral and multilateral S&T cooperation agreements. There are now over forty of these framework agreements in place, or in various stages of negotiation, in every region of the world--from Asia and Africa, to Europe, the Middle East, and Latin America. These agreements: Strengthen bilateral, regional, and global cooperation, advance broader U.S. foreign policy goals, provide for protection and allocation of intellectual property rights and benefit sharing, encourage public and private engagement, foster science-based decision-making, facilitate the exchange of scientific results and access for researchers, address taxation issues, and respond to the complex set of issues associated with economic development, security, and regional stability. These bilateral agreements have significant indirect benefits including contributing to solutions and initiatives that encourage sustainable economic growth, promoting good will, strengthening political relationships, helping foster democracy and civil society, supporting the role of women in science and society, promoting science education for youth, and advancing the frontiers of knowledge for the benefit of all.

**U.S. tech leadership inevitable despite challenges – no other country has the structural institutions to sustain leadership empirics prove**

**Acemoglu et. al 12** (Daron Acemoglu, economist, Professor of Economics at MIT, James A. Robinson, Professor of Government at Harvard University, “World’s next technology leader will be U.S, not China – if America can shape up,” <http://www.csmonitor.com/Commentary/Global-Viewpoint/2012/0419/World-s-next-technology-leader-will-be-US-not-China-if-America-can-shape-up>, April 19, 2012)

The **odds favor the US not only because it is technologically more advanced and innovative** than China at the moment, with an income per capita more than six times that of China**.** **They do so** also **because innovation ultimately depends on a country’s institutions.¶ Inclusive political institutions distribute political power equally in society and constrain how that power can be exercised. They** tend to **underpin inclusive economic institutions, which encourage innovation and investment and provide a level playing field** so that the talents of a broad cross-section of society can be best deployed.¶ **Despite all of the challenges that they are facing, US institutions are broadly inclusive, and thus more conducive to innovation**. Despite all of the resources that China is pouring into science and technology at the moment, its political institutions are extractive, and as such, unless overhauled and revolutionized soon, they will be an impediment to innovation.¶ **China may continue to grow in the near term, but this is growth under extractive institutions** – mostly relying on politically connected businesses and technological transfer and catch-up. **The next stage of economic growth – generating genuine innovation – will be much more difficult unless China's political institutions change** to create an environment that rewards the challenging of established interests, technologies, firms, and authority.¶ **We have a historical precedent** for this type of growth and how it runs out of steam: the [Soviet Union](http://www.csmonitor.com/tags/topic/U.S.S.R.). After the [Bolsheviks](http://www.csmonitor.com/tags/topic/Bolshevik%2BParty) took over the highly inefficient agricultural economy from the Tsarist regime and started to use the power of the state to move people and resources into industry, the Soviet Union grew at then-unparalleled rates, achieving an average annual growth rate of over 6 percent between 1928 and 1960.¶ Though there was much enthusiasm about Soviet growth – as there is now about China’s growth machine – it couldn’t and didn’t last. By the 1970s, the Soviets had produced almost all the growth that could be derived from moving people from agriculture into industry, and despite various incentives and bonuses, and even harsh punishments for failure, they could not generate innovation. The Soviet economy stagnated and then totally collapsed.

**US nanotech regulations fail – low safety standards, no testing for risks, no monitored research**

**Soliman 12 -** agricultural economist, attorney, and researcher focused on legal and economic issues in the Agriculture, Resource and Food sectors (Adam, “The Need for Stronger Nanotechnology Regulation”, Food Safety News, 10/16/2012, <http://www.foodsafetynews.com/2012/10/why-we-should-have-more-regulations-on-nanotechnology/#.UfV_zI21F6I>)//BD

**Legislation governing the use of nanoparticles is limited around the world,** **particularly in the U.S**. In 2007, a report released by the U.S. Food and Drug Administration’s Nanotechnology Task Force 33 stated that despite the ‘special properties’ of nanomaterials, no further regulation is needed (3).¶ This report was opposed by environmental group Friends of the Earth and the International Center for Technology Assessment. The organizations filed a petition with FDA urging it to take action to highlight the risks associated with nanotechnology (4). As a result, the federal Nanotechnology Research and Development Act was passed in 2003.¶ The Toxic Substances Control Act (TSCA) was also developed to assess the risk posed by substances, and to provide authority to the Environmental Protection Agency (EPA) in regulating them (5). The TSCA set out provisions to protect living systems against unknown risks of new or engineered substances by regulating and testing new and existing chemicals. However, **the EPA does not hold much sway in the American political sphere. In fact, the U.S. legislature does not even require pre-market approval of consumer goods**; the FDA relies solely on manufacturers to ensure product safety (6). Moreover, **only evidence of a very specific harm associated with a product can elicit legal restrictions, and nanoparticles have not yet been tested for such specific risks.**¶ The EU organization Strategy for Nanotechnology asserts that nanotechnology has the potential to enhance quality of life and industrial competitiveness, and therefore lobbies aggressively for minimal legislation on nanotechnology**. Current laws state that anyone producing or importing nanomaterials into Europe is required to provide written notification to public authorities; this notification requires the manufacturer to conduct research illustrating the properties and dangers of the product** (7). However, **this research is not monitored**, making the data difficult to validate and allowing manufacturers to exaggerate, forge or omit crucial information.¶ In Hong Kong, the Centre for Food Safety has referred to the World Health Organization’s (WHO) requirement for risk assessment on nano-scale materials for assessing nanoparticles before they can be used in food (8). Additionally, the Public Health and Municipal Services Ordinance requires all food sold in Hong Kong to be fit for human consumption. But consumer goods lack specific legislation monitoring nanotechnology’s expanding applications. Furthermore, no comprehensive and compulsory danger assessment scheme has been introduced to manage the potential risks posed by nanoparticles to public and environmental health.¶ Demand for Legislation

**US regulation of nanotech is abysmal – nanotech released without governance will wreak havoc – only precautionary principle solves**

**Soliman 12** [Adam, agricultural economist, attorney, and researcher focused on legal and economic issues in the Agriculture, Resource and Food sectors, “The Need for Stronger Nanotechnology Regulation”, OCTOBER 16, 2012, http://www.foodsafetynews.com/2012/10/why-we-should-have-more-regulations-on-nanotechnology/#.Uf7v0JK1Fru//cc]

Concerns Surrounding Nanotechnology **Studies show that nanoparticles can easily penetrate DNA and the cells of the lungs, skin and digestive system**, thereby **causing harm to living organisms** (2). One example of a commonly used but potentially harmful nanoparticle can be found in the beverage industry. Beverage companies have been using plastic bottles made with nano-composites, which minimize the leakage of carbon dioxide out of the bottle. This increases the shelf life of carbonated beverages without using heavy glass bottles or more expensive aluminum cans. Think of the numbrt of people who are unknowingly being exposed to untested nanocomposites. **Nanoparticles are also now being engineered to be more resilient, thereby increasing the risk of causing irreversible damage to living organisms. We simply do not have sufficient data or risk assessment laws in place to analyse whether nanoparticles are safe for consumption**. International Regulations **Legislation governing the use of nanoparticles is limited around the world, particularly in the U.S**. **In 2007, a report released by the U.S. F**ood and **D**rug **A**dministration’s Nanotechnology Task Force 33 **stated that despite the ‘special properties’ of nanomaterials, no further regulation is needed** (3). This report was opposed by environmental group Friends of the Earth and the International Center for Technology Assessment. The organizations filed a petition with FDA urging it to take action to highlight the risks associated with nanotechnology (4). As a result, the federal Nanotechnology Research and Development Act was passed in 2003. The Toxic Substances Control Act (TSCA) was also developed to assess the risk posed by substances, and to provide authority to the Environmental Protection Agency (EPA) in regulating them (5). The TSCA set out provisions to protect living systems against unknown risks of new or engineered substances by regulating and testing new and existing chemicals. However, the EPA does not hold much sway in the American political sphere. In fact, the **U.S. legislature does not even require pre-market approval of consumer goods**; **the FDA relies solely on manufacturers to ensure product safety** (6). Moreover, **only evidence of a very specific harm associated with a product can elicit legal restrictions, and nanoparticles have not yet been tested for such specific risks**.

**The US cannot be the sole governing body enforcing nanotech – a nanofactory race would ensue – US could lose**

**Vandermolen 2006 – Intelligence Officer with US Special Operations Command** [Thomas, graduate from Naval War College, “Molecular Nanotechnology and

National Security,” Air & Space Power Journal, September 1, 2006, http://www.airpower.maxwell.af.mil/airchronicles/apj/apj06/fal06/vandermolen.html#vandermolen, Accessed August 5, 2013]

**In order for this strategy to have a decent chance of working, the United States should not attempt to assume a hegemonist stance and become the sole governing body of this system. Such a strategy would require a US‑only nanofactory development program.** Furthermore, **US efforts to dominate nanofactory technology will likely result in a “nanofactory race” that the United States could lose. Europe, Japan, Korea, China, and India are all conducting research into nanotechnology**.40 **However poorly the US national image is perceived throughout the world today, it could grow exponentially worse if the United States emerged as the sole MNT superpower. Therefore, for both technical and diplomatic reasons, the US primacy option is not the best solution.**