The Militarization of America's Universities

An ¡Escrache! Publication

A Letter from the Editors

This publication is the testimony of our careers as students of a university in service of the warfare state.

This publication is founded on a belief that war, no matter how urgent it might seem and no matter how necessary we are made to think it is, can no longer be considered a justifiable act. War is not the last resort, war is not the path to peace, war is not the means to an end, war is never the solution. War is always a failure.

This publication is founded on a fact: War is not possible and pursuable in any society without the coordination and resources of a nation's knowledge base for the purposes of making war. In our society this means that war is made possible only through a permanent technological revolution encompassing most disciplines of science. War is the product of a close relationship between the US military establishment, private corporations, and academic institutions. This is the military-industrial-academic complex. Colleges and universities serve a critical purpose that only they can fulfill by providing access to the best and brightest minds, the product of their research, and the legitimization of war and weapons as high and honorable pursuits. The role that universities collectively play in warfare cannot be over-stated. War as we know it, with all its destructive and horrific capacity, would not be possible were it not for the military-industrial shaping of science, and our institutions of knowledge creation.

We are not against science. We are opposed to the manipulation and perversion of science and technology used for the destruction of humankind. We are for the realization of a university that works to better society through research and education. We are in support of science guided by ethics not profits.

In a message to the university community dated March 19th, 2003 UC President Richard Atkinson remarked that with respect to the war against Iraq and during times of war in general, *"it is important that we all remember, now more than ever, the important role the University plays as a place of reasoned inquiry and civil discourse. While emotions may run high, there can be no room on our campuses for violence or intolerance."*

President Atkinson is right. There can be no room on our campuses for violence or intolerance. Therefore we must immediately cease all participation in the production of war and the technologies used to fight it. We must mobilize science entirely for peace and the prevention of war.

Since the UC laid the foundation for the military-university relationship, it should be the first to sever the ties. We are calling upon the University of California to show leadership by transforming its system of research from war to peace, its economic purpose from destruction to sustainability, and by realizing its motto "Fiat Lux," that progress and a peaceful future is still possible.

Fiat Pax,

Emily Hell

Darwin BondGraham

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All works authored by the Editors. A production of the !Escrache! media collective.
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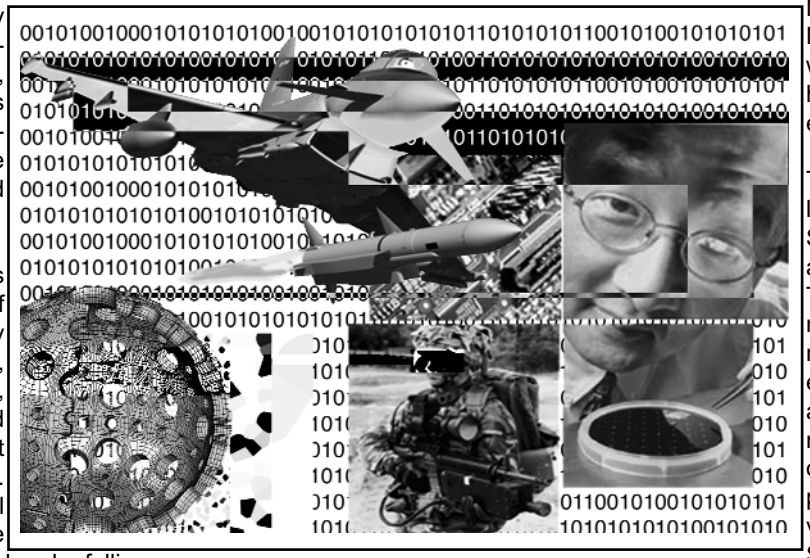
KNOWLEDGE POWER
And The Production Of War

On Wednesday March 19, 2003, in the initial openings of the second Gulf War, the United States of America launched a barrage of missiles at Baghdad, the capital of Iraq. Over the next week the city of Baghdad experienced what US military planners had been calling *"shock and awe,"* a demonstration of the unimaginable power wielded by the US military. We now live in a time of war, a permanent *"war for freedom"* as US politicians have told us. Iraq is the momentary target, as was Afghanistan a year ago, as will be the next enemy when the system presses onward. This war is nothing less than the total and utter failure of our society. War is always a failure, even in victory, it is an act of violent inadequacy brought about when a society is too weak, too cowardly, or too misled by its mass media and political leadership, preventing the people of a nation to imagine and make peace.

Our nation's bloodlust has led to an abandonment of the international community including our closest allies, Germany, France, Mexico, and Japan. The United States has betrayed the trust of nearly every major nation. The war's repercussions will be felt in more than the shock and awe vibrations of bombs falling on Baghdad. The United States has effectively destroyed the system of international peace, completely dismantled the powers of the United Nations, and brazenly violated international law. Our economy, and the stability of the world now teeters on uncertainties not only about the future of Iraq, but the future intentions of the United States, and who this pre-eminent nation will attack next. The threat of nuclear weapons has been renewed, biological and chemical weapons, the root causes of terrorism have been strengthened, the death toll continues to rise, the United States has inflamed the Muslim world with a more venomous hatred and will to strike back. All for the sake of what?

How Did We Get Here?

The war in Iraq may prove to be an opening act of what intellectuals and pundits alike are calling America's new epoch of empire. The US political establishment openly talks about projecting American values and interests upon the world through the barrel of a gun. Iraq is after all, the Anglo-American experiment in force-feeding *"democracy"* and *"freedom"* to the Arabs. Somehow the United States has come to accept war as a preferential, indeed a good foreign policy. Our politicians speak about seeking the peace through war, and somehow the American public has been led to accept it.



The Militarization of Society - What You Reap is What You Sow

The United States is a thoroughly militarized society. Our everyday lives may be sheltered from the death and destruction our military carries out abroad. We do not feel the pounding attacks of two ton laser guided bombs, our communities and families are not forced to flee the scourges of war like the quarter billion refugees now alive and seeking shelter in Africa, Asia, South America, and the Middle East. Rather, we are on the production end of warfare; the production of weapons, ideology, and knowledge employed in nearly every violent conflict on the planet. We produce the weapons that kill others around the world. Our culture perpetuates the glorification of violence. Our politicians use violence as a matter of fact. We create the knowledge, tools, and will to make war.

The US economy is addicted to war. 2.8 million Americans are directly employed by the military industrial complex, representing 2% of the total US workforce[1]. US based weapons manufacturers annually export billions of dollars worth of arms to the rest of the world. The US is responsible for over half of all arms sales worldwide[2]. Weapons represent 5% of our nation's total exports, killing machines are our comparative advantage[3]. Weapons manufacturing corporations like Lockheed Martin, Raytheon, and Northrop Grumman are worth billions of dollars, and hold untold political and economic influence.

The mass media and popular culture of the United States continually perpetuates and romanticizes war. Television, film, entertainment, news – our entire media reflect what is endemic and matter of fact about the US. We are a nation obsessed with our own power. Glorifications of past wars and military interventions as recent as Somolia and Afghanistan draw millions to theaters to view the spectacular representation of US military righteousness.

The political system of the United States is militarized. Our politicians consistently rely on violence as a means to solving conflict. The US government is dependent on its ability to overpower those who stand in its way, while aiding foreign governments around the world with weapons and military aid as long as they obey. The US invasion of Iraq is the exemplar of the militarization of politics. Diplomacy, political negotiation, and the possibility of peace have been trashed by the US government in its self-assured rush to war. Our political leaders accept and promote the militarized society and the kind of

world it forges. A nation's values can be judged by the kinds of things it spends its resources on. Currently the US government allocates nearly $400 billion dollars for the annual functioning of the US military. The war our leaders have so willingly chosen will demand at least another $100 billion dollars of our nations wealth, and this does not count the "rebuilding" of Iraq. But the costs of war are so much greater, there are billions more dedicated to the production of nuclear weapons, billions to support the veterans of past wars, and billions in foreign military assistance. Dare we even summarize the real costs of war? The lives of the innocent, and the unknown possibilities of a society that could direct its wealth toward education, health care, peace, disarmament, and justice?

The Militarization of Knowledge

All societies have primary systems of knowledge. Knowledge is the way in which a society interprets and interacts with the physical environment, and the other peoples who inhabit the earth. The dominant form of knowledge in our society is science. Science is how our society interprets the world, be it the physical sciences meant to teach us about the forces of nature, or the social sciences intended to give us greater understandings about the relationships of human beings to one another. Knowledge in the United States is created, refined, and shared in the university. **Universities are the core institutions of our society's attempts to interpret the world, and to think and act within it, in a manner that is consistent with our collective ethics.**

At the core of the militarized society is a system of knowledge infected by the forces of war. A system of knowledge focused on the production of technologies and modes of thought which promote war, and make it desirable.

The militarization of knowledge is a failure, or un-willingness to act and live within the world through peaceful means. It necessarily implies the failure, or inadequacy of peaceful knowledge. Because universities are where we create knowledge, where we come to understand the world and engineer new worlds, militarization should be viewed as chronically dangerous development. It is both an indicator of our society's sickness, and a perpetuator of the disease.

The two kinds of knowledge created in our universities can be roughly divided between the physical/natural sciences and the social sciences/humanities. The first category includes the disciplines which seek to interpret the world as a set of physical facts, rules, and processes which can be understood. Basic science under this category (chemistry, physics, geology, etc.) seeks to understand the laws of nature, while the applied sciences of this category (engineering, computer science, etc.) seek to literally apply these laws and create technologies granting us new and emergent powers within the world. These disciplines imply that human progress will be achieved by understanding of the world as a physical thing, and that technological creation will solve the problems of human existence.

Social scientific and humanistic forms of knowledge differ in that the world is not interpreted as a set of facts or laws. For the most part, these disciplines view the human being as a creature. A creature is a creation, and as that would imply, we human beings can continually recreate ourselves. Scientific ideals of progress under this category (flawed as they may be) differ from the natural/physical sciences in that progress is sought by understanding humanity itself, and not by relying on an understanding of the physical world for technological innovation.

Both natural/physical science, and social science/humanistic knowledge are susceptible to militarization. The social sciences and humanities can be employed by the forces of war to legitimate and rationalize violence as necessary, and good. Social sciences can also produce new technologies in the forms of organization, and understanding about group dynamics which can be employed for the purposes of war. Finally political knowledge and expertise on the intricacies of different peoples and regions are routinely employed for the purposes of making war or extending force to influence geopolitical events. Social scientists are most often employed by the warfare state explicitly. They know what they are doing, their goals and intentions are self evident, and they must continually address the issues of morality and political beliefs when carrying out their work.

It is the natural and physical sciences that are most susceptible to militarization, and most effectively enlisted in the service of the warfare state. The physical and natural sciences are controlled through a system of funding and rewards that often steers these disciplines down avenues of relevance to the military. Some fields like electrical engineering and computer science are wholly dependent on their military sponsors having become chronically addicted to the warfare state's objectives. Science is molded into a willing accomplice of military goals. Researchers working within the natural and physical sciences often fall into the trap of working in the service of the warfare state by rationalizing it, or without knowing it. These scientists commonly adopt beliefs that their work is apolitical, objective, and that science is by definition value neutral. They continually justify their work as having dual uses, both military and civilian. They legitimate their work for the warfare state as, *"for the good of the nation,"* or as defensive, all illusions in a militarized society where true autonomy from the military establishment is rare, as it is surely a ticket to academic obscurity and career suicide for an applied scientist.

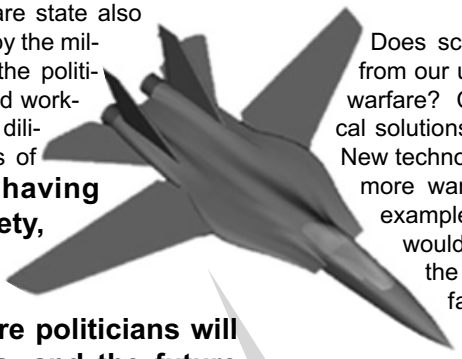
What is the Militarization of Knowledge?

The militarization of knowledge is found in its pure form in the university. Militarized knowledge is a way of knowing the world and relationships between humans, characterized by an acceptance and promotion of violence and war. In militarized society we come to know the world and our fellow humans in terms of the hostile other. Other nations become enemies. Other peoples become dehumanized. **The world becomes possess-able if we are strong enough, disposable if we so choose. Militarized knowledge adopts a worldview of force not understanding, violence not peace. Militarized society relies on knowledge to create technological solutions to our problems and conflicts.** This is always at the expense of humanistic knowledge – the ways of knowing and relating to the world which find solutions in peace and organization, not violence and quantity.

Because universities are at the center of knowledge creation in our society, we find our institutions of higher learning imbued with violence. The militarization of universities leads to a spiraling effect further strengthening the forces of war.

Militarized universities produce: military technologies including – new weapons, warfare systems, ways of thought and organization distinct to the goals of coercion and force, and the permanent technological revolution of warfare

itself. Universities in service of the warfare state also produce the human resources demanded by the militarized society. Universities churn out the politicians, technocrats, bureaucrats, and skilled workers demanded by the society which so diligently produces and executes the means of destruction. **These graduates, having learned about the world, its society, and applied sciences through the lens of warfare go forth and recreate this calamity. The future politicians will lead the nation into future wars, and the future engineers will construct future combat systems, while we all obey and simply "do our jobs."** The system further entrenches itself, war begets war, the institutions of knowledge produce destruction at the expense of creation.



The technologies meant to banish war as unimaginabley destructive, and obsolete have only accomplished the former. New technologies meant to make war more humane, and conductable have only accomplished the latter.

TechnoWar & How the University Makes War Possible

The greatest effect the militarization of universities has had is by making war more conductable. Modern America, being the "civilized" and "peaceful" society it is, will not conduct a war that extols to large a cost in innocent civilian lives, and the lives of US soldiers. The technological revolution in aerial bombardment, missile capabilities, and weapon accuracy since the Vietnam war was intended to address this very issue. By making weapons more accurate and deployable from a distance, the military and its partners in science hoped to remove the US soldier from combat equation, while making state violence humane and survivable. This supposed injection of ethics into the arsenal of the United States was lauded in the Gulf War, Afghan War, and now with unprecedented emphasis in the second war against Iraq. War becomes more automated, increasingly technology withdraws the soldier from the battlefield. The arsenal becomes deployable through computer interfaces, warfighters sit behind computer screens hundreds, even thousands of miles from where they wreak havoc. Soldiers who must still encounter the enemy face to face are made into superhumans with high tech body armor, night vision, network communications, advanced sensors, all intended to make the US soldier invulnerable.

Science in the service of warfare reinforces a political establishment more willing to use violence than diplomacy. US politicians become sure of their military's capabilities to defeat the enemy, and to do so in a manner that the American public can accept. The population falls into a similar mindstate. The technological revolution to make war more effectively against the enemy leads us only to more war.

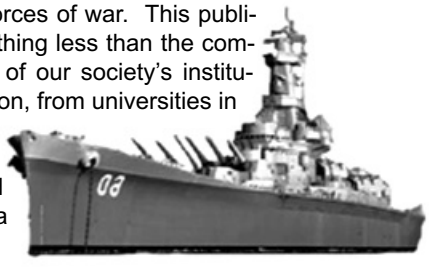
Does science, technology, and knowledge emanating from our universities produce an ethical and just form of warfare? Can war be made humane through technological solutions? Absolutely not – Historically we know this. New technology leveraged in war has had the net effect of more war and more killing. Most prominent are the examples of past weapons whose inventors claimed would make war impossible. The machine gun being the most famous case was said to have made warfare so destructive and technologically advanced that nations would no longer fight. World War I immediately ensued, and millions died. The technologies meant to banish war as unimaginabley destructive, and obsolete have only accomplished the former. New technologies meant to make war more humane, and conductable have only accomplished the latter.

What is at Stake?

The future, and everything. The university takes its namesake from this fact. In Latin, universum - *"The whole of created or existing things regarded collectively."* The university is the whole of human knowledge; the knowledge we have about our existence, past present and future. The university is the attempt of the scientific system of knowledge to understand the human condition, our place in the world, and the realm of possibility. The university is more: In its most worthy incarnation, the university makes room for, even thrives from non-scientific, non-rational forms of knowledge including the arts and humanities. It is inarguably the most powerful attempt humanity has made to understand and re-make the world.

With this fact in mind there are two conclusions to be drawn from the militarization of the university. First, it can be described as simply a matter of fact that knowledge creation and the university serve the military. Humans make war with one another, and that universities are involved in this effort is a truism. Humans will continue to make war, and so the inclusion of the university should be expected. This answer is of no value. It assumes a set of universal permanent truths (a nature) about the human condition with no possibility of disproving. Furthermore it offers no future for humanity other than annihilation, and it completely betrays the fundamental idealogical basis of the university which is progress through enlightenment.

In contrast, it can be said that the militarization of universities is a problem directly related to the condition of a society. How much and in what ways a society's institutions of knowledge creation serve the forces of war is a measure of that society's worth. A nation that demands the enlistment of its knowledge base in the production of war and the perpetuation of violence is a nation not worthy of life. The only alternatives left would be the dismantling of that nation, or a radical reform of its institutions and a fight against the forces of war. This publication is dedicated to nothing less than the complete and radical reform of our society's institutions of knowledge creation, from universities in service of the warfare state, to universities in resistance, in peace, and toward the creation of a meaningful future.



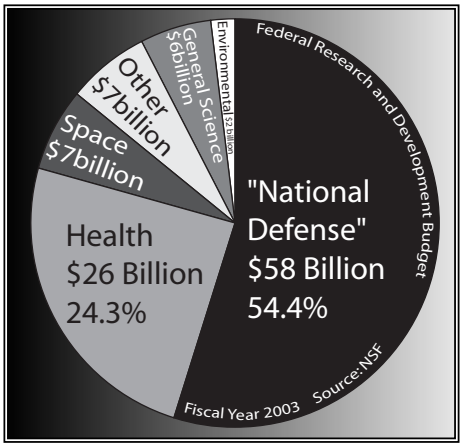
The History of the Militarization of America's Universities

How America's Universities Came to Serve the Forces of War

This year the federal government of the United States will spend $107 billion on scientific research and development[1]. Much of money will go to private research firms, corporations, and other institutions. Public and private universities are another major recipient of these federal funds.

Funds are dealt out by different federal agencies including the National Science Foundation, National Institute of Health, the Departments of Commerce, Agriculture, Transportation and others. Dominating the control and allocation of government money spent on scientific research is the Department of Defense (DoD). The DoD's share of the pie is 54.4% of all federal research funds. This amounts to $58 billion, over twice what is spent on health and medicine research ($26 billion), and an obscene 29x what is spent on natural resources and environmental research ($2 billion).

This description of federal allocations is also conservative in what it defines as "defense" related spending. Not included is the category of space research and



technology, primarily funded by NASA, an agency with a nominal civilian designation, but a clearly military oriented service. NASA's research into aeronautics has always been of interest to the military, as has space since the 1960's when the beginnings of the modern military's central nervous system (thousands of satellites) were put into orbit. From 1985 - 1994 the Defense Department filled 35% of every Space Shuttle load making it the largest user of the program by far[2]. In 2003 this category of research represented $7.4 billion, 6% of the total budget[1]. The proportion of these funds that American universities receive has fluctuated over time and area of study.

Leveraging Science for War

Since WWII, DoD funding of scientific research, development, testing, and evaluation has remained the first priority of federal research funds. The military led the way in creating federal agencies, offices and partnerships with America's universities and research centers. Prior to WWII there had been no serious attempt by the federal government to fund academic research. During WWII, the DoD created agencies and linkages that provided billions of dollars to universities and corporations to research and design the weapons that would win the war and wage future wars. Among these weapons was most notably the atomic bomb, but also the proximity fuze, missile technology, and radar. Breakthroughs in electronics during the war led to the modification of anti-aircraft guns with analog computers, used to calculate the firing times and trajectories necessary to hit high speed targets like fighter-bomber aircraft and the German V-1 rocket. Computers were used to calculate artillery tables, they solved complicated engineering problems, decoded enemy communications, and opened up the future of technological war[3].

The Enlistment of Science and Technology

Leading members of America's academic institutions joined Vannevar Bush, an

The Militarization of America's Universities: 1940- Present

1940 — *Office of Scientific Research and Development founded under collaboration of F. Roosevelt and Vannevar Bush.*

1942 — *Robert Oppenheimer hosts a Summer conference @ UC Berkeley to discuss the feasibility of developing a "superbomb". Laid the groundwork for the development of the A-Bomb.*

1943 — *Construction of Los Alamos National Laboratory completed.* It has been Managed by the University of California since it's inception. Professors and researchers from top universities were recruited (UCB, Stanford, Purdue, Columbia, U. of Illinois.)

1945 — *First US computer created.* A collaborative effort of the U. of Pennsylvania and the Army Ordinance Ballistic Research Labs, "ENIAC" was created to calculate Ballistic Missile firing tables.

monday, july 15 1945 — *First nuclear weapon exploded at the Trinity site in New Mexico.* Governor warned by Los Alamos scientists that evacuation of the state might be required.

"I am become Death, the Destroyer of Worlds."

electrical engineer at the Massachusettes Institute of Technology (MIT) in the creation of the National Defense Research Committee. The committee's mandate was to conduct research in service of America's military. It was composed of Frank Jewitt (National Academy of Science and AT&T), James Connant (President of Harvard), Karl Compton (President of MIT), and Richard Tolman (Caltech). A year later the same men founded the Office of Scientific Research and Development, which allowed them more ability to take research projects from basic phases into the development and applications stages[3]. President Roosivelt signed off on the efforts signaling that, "essentially for the first time, the proper function of government included support of basic research by university scientists."[4].

James B. Conant, President of Harvard (left) with **Vannevar Bush** of MIT, after witnessing the first atomic bomb explosion at Trinity site, Alamogordo, New Mexico, 16 July 1945.

Source: U.S. National Archives.

Toward the wars end the future of academia and the military were bound. Charles E. Wilson, Executive VP of the War Production Board , President of General Motors Corp., and later Secretary of Defense under the Eisenhower administration, summed it up in 1944 saying:

"What is more natural and logical than that we should henceforth mount our national policy upon the solid fact of an industrial capacity for war, and a research capacity for war that is also 'in being'? It seems to me that anything less is foolhardy."[2]..

According to historian Richard Abrams, "As the war neared its end, Edward L. Bowles, science advisor to the secretary of war Henry Stimson, called for 'an effective peacetime integration' of the military with the resources of higher education."[4]. The Office of Naval Research quickly took to this task of integration, and by 1949 it was funding thousands of research projects, at hundreds of universities nationwide[5]. Founded in 1946, it remains the largest distributor of DoD funds. Soon after the ONR's chartering, the other services got involved with the commandeering of academia for the purpose of war. The Air Force Office of Scientific Research (1952), the Army Office of Scientific Research (1958), and the Advanced Research Projects Agency (1959), later called DARPA, all established linkages between the military, universities, and corporations. In the interim of the ONR's establishment, and the coming of the other military research offices, the government chartered the National Science Foundation. The NSF's primary goal was to provide civilian, or non-military research funds, but it remains unclear as to how much this agency falls under the control or influence of military goals. In addition to funding many areas of interest to the DoD, the NSF can be interpreted as an outgrowth of the military's relationship with academia. In fact, the first director of the NSF was Alan Waterman, who came directly over from the Office of Naval Research to administer the new agency[6]: The NSF's foundational years were led by the same men who constructed the vast university-military relationship. Parallel to these developments was the growth of the DOE labs, managed by the University of California, and constituting the core of the military's nuclear weapons infrastructure. These labs provided a shining example of what became he nation's Federally Funded Research and Development Centers (FFRDC), funded by the military or proxy agencies, and managed by universities, drawing from their superb human resources, and using their prestigious names as an effective legitimation of the work carried on inside.

Technological War

The war of economies bent toward productive destruction, the creation of the most effective, and horrifying weapons systems has flourished ever since. The DoD has managed to guide the disciplines of science and engineering into a militarized knowledge of control, force, application, and functionality. The military has transformed broad aspects of science, so much so that it is hard to draw the line between the civilian and military purposes of some technologies. We have in many ways an economy based on warfare, but the interaction between war and science has not only been a one way street. Warfare - strategy and tactics have been profoundly influenced by the inclusion of science. MIT professor Carl Kaysen describes it as, "...a rapid evolution of military technologies [that] has led to a much broader and more rapid interplay between technology and strategy."[7]. The exponential expansion of capabilities, the ability to strike targets anywhere on the planet, real-time network communications, data, radar, night vision, unmanned aircraft, logistics - every new technological revolution fueled by scientific research has changed the way war is fought. The most striking example is the DoD's gam-

Office of Naval Research is founded as the first agency of the Office of Scientific Research and Development.

Stanford Research Institute opens.

1946

Air Force Office of Scientific Research founded.

Lawrence Livermore National Laboratory opens to spur competition with scientists at LANL and encourage increased production of nuclear technology. Also managed by UC since its creation.

1952

Army Office of Scientific Research founded.

1958

Defense Advanced Research Projects Agency founded.

1959

Students for a Democratic Society (SDS) at Columbia University stage an 8-week revolt, citing Columbia's complicity in the Vietnam war. SDS demands their university cease military research, staging lengthy and effective protests. The remainder of the school year was transformed by student-run education and organization to stop the war.

april 1968

ing approach to war. In his description of modern industrial society's most apocalyptic tendencies, social theorist Herbret Marcuse described the process by which the Air Force's RAND think tank (a quasi academic institute of the military) would create US nuclear strategy. The "thinkers" at RAND would divide into teams, red and blue. The red team would be put on the offensive, while the blue team's goal would be to maintain deterrence from nuclear attack. In such a way the forces of destruction are organized and readied[8]. Through gaming theory, the Gulf War of 1990-1 was fought out long before Hussein ever invaded Kuwait, two years to be exact. Prior to the war, the US military conducted countless games involving wildly different scenarios in the Middle East (as they still do for almost every conceivable conflict in ever last corner of the earth), several of which included the nearly exact scripting of Operation Desert Storm.[9] But the games have gone much further. RAND's theorists, and other military minds have experimented with "limited nuclear exchanges" in regions like Vietnam, and Korea, while helping to pioneer a style of "detached", "academic," and "rational" approaches to war:

"Many of RAND's brightest minds - and it had these in abundance were mathematicians... trained in the techniques of 'operations research' (mathematical analysis of complex strategic problems, such as the optimum number of ships in a protected convoy) during the war. RAND soon began to apply statistical analysis, systems analysis, game theory, and other formal and mathematical techniques to the burgeoning problems of nuclear strategy. Their results led to a series of shifts in the US military strategy." [3].

Technoscience, the child of the Pentagon has changed it's creator as much as the military has changed the academic institutions which have carried out the research. The military entered academia, shaped it, and fostered a cooperation by asking for superior weapons What they got was the beginning of a revolution in warfare that continues to this day.

The first computers, Colussus (1943) in the UK, and ENIAC (1945) in the United States were both constructed by university professors in partnership with their governments. ENIAC was built by scientists at the University of Pennslyvania under the supervision of the US Army who desired the machine for computing ballistics calculations. ENIAC's first assignment in 1946 was to calculate a particularly complicated equation for the atomic bomb program at the Los Alamos National Laboratory, administered by the University of California. "Just before pressing a button that set the ENIAC to work on the atomic bomb, Maj. Gen. Gladeon Barnes spoke of 'man's endless search for scientific truth.'"[3]. What he really meant was some men's endless search for war. Computers have since found their way into every facet of life, but most funding for computer science still comes from the military. In 1999 the DoD spent $643 million to fund computer science within American universities, and this sum was projected to rise another $100 million by 2001[10]. In addition, the most powerful computers remain in the service of the warfare-state. The UC administered Lawrence Livermore Lab's ASCI White, the world's most powerful computer is used mostly to simulate nuclear explosions, both testing aging weapons in the US stockpile, and now new weapons with designs that cannot be tested in actual explosions since the US suspended underground explosions in 1992. ASCI stands for Accelerated Strategic Computing Initiative White. Accordingly, "It's also just the beginning. The government says that to certify the nuclear arsenal with full confidence, it needs a supercomputer that is 10 times as powerful as ASCI White by 2004."[11]. Clearly warfare still guides the future present and future of computing.

The entire hyper-dominance of the US military has evolved through research conducted through American universities. Without access to the best and the brightest the stream of technological and strategic innovation would dry up. For example, around 55-60% of the DoD's basic electronics research is conducted in universities[13], computer science is higher, around 70%[14], not surprisingly the humanities and arts recieve nothing. The DoD is extremely reliant on its access to academia. And science has been equally affected. The military-university relationship has symbiotically created an American science, or more accurately a militant form of knowledge. Science, most strikingly the disciplines of the physical sciences

ARPANET *- The first internet; a collaboration between the DoD, UCLA, UCSB, Stanford, and U of Utah. Created so scientists at each of these universities had access to each other's military-funded research.*

1969

Students at Stanford create a massive anti-war movement opposing university weapons research. A 9 day occupation of the Applied Sciences Lab forces the Stanford Board of Trustees to sever the university's ties to the Stanford Research Institute that was conducting classified research on weapons systems to be used in Vietnam.

april 1969

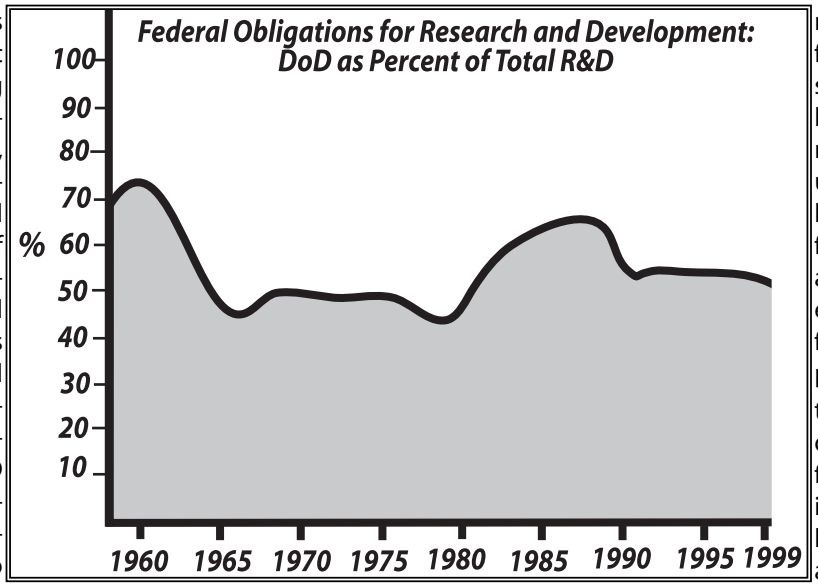
Mansfield Amendment *Law stating that all miltary-funded research is required to have military applications. Encouraged funding of Applied Sciences rather than Basic Science as a principle.*

1970

Carter Administration encourages expansion of military power over university research. Defense Department expenditure on academic science doubles.

1976-9

have been molded by this relationship, so much that physics, and engineering owe much of their theoretical basis, methodology, and purpose to assumptions about the world which include uses of force, that the earth is possessable, disposable, and winnable (assumptions that we find within and exemplified by the military). A 1953 DoD publication concerning R&D clearly explains this molding of basic physical science (and scientists) into knowledge of military application as intended,

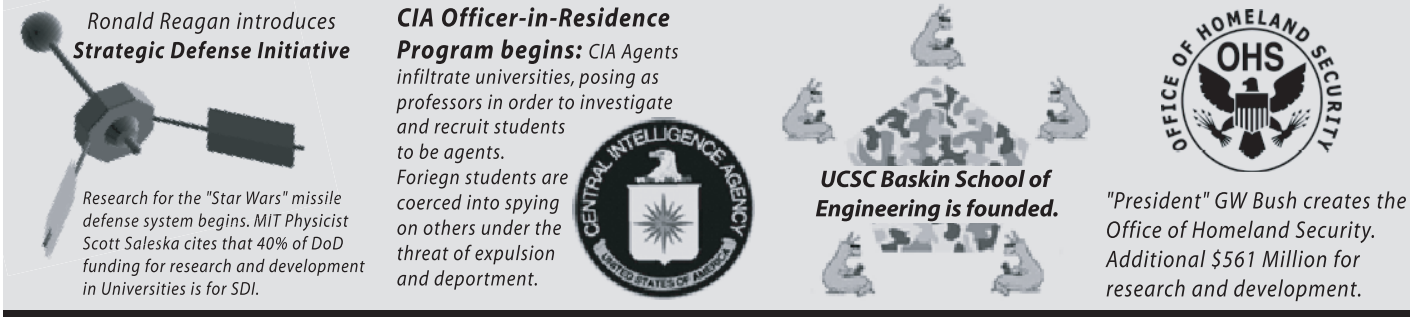


"...to maintain effective contact between the Armed Services and the scientific fraternity [note the masculine identity of America's scientists] of the country, so that the scientists can be legitimately encouraged to be interested in fields which are of potential importance to national defense." [4].

The Reagan administration echoed these words with its introduction of the University Research Initiative of the 1980's. University science was guided into fields of applicability, not knowledge, force, not energy, power, not understanding, and here it remains today. The fields have developed under these assumptions. Within electrical engineering the discipline became more focused on quantum electronics, solid state physics, applied science rather than pure science going so far as to impact the theoretical foundations[6,12]. Many scientists have described the structure of research within American universities as tending to force one into the arms of the military. Professors are responsible for obtaining the majority of their funding through grants. This money supports both their research, and graduate students. When upwards of 70% of the available funds are distributed by the military, professors tend to compete by moving their research toward more obvious, and much of the time directly applicable topics of interest to the Pentagon. The Mansfield Amendment of 1970 was intended to stem the military control of research by limiting DoD fuds to projects of direct relevance and application to the military[15]. It was believed that such a law would decrease academia's reliance on DoD funds, which at the time supported much of the basic (non-applied) research within American universities. Instead, the law had the effect of transforming science itself into applied and military oriented topics. Military funding is structural component of the university[2], the individual researcher, departments, and entire fields of study must to fit into this structure, or at least modify themselves as to gain some degree of advantage. In 1987, the American Mathematical Society, the largest association of university mathematicians took up the topic of military funding and control over knowledge through a mail referendum. The text read:

"The AMS is concerned about the large proportion of military funding of mathematics research. There is a tendency to distribute this support through narrowly focused (mission oriented) programs, and to circumvent peer review procedures. This situation may skew and ultimately injure mathematics in the United States..." [14,16].

The subsequent vote was 5000 to 1300 in favor of increasing the fraction non-military funding in hopes of staving off a militarization of math (which had unfortunately occurred long before). Physicist Edward Gerjuoy and Elizabeth Baranger of the University of Pittsburgh conclude of DoD funding in the physical sciences that, "research directions are being skewed, department hiring and promotion policies probably are being influenced, and top level administration policies and recruiting may be influenced as well."[14]. Thus is the military-university relationship. Attempts to wean scientific research from military funds have failed because they do not attack the root of the problem - the military. The historical relationship outlined above continues to this day, the military continues to fund and guide science, especially technological research, the assets of the university remain at the disposal of the warfare-state, and the quest for ever more destructive weapons continues.



UC Manages Armageddon

A History of the Labs

The model example of military university collaborative research is the inception, design, and creation of the atomic bomb. Conceived and developed by University of California, the creation of the most deadly device ever made was a product of research funded by the military and conducted by an elite group of America's university scientists, professors and graduate students.

Since the Los Alamos Laboratory opened its doors in 1943, every single nuclear weapon built for the United States arsenal was designed at a University of California managed weapons laboratory. The history of the development of Los Alamos and the second National Laboratory, Lawrence Livermore laid the foundation for the last fifty years of military research and development conducted on America's college campuses.

In the spring of 1942, Robert Oppenheimer, later dubbed the father of the atomic bomb, was asked by University of Chicago physicist Arthur Holly Compton to work with him on studying the feasiblity of producing a nuclear weapon. With studies under way on the manufacture of Plutonium and Uranium, both scientists eagerly researched ways in which a "super-bomb" could be created. In June of that same year, Oppenheimer organized a summer study at his university, UC Berkeley. Attendees included Compton from the Metallurgical Laboratory at the University of Chicago, graduate student Robert Serber of the University of Illinois, and several physics theorists including Edward Teller. The June 1942 meeting at UCB provided the theoretical basis for the design of the atomic bomb, which was to become the principal task at Los Alamos during the war.

Upon discovery that the production of a nuclear bomb was possible, the scientists still had questions they need answered, instruments necessary for production, and a full-time staff consisting of America's most advanced scientists, many of whom were prestigious faculty of some of the nation's public research institutions. The LANL's website details the need for a laboratory dedicated to nuclear research: "By September 1942, the difficulties involved with conducting preliminary studies on nuclear weapons at universities scattered throughout the country indicated the need for a laboratory dedicated solely to that purpose."[1] Theoretical studies were well underway up until this point, but a laboratory dedicated to production, research, design, and testing was soon underway, under command of General Leslie Groves, who was deputy to the chief of construction for the Army Corps of Engineers during construction of the Pentagon.

In 1943 construction on the Los Alamos National Laboratory was completed. Los Alamos in New Mexico was chosen by Oppenheimer and Groves because of its isolated location (it had to be at least 200 miles from any ocean or national boundary), mild climate, and because "Canyons surrounding the site could be used for explosives tests."[1] The Office of Scientific Research and Development provided funding, and the small town of Los Alamos was forcefully evacuated under military command in February 1943. Among the crew of 450 scientists and technicians to immediately move into Los Alamos were Ernest Lawrence, founder of both the UC Berkeley and MIT Radiation Laboratories, and whom the Lawrence Livermore Laboratory would later be named, as well as scientists from Stanford, Purdue, Columbia, University of Illinois, and University of Rochester. The scientists saw their new lab not as a military institution, but, "instead, it was to become an outpost of academia."[1]

The University of California Signs a Contract

On January 23, 1943 the Office of Scientific Research (OSRD) and Development issued a preliminary letter to the University of California Regents announcing "certain investigations to be directed by Dr. J. R. Oppenheimer" at the Los Alamos Labs. Contracts between the UC and the OSRD had been conducted in similar fashion before, for institutoins such as the UC Radiation Laboratory. "Robert M. Underhill, the secretary of the Regents of the University of California, understood that the contract would be similar to the other OSRD contracts at Berkeley and, on that basis, agreed with UC President Robert Gordon Sproul to accept the letter of intent on Feb. 10, 1943."[1]

Robert Underhill, secretary of the Regents of the University of California, signs the contract to operate the Los Alamos National Laboratory on April 15, 1943.

The Manhattan District of the Corps of Engineers (MED), taking over work on production of the Laboratory from the OSRD, sealed the deal on April 15, 1943 when the University of California Regents signed a contract to manage the Labs, a contract that has remained intact for six decades. General Groves was intent on a military takeover of the institution down

the road, but many scientists were vigorously supportive of University management for credibility and access to top scientists. At least one scientist, the head of the physics division at Los Alamos issued a letter of resignation that would be effective upon the transition of the labs from the UC to the military.

Interestingly, the UC Regents upon signing the contract were unaware of the project to build a nuclear bomb at the Los Alamos site. Not until after the war, after the bombs had been used to kill and maim millions of Japanese civilians, did the University really become aware of what it was managing. Following the war, a weak attempt was made to sever ties with the labs, but it was never accomplished. Today, the University of California takes a proud stance on its management of the labs, calling it a "public service to the nation."[2]

> This year, the University of California will be given $2.5 billion dollars to spend on nuclear weapons research and development.

The Atomic Energy Commission, created in 1947, was formed to oversee "nuclear weapons research, development, production, and testing; production of plutonium and weapons grade uranium; milling and refining of uranium ore; biomedical research into the effects of radiation and nuclear weapons; basic nuclear research in fields such as chemistry, physics, and metallurgy; development of nuclear reactors; and promotion of a civilian nuclear power industry".[3] Since its inception, which was a direct result of the creation of the national nuclear laboratories, the AEC has been responsible for funding and oversight of the management of the labs by the UC. In 1975, the AEC became a part of the Department of Energy, with whom the UC is now contracted in the management of both LANL and LLNL.

In 1952 UC founded the second national weapons laboratory, Lawrence Livermore located in the East Bay, transferring many research scientists from the UC Berkeley Radiation Laboratory for increased work on nuclear weapons. It was believed that the creation of a second laboratory would instigate a rivalry between scientists at both labs, creating an atmosphere of competition that would spur technological discoveries, and would fuel a US advantage in the arms race.

LANL and LLNL Today

Today, the three laboratories (including Lawrence Berkeley Laboratory) have a combined UC workforce of 18,000 and operate on federally financed budgets totaling nearly $4 billion.[2] Along with nuclear weapons research, LANL and LLNL conduct civilian studies as well, such as energy, space, and medical research. The vast amount of funding, however, given by the Department of Energy to the UC for managment of the labs is used for weapons research. In 2002, LANL recieved 1.2 billion dollars for research and development of nuclear weapons, which was 80% of its entire DOE funding for that year.[5]

The budget for 2004 from the DOE for "total weapons activities" will be 6.4 billion dollars, an increase of 9% from 2003.[7] This is 30% of the entire annual DOE budget of $21 billion. The $6.4 billion is distributed by the semiautonomous National Nuclear Security Administration, primarily to the three national nuclear labs in the United States: LANL, LLNL, and Sandia National Laboratory in New Mexico which is managed by the Lockheed Martin Corporation. The Los Alamos Laboratory will recieve 1.3 billion dollars for weapons research, Lawrence Livermore will receive 1.2 billion.[6] That means that this year, of the $4 billion dollar combined budget the University of California manages for the labs, $2.5 billion, or 63% will be used for nuclear weapons research.

The $2.5 billion is spent on various nuclear weapons programs, including the Stockpile Stewardship Program, which provides for upgrades of every nuclear weapon the US has, and the development of new nuclear weapons, under the guise of stabilizing an already existing arsenal of weaponry. The goal of the SSP is to enhance the capabilities of the US nuclear weapons stockpile. "In that pursuit, NNSA is modifying, altering, refurbishing, performing life extensions on, and replacing life components in all of the weapons in the stockpile."[6] Though a huge portion of the DOE's budget is devoted to these weapons "improvement" programs, the budget contains very little information about them.

Also being researched by University of California employees is the Robust Nuclear Earth Penetrator, with a $45 million budget over three years for design and theoretical framework. Construction of the RNEP is set to begin in the spring or summer of 2003 at LANL, and it will be the first new nuclear weapon to be added to the US arsenal since 1989. It has been touted as a more "useable" nuclear weapon, its objective to burrow hundreds of feet below the ground before detonation in a "bunker-busting" technique. Not only does preliminary research prove the RNEP ineffective, but it shows that if used in an urban setting, the radiation emitted, though underground, would be enough to kill 50,000 people in the first 24 hours. Bush Administration rhetoric has been heavily saturat-

"Mr. President, I have blood on my hands."

ed with threats of first-strike nuclear use, and the development of a new nuclear weapon designed for battlefield use has disastrous consequences in the international arms control regime.

The University of California is responsible for environmental destruction through the development of these weapons. 47,500 barrels of toxic waste from the UC Lawrence Livermore Lab has been dumped off the coast of San Francisco's Farrellon Islands, the largest fishery on the west coast. The University also cheats local schools out of much needed tax revenue. Both LANL and LLNL pay no state taxes. In New Mexico, LANL would pay an estimated 60 million dollars in state tax, half of which would go to the educational system, however their work is considered "nonprofit and educational" by virtue of the fact that it is managed by the University of California.[7]

The research of weapons of mass destruction including the RNEP, the management of the Stockpile Stewardship Program, and the disposal of nuclear waste, are all fundamental responsibilities of the University of California as lab managers. Under the guise of fundamental scientific research, backed by one of the nation's most respected institutes of higher learning, laboratory scientists and bureaucrats are able to continue their legacy of building weapons of mass destruction by abusing the reputation of this university, its faculty, and its students.

UCSC and the Labs

Research at the labs is strictly classified, which goes against university principals of academic research and peer review. The laboratories fund research projects for professors at every UC campus, and there are several collaborative research projects going on between faculty at UCSC and researchers at the labs. In the seventies several social science professors became aware of weapons research conducted on their campuses, whose laboratories were housing weapons grade plutonium and other heavily dangerous instruments for development of weapons of mass destruction. Today, most of the classified nuclear research is therefore conducted off university campuses, however that does not mean that research funded by the labs at UC campuses is not militarily relevant.

UCSC Earth Sciences department recieves funding from the Los Alamos Laboratory for studies in seismic wave activities that help scientists discover when and where nuclear weapons are being tested around the world. The work of the professor contributes to the International Monitoring System for verification of the Comprehensive Nuclear Test Ban Treaty (CTBT) at the Radionuclide Laboratory in Los Alamos. By itself, this project may seem a responsible one but in conjunction with the Bush administration's failure to ratify the Comprehnsive Nuclear Test Ban Treaty (CTBT), it allows the US a "don't do as I do, do as I say" rhetoric.

The Modeling and Imaging Laboratory (MILAB) in the Geophysics department at UCSC is also funded by Los Alamos National Laboratory, as well as the Office of Naval Research, Air Force Office of Scientific Research, and many petroleum corporations including BHP, Shell, Chevron, Conoco, and Unocal. MILAB develops theory and methods for the modeling and imaging of "complex environments", assisting American corporations in the extraction of valuable natural resources available in parts of the world outside of the United States. The UCSC MILAB website states their intent clearly:

"The Earth is recognized to have hierarchical, multi-scale heterogeneities, especially in economically, environmentally and/or scientifically interesting areas. As new oil and gas reserves become more difficult to find and expensive to drill for, there is increased interest in pinpointing their potential beneath increasingly complicated structures".[4]

What other interest would the US military, the weapons laboratory, and these oil conglomerates have in the geography of these environments if they weren't planning on invading them?

In 1984, three professors from UCSC decided to take a stand against the UC's management of the weapons labs. Bill Matthews (Astronomy), Barry McLaughlin (Psychology), and Dane Archer (Sociology) set out to sever the ties between the UC and Los Alamos and Livermore labs by proposing a resolution at the Faculty Senate meeting, which passed almost unanimously. Later that year, the resolution was picked up by the Academic Senates on every other UC campus--and ALL the campuses voted to sever ties. Unfortunately, this did not impress the regents who extended the contract which is again up for renewal in 2005.

The Future of the UC Contract

Because the University of California played such an integral role in the formation of the partnership between America's institutes of higher learning and the military, it is now the responsibility of the UC to disarm our society by disarming our universities. The creation of the nuclear weapons laboratories, and the continued management of these factories of destruction by the University of California sets a precedent to other institutions, faculty, and most importantly the impressionable student body that military science is not only important, but somehow ethical and necessary.

By the time this publication goes to print, the UC may have lost the contract to manage the Los Alamos weapons lab. This does not invalidate the struggle to abolish nuclear weapons. In fact the possible transfer of the labs to another university or private corporation represents the further strengthening of the nuclear weapons complex and the destruction that they produce. The need to rid the world of the nuclear threat has never been so urgent.

- Scientific Research and Development in Service of the Warfare State -

The US Army's "Science and Technology Master Plan," an annual report outlining how the armed forces will develop, acquire, and field new technologies for warfare is one of the clearest explanations of how the militarization of the university promotes and produces war and the technologies to conduct it. According to the Army,

"Basic research (discovery and understanding) fosters progress and innovations in Army unique areas," and, "Shapes research and technological innovations concerning issues related to Army applications and environment.".[1]

The military is quite frank about their control over scientific research in general, and university research specifically. The method by which the military most effectively controls academic research in the sciences is through the university single investigator program, although the Army and other armed services also fund university research through URIs (University Research Initiatives), and FFRDCs (Federally Funded Research and Development Centers).

The Principal Investigator

Through the single investigator program, the military makes grants to individual researchers on campuses. University faculty search out funds to conduct their research, and often apply to military funding agencies through grant proposals as PIs (principal investigators). The process gives the illusion that the researchers are relatively autonomous from the military because it is the researcher who applies for the grant and chooses the research area and goals. This is a false impression based only on the surface appearance of the military-university relationship. Even the US military is quick to dispel this idea:

"A major contributor to the Army science base is the single investigator working at a university... Individual investigators provide the Army with the ability to broadly influence the total science base, quickly exploiting opportunities that might arise.".[1]

The Army crowns the military's control/influence over scientific research by saying of basic research, "The Army is interpreting and tailoring progress for the Army's benefit." This "ability to broadly influence the total science base," and to "tailor" science is how research is most dangerously militarized in universities. The military is able to shape science, and control research in specific areas of engineering and the physical sciences simply because they hold a monopoly of the funds available for support. Individual scientists may be choosing and developing their own research projects, but it is the military establishment that decides the priority and funding for these projects. Research with clear military applications, often overt and solely warfare science is funded, while other topics are left to rot. Brian Martin, a professor of Science and Technology Studies remarks that:

"Military funding also affects what are thought to be the key questions within certain fields, such as certain computational challenges in the early days of computers. This affects areas as diverse as the study of climate, gravitational anomalies, genetic engineering and group psychology.".[2]

Case Study: Computer Engineering at UC Santa Cruz

A typical project within this militarized system of research and development is the WINGs Project at UC Santa Cruz. WINGs, known as "Wireless Internet Gateways," was completed in 2000 culminating several years of work and millions of dollars in military funding from DARPA. The WINGs project carried out research into a computer communications network for wireless, mobile, and autonomous units. The project concluded with the construction of several prototype WINGs units which were immediately transferred to the US Army's CECOM (Communications Electronics Command) for incorporation into the Army's future combat systems. The technologies created under the WINGs project have also found their way into the systems being developed by corporate military contractors like Raytheon, SRI, and Hughes. The WINGs project has been transitioned into the military's SUO program. SUO is the Small Unit Operations project, intended to provide small combat units with a "Mobile communication system with high data-rate capacity that is optimized for restrictive terrain."[4] WINGs is perfect for this goal as the UC Santa Cruz PI acknowledges by dedicating the project to the "support [of] US military doctrine which now calls for the ability to communicate soldiers and computers on the move with one another, establish instant communication infrastructures, and extend the global communication infrastructure to the wireless mobile environment".[5] Through collaboration the findings of the WINGs project have contributed directly to the US military's (C4) computers, communications, command, and control needs.

As Julian Huxley, a British biologist remarked in 1934 of the militarized system of research and development emerging in both the US and UK,

"If you are willing to pay for more men and more facilities in war research than say medical research, you will get more results adapted to killing people and less adapted to keeping them alive.".[3]

The system of research weeds out disciplines and projects of little relevance to the military while strengthening warfare science, and promoting projects with primary military applications among the US scientific community.

The Pentagon's University Research Initiative

The URI (University Research Initiative) method of funding warfare science differs from the PI system in that URIs typically coordinate the research efforts of many professors working at different universities, and/or often across scientific disciplines and fields of study. Efforts that cross disciplinary boundaries are often called MURI (M for multidisciplinary). According to the Pentagon,

"MURI is a program designed to address large multidisciplinary topic areas representing exceptional opportunities for future DoD applications and technology options. The awards will provide long-term support for research, graduate students and laboratory instrumentation development that supports specific science and engineering research themes vital to national defense.".[6]

17 MURI grants have been made for 2003 totaling $8.5 million in funding for this year, and rising to $17 million in 2004. Universities and projects which made the cut include; UC Santa Cruz professor Ali Shakouri's research into "Direct Thermal to Electric Energy Conversion" for the Navy; a CalTech researchers study on "Synthesis of Long Chained Sequence-Controlled Polymers"; Stanford University's "Laboratory Instrumentation Research Design"; along with 14 other projects at universities ranging from Harvard, Brown, and Notre Dame, to the University of Michigan, Wisconson, and Arizona.[6]

Research Centers, Institutes, and Large Scale Coordinations

The most indirect, but infused method scientific research is funded in universities by corporate military contractors is through established Research Centers. Many research centers are administrated by offices at one university, with researchers and labs scattered throughout other campuses, most often within the same university system. Research centers are simply organized collaborations on a larger scale.

A prime example of a research center is the University of California's CITRIS (Center for Information Technology Research in the Interest of Society). CITRIS is administrated by UC Berkeley, and supports research on the Berkeley campus, UC Davis, UC Santa Cruz, and the new UC Merced. Aside from the research conducted through CITRIS that actually does benefit society, there is a good deal which benefits the warfare state and its allies. In addition to the funding support CITRIS receives from DARPA and the ONR, the majority of support comes from corporations including weapons manufacturers like; Lockheed Martin, Northrop Grumman, Boeing, Rockwell, TRW, Raytheon, SRI, Hughes Aircraft, United Technologies, etc. One of the major focuses of the CITRIS center will now be "Homeland Defense." Homeland Defense research will revolve around surveillance and police technologies. According to the UC,

"President Bush and the Congress have declared war on terrorism. There is now a national mandate to ensure adequate and effective homeland defense. Previous efforts to focus on large national security-related programs, such as the development of our nuclear capability [underline added] and the space program, have succeeded through close cooperation between government, academia and industry." and that it is "important to revisit the trilateral relationship between universities, industry and government." [8]

If we are to analyze who makes up the members of the government and industry within the "trilateral relationship" we find military and

Case Study: MURI at UC Santa Cruz

One prominent MURI project linked to UC Santa Cruz, and the UC system is called "Next Generation, 4-D Distributed Modeling and Visualization." Other universities collaborating on this project include; University of Southern California, Georgia Institute of Technology, and Syracuse University. The project is an attempt to model physical terrain accurately and in real time so that maps and models of the earth can be displayed for military commanders. Geovisualization is a MURI project because it draws from computer science, graphics, optics and other disciplines. The military applications of this project are immediate and total as the university researchers are eager to point out;

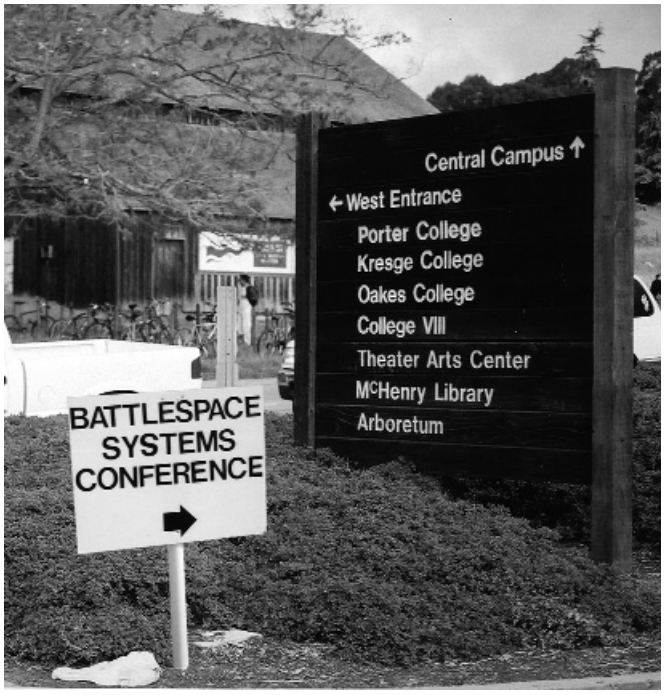
"Historically, most tactical decision makings were performed on a sand table, i.e. a box filled with sand shaped to replicate the battlespace terrain. Today, these operations are carried out using detailed paper maps and acetate overlays which could take many hours to print, distribute and update."[7]

The executive summary of the MURI project reads: *"Gaining a detailed tactical picture of the modern battlespace is vital to the success of any military operation. This picture is used to direct the movement of assets and material over rugged terrain during day and night in uncertain weather conditions, taking account of possible enemy locations and activity."* Thus the researchers conclude; *"we propose to investigate a distributed, database system for battlefield visualization, tailored to the needs of future mobile military personnel."*[7]

The researchers plan on transitioning their findings to the Army, Navy, and Air Force Research Labs, along with the Lawrence Livermore Weapons Lab, and several private firms. Ultimately, when the Geovisualization project is applied to the weapons systems it is being researched and designed for, it will provide for better targeting systems, target tracking of mobile objects, visualization of rugged terrain, through forests canopy, visualization and modeling of urban terrain, all towards the ultimate goal of providing the information which is according the UC Santa Cruz researcher "IMPORTANT IN A BATTLESPACE ENVIRONMENT."

Department of Homeland Security agencies representing the government, and weapons manufacturing corporations representing industry.

Through this funding system characterized by its massive



scope, and entanglement with research that is for the good of society, or at least not focused on the creation of warfare technologies, weapons research is able to flourish and avoid scrutinization or exposure. In fact, by entangling socially responsible and productive research, with the scientific pursuits of war and violence, the goals of the military and its industrial allies are strengthened. It becomes more difficult for critics of such research to oppose military funded projects, and it becomes close to impossible to separate the two polar opposites; research for peace, and research for war.

FFRDC (Federally Funded Research and Development Centers)

FFRDCs are the most concerted means of cooperation between the military and American universities. The National Science Foundations provides a comprehensive definition of exactly what a FFRDC is an does;

"Research and development laboratories fill voids where in-house and private sector research and development centers are unable to meet agency core area needs. Specific objectives for these FFRDCs are to:

(1) maintain over the long-term a competency in technology areas where the Government cannot rely on in-house or private sector capabilities, and

(2) develop and transfer important new technology to the private sector so the Government can benefit from a wider, broader base of expertise. R&D laboratories engage in research programs that emphasize the evolution and demonstration of advanced concepts and technology, and the transfer or transition of technology."[9]

Of prime importance is the fact that FFRDC provide the sponsoring agency (often the US military establishment) with resources that are not available in house. For the military this means access to the best and brightest minds in the fields of engineering and science that can only be found in the university. FFRDCs allow for military access to the people and the academic settings that are absolutely critical for the genesis of new ideas and technologies. FFRDCs allow the military to shape these environments and encourage the people working within them to pursue science in the service of war.

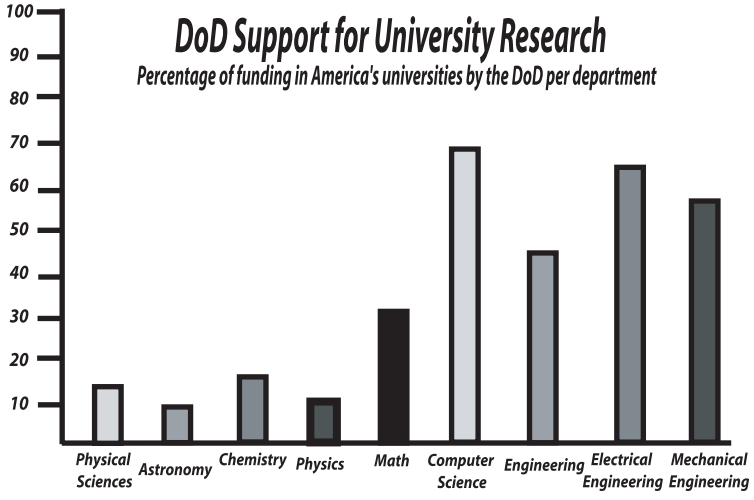
There are presently 36 FFRDCs in the United States. The Department of Defense sponsors nine of these, with two in partnership with universities. These are the Software Engineering Institute at Carnegie Mellon University, and Lincoln Labs at MIT.

Lincoln Labs was founded in 1951 out of the Radiation Lab, and Research Lab for Electronics. Lincoln Labs is a center for military research intended to encompass all technological fields related to the production of weapons and war. As the labs administrators exlain today;

"The scope of the problems has broadened from the initial emphasis on air defense to include space surveillance, missile defense, battlefield surveillance and identification, communications, and air traffic control, all supported by a strong advanced electronic technology activity."

As a center for technology transfer, from university to private industry, Lincoln Labs is responsible for such spinoff corporations as, XonTech, Inc., Sparta, Inc., Sensors Signal Systems, MITRE Corporation, all solely dedicated to weapons manufacturing.

Within California there are eight FFRDCs, four of which are administrated by Universities. Two of these are significantly militarized research centers, they are: The Lawrence Livermore National Lab managed by the University of California, and the Jet Propulsion Lab at the California Institute of Technology. The UC also manages the Los Alamos National Lab in New Mexico, which when paired with LLNL completes the nation's two nuclear weapons labs managed by the UC and funded by the Department of Energy (for more info see UC Manages Armageddon).



INSTITUTIONAL & INTERPERSONAL LINKS

The Structure of the Military-Industrial-Academic Complex

The militarization of universities is not exclusively pursued by forces outside the boundaries of campuses. Many members of the university community have intimate connections to the military industrial complex, as do university finances. Universities, like any other institutions in our society, are enmeshed in the economic, social, and political realms. They are affected by political decision making, and governmental needs, and they are inseparable from the corporations and businesses that fund them and feed from them. The scale to which universities are tied into businesses, and political power is beyond measure. All that may suffice here is a qualitative explanation of the links. Much of work that universities provide for the production of war is also to their own financial benefit, and to the benefit of many within the university including, faculty, administrators, especially members of the board of trustees, or regents. Universities are like any other institution within the framework of our competitive society, they seek to grow by expanding their power, prestige, and size. Under the militarized form of society, universities seek out and ally themselves with the institutions and people who can provide the funds and resources for expansion.

These structures are what will be referred to here as institutional links - (those between the university and another institution: i.e. corporation, government, or NGO), and personal links (individuals who are active within the university, who also belong(ed) to another institution(s) making the individual an informal link between the two).

Institutional Links

Literally any official and cooperative link between a university and another organization fulfills the criteria of being an institutional link. When the Department of Energy funds the University of California to manage the labs and provide the scientists who research and design new nuclear weapons, this is an institutional link. When a corporation, or the Department of Defense, and Department of Homeland Security sponsor research, or provide general funds for the support of activities on any university campus, this is an institutional link. When recruiters access a college campus through job fairs or events it is an institutional link. However, there is an important category of militarized support that the concept of institutional linkage lends itself to in an explanative and expository way.

Financial Incorporation

The financial incorporation of universities and military-industrial corporations is an institutional link that marries the well being of the university with that of the business. Financial incorporation goes beyond the tendency for universities to cultivate military priorities on campus in hopes of increasing the university's prestige, and power. Financial incorporation chronically binds the money of both, with the advantage and decision making power still firm in the hands of the corporation.

A basic example of the financial integration of the university and military-industrial corporation is to be found when analyzing most university foundations. Nearly every college and university has a foundation that provides funding support for academic programs, scholarships, capital improvements, and general costs. Foundations are typically non-profit, public benefit corporations managed by university administrators and trustees. The UC Santa Cruz Foundation, founded in 1974 has provided $75 million dollars in support to the campus through private gifts, corporate donations, and other foundations and non-profits. The trustees of the UC Santa Cruz Foundation for the most part have no military-industrial connections. The sole UCSC trustee connected with the military-industrial complex is Donald Worn, "a retired aerospace industry executive and design engineer. During his career, he worked for Lockheed Missiles and Space Company, Sperry Gyroscope, Convair, and Pratt and Whitney Aircraft."[1&2] It is not the interpersonal connections that make the UC Santa Cruz Foundation worthy of scrutiny. Rather it is the

TRW
*Acquired by Northrop Grumman, TRW designs and manufactures electronics components for missiles, aircraft, in addition to working on nuclear weapons.

Science Applications International
*Largest research corporation in US, provides military with computer combat systems, co-manages Yucca Mountain nuclear waste site with Bechtel, also provides Saudi Military with the "Royal Saudi Naval Forces C3 project."

Rockwell International Science Center
*Researches and designs materials, electronics, and imaging systems for the US military.

Spaceport Systems International
*Operates satellite and rocket launch pads at Vandenberg Air Force base in Central California. VAFB is the primary test site for the Star Wars Weapons System, and a logistics headquarters for US Air Force targeting.

General Dynamics
*Manufactures munitions, nuclear submarines, as well as private corporate jets

Lockheed Martin
*Largest weapons manufacturer, researching, designing and building the entire spectrum of weapons, especially aircraft, missiles, and nuclear weapons.

United Technologies
*consistently ranked as a top ten military contractor

TABLE 1.

Foundations institutional links to weapons manufacturing corporations that consistently donate and support the university and the programs they benefit from in the form of future employees, and access to research rusults.

Table 1. lists the military-industrial-research corporations which donated funds to the UC Santa Cruz Foundation in 2000-2001. Monsanto Corp. the St. Louis based agribusiness giant responsible for the toxic defoliants used in Colombia gave UCSC over $100,000 dollars in 2001. Other big contributors were Lockheed Martin whose missile and space facility is located only miles away from UCSC's campus up Empire Grade road. In addition to the scandalous funds from weapons manufacturers, UCSC also received gifts from Phillip Morris the tobacco giant, and the GAP corporation which has been doubly irresponsible for its use of sweatshop labor and role in the clear-cutting of old growth forests in Northern California. Military-industrial, and exploitative corporations donate

money to many public and private colleges and universities throughout the US. The University of California's system wide finances are incredibly entangled with weapons manufacturers. The UC's retirement plan portfolio is invested in dozens of military-industrial contractors through stock purchases. At least five corporations within the UC retirement portfolio conduct virtually no business other than weapons manufacturing and military subcontracting, these are: General Dynamics with a UC investment of $21,471,120, Northrop Grumman for $16,125,200, Raytheon for $ 16,818,200, TRW for $8,327,650, and Lockheed Martin for a staggering $33,046,370.[3]

Interpersonal Links

Interpersonal links are usually more subtle because they are informal social relationships which can be hard to uncover, but they still facilitate a great deal of militarization and dominance over the university by corporate-military power. There is a gray area between interpersonal and institutional links when dealing with the university-military relationship. Some ties exhibit characteristics of both categories. One example is evident in a close look at University of California Regent Richard C. Blum. This connection is best categorized as interpersonal because it is ultimately the individual that creates the link between university and military-corporation entities.

Case Study: Richard Blum

UC Regent Richard C. Blum appointed March 2002 will serve as Regent until 2014. Blum sits on the Investments, and DOE (Department of Energy) Lab Oversight committees. Outside of his official position as UC regent he is the Chairman of Blum Capital Management, Co-Chairman of Newbridge Capital, and sits on the boards of Northwest Airlines, Playtex Products, serves as the Co-Chairman of the World Conference on Religion and Peace, and a board Member of the World Wildlife Fund. It is Blum's business holdings that make him a bridge from the military-industrial complex to the UC. According to Blum Capital Management's website,

"Rigorous research serves as the foundation of Blum Capital's investment strategy." "Blum Capital views itself as owning a piece of a business, rather than just its stock. We take an 'own the whole business' approach into the public market, but with the support and cooperation of management and the Board." Other investment and business management claims made by Blum include that he seeks, "An opportunity to implement financial and/or business strategies that can materially improve the intrinsic value of the company" And that determinantly, "A close working relationship can be established with management in order to implement these strategies."

Rigorous research is what probably led Regent Blum to invest heavily in URS Corporation, a global construction, engineering, management and services company. Blum's, "own the whole business" approach, and close "support, and cooperation" implies more than just financial support. Blum's corporation seems to promote ethical, even philosophic support for the firms he invests in.

URS Corporation is a leading contractor with the Department of Defense. Its work with the military mostly involves construction, infrastructure management, and services at the corporate level, but the corporation's subsidiaries support much more specialized military activities. One project carried out by URS corp. for the military includes a massive overhaul and reconstruction of the Pentagon basement to facilitate war planning and operations. A URS press release describes the project;

*"Planning, architecture and engineering are URS' responsibilities in converting the formerly uninhabitable Pentagon basement into office space, without disrupting building or military operations. The newly renovated 1.1-million-square-foot space will house the National Military Command and Control Center, operations centers for all branches of the Armed Forces, and Department of Defense computer installations."*4.

Other projects carried out by URS for the US military include: A $40 million contract providing environmental services at Air Force Bases worldwide, a $15 million contract for construction management at Air Force Bases worldwide, another Air Force contract to construct a maintenance facility at Hill AFB valued at $32.7 million, and an April 3, 2003 contract with the US Navy to;

"provide technical support on two major Navy Joint Surface Warfare programs – the Cooperative Engagement Capability and Standard Display/Processor System initiatives – as well as several Navy navigation system programs. This five-year contract has a potential value to URS of $53 million."[5]

The Department of Defense is not the only federal customer of URS corp. The Department of Energy hired URS in 2000 to be part of a team to provide engineering, design, and construction services at the UC administered Los Alamos National Laboratory. According to URS the contract has a value of $25 million a year, and is part of a $1.5 billion dollar refurbishment plan to modernize the nation's premier nuclear weapons research and design facility. Regent Blum's investments in URS stand to benefit him from any contracts awarded by the DOE regarding the UC managed nuclear weapons labs, and it doesn't hurt that Blum sits on the DOE Oversight Committee of the UC.

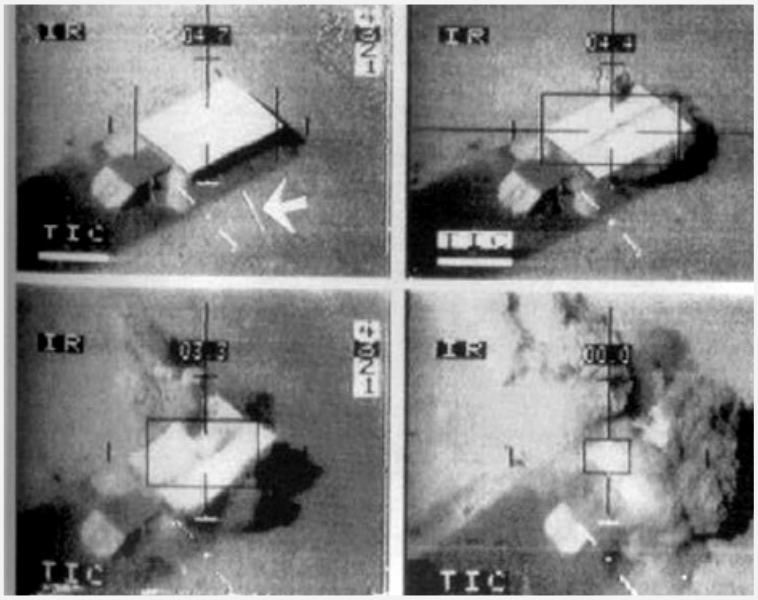
Further down the chain of Blum's investments are two corporations, EG&G, and Siegler Services Inc. Both companies are subsidiaries of URS corp. EG&G was acquired by URS in 2002 in a transaction valued at $500 million dollars. According to URS Chairman Martin Koffel, *"...the acquisition of EG&G catapults URS to the forefront as a leading*

provider in the rapidly growing area of outsourced operations and maintenance services for the federal government, particularly in national and homeland defense"[6] URS bought EG&G and Siegler Services from the Carlyle group, a capital investment firm similar to Blum Capital, but investing solely in military corporations and weapons manufacturers. EG&G's business activities include:

"engineering and technology services focused on defense-related aviation and ground systems, command, control and electronics systems, global threat reduction and homeland defense. We also provide mission-critical technical services including maintenance, modification, overhaul and service life extension for military aircraft and ground vehicles, logistics support services, systems engineering and military training."[7]

EG&G and its subsidiary Lear Siegler Services are responsible for not only the infrastructure of US military installations and operations, but also warfare systems, and their maintenance. Lear Siegler specializes in aircraft maintenance, and training serving not only the US military, but also its allies worldwide like the Royal Saudi Air Force.

Other UC Regents with connections to the military-industrial complex include Tom Sayles, appointed 1994 and serving until 2006. Outside of his UC position, Sayles is an executive at Sempra Energy Corp. of San Diego. From 1982 to 1991 he served as the senior legal council to TRW Inc., a weapons manufacturer involved heavily in missile, and aerospace technologies. Regent Sherry Lansing, appointed until 2010, sits on the Board of Governors of the RAND Graduate School.11. RGS is a branch of the RAND corporation, a non-profit organization which runs the National Defense Research Institute, and Project Air Force;



"Smart-Bombs" like those made famous in the first Gulf War are partly the product of military access to university researchers.

"Project AIR FORCE (PAF) is the product of visionary thinking that led to a RAND-Air Force partnership now approaching its sixth decade. Originally known as Project RAND (an acronym for research and development), PAF was established in 1946 by General H. H. "Hap" Arnold as a way of retaining for the United States Air Force (USAF) the considerable benefits of civilian scientific thinking that had been demonstrated during World Warl."[12]

In this way the RAND corp. acts as a bridge between US universities and the military. The RAND Graduate School based in Santa Monica trains the next generations of technocrats and policy makers in topics ranging from welfare to warfare, but RAND's main focus is military and political analysis. Classes offered in 2003 include, "Military Technology and Its Non-military Connections" & "Policy Analysis and Planning in the Defense Department" among others.

Case Study #2 Faculty at UC Santa Cruz

The interpersonal links of professors and research faculty sometimes serves an even more ingrained and functional purpose than do Regent or Trustee connections. Faculty connected with the military-research complex not only conduct research, but also direct students and university resources toward the production of war.

Benjamin Friedlander, a professor of electrical engineering in the Jack Baskin School at UCSC is one example. Friedlander's research background is essentially a career of service for the military-industrial complex. 42 of the past 51 research projects Friedlander has acted as principal investigator on have been sponsored by a military office, these include; US Army Missile Command, Ballistics Missiles Office – Norton AFB, US Army Strategic Defense Command, and the Naval Surface Weapons Center. Much of professor Friedlander's research concerns "target tracking," using advanced electronics for missiles, or airplanes.[13] In 1987 and 1988, long before Friedlander joined the Baskin School at Santa Cruz he worked as a consultant for a computer company in Sunnyvale named Saxpy. His research included projects like, *"Systolic Processor for Real-Time Target Classification"* all facilitated by the Small Business Innovative Research program (SBIR) of the Department of Defense, Missile Defense Agency.[14] The SBIR funds research at small businesses that provide services not often found in the larger military contractors.

Prior to his work for the US military, Friedlander worked for the Israeli Military as an engineer. After exiting military employment, he worked for Israeli Aircraft Corporation, a defense contractor with arms sales to over 85 nations, producer of combat vehicles, ground penetrating radar, the Harpy Loitering Weapon System (a missile which hovers over its target until the opportune moment to strike), NIMROD laser guided missiles, and dozens of other weapons systems.[15]

Friedlander also serves on the steering committee of the Asilomar Conference on Signals, Systems, and Computers held annually in Monterey California.[16] The conference is sponsored by the Naval Postgraduate School, and the Mission Research Corporation. Mission Research Corp. is based in Santa Barbara with 450 employees at over a dozen locations and sales of $90 million a year. Mission Research Corporation's client list is strictly military, DARPA, Army, Air Force, and Navy Research Labs, as well as the nuclear weapons complex of LLNL, LANL, Sandia, and the DOE. Other universities represented by faculty on the organizing committees of the 2003 Asilomar Conference are; San Diego State, Penn State, Oklahoma State, Rice, U. of Texas, U. of Washington, and U. of Wisconson, in addition to their Navy and Mission Research Corp. counterparts.[16]

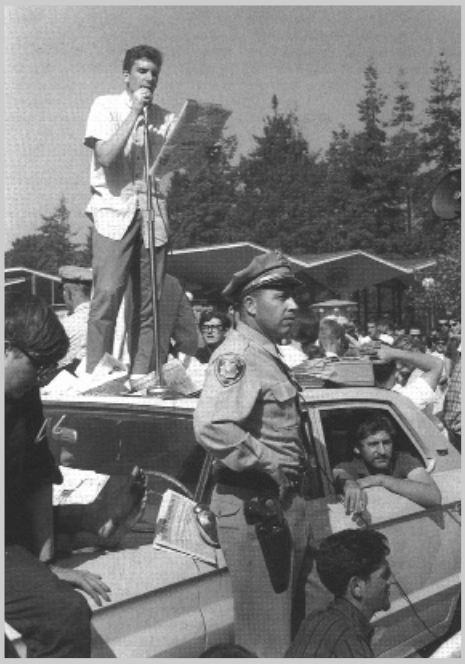
It is through these informal personal, formal institutional, and financial exchanges that universities serve the warfare state and its corporate allies. Personal relationships connect military, corporate, and university personnel while bridging the divide between these institutions. Formal institutional links establish cooperation and coordination across the military-industrial-academic complex. Be they research institutes, labs, and centers, or personal relationships spanning industry-university-military, the web of connections far exceeds any attempts to quantify.

THE UNIVERSITY IS IN YOUR HANDS.
A history of successful non-violent student resistance at America's universities.

It isn't all bad news. Sure, the military has infiltrated every nook and cranny of our universities by holding hostage the financial sources of our education. But it is so important to remember this: sometimes they don't win. Sometimes, despite their high-tech weaponry and obscenely disproportionate budget they still fall victim to the power of the people. Student resistance has an inspirational history. From the Civil Rights Movement, the Berkeley Free Speech Movement, and Vietnam War protests have spawned some of the most incredible transformations that American society has ever seen.

Berkeley and the Free Speech Movement

On February 1st, 1960 four black students sat down at a Woolworth's coffee shop in the "white's only" section in Nashville Tennessee, spurring the wave of civil rights protest that would last for many years, and impacting both the antiwar movement and the student movement. In 1964 UC Berkeley students demanded freedom of speech from the oppressive administration who had banned political campaigning on campus. From what began as a vigil on the steps of Sproul Hall, in just two weeks erupted into a full-fledged Free Speech Movement. Political tablers from virtually every political club on campus continued to gather in the main plaza on campus, forgoing the campus policies and aggravating the administration. On October 1, 1964 Jack Weinberg, a tabler and student organizer, was arrested by Berkeley police under the authority of campus officials. However, the power of the student body proved relentless as thousands of people surrounded the cop car, seizing it as a stage for the vocal student crowd. It was 36 hours before the car was released.



A UCB free speech protester uses a cop car as a podium in Sproul Plaza. Thousands of students surround the car as organizer Jack Weinberg is held hostage by the Berkeley PD for 36 hours.

The movement continued to evolve throughout the fall of that year, as student groups ranging from the Young Republicans to the leftist Congress of Racial Equality supported each other and their movement relentlessly. No longer a simple protest to permit the students access to campaign on Sproul Plaza, students of the FSM asserted their right to protection from prior restraint on the entire campus. The Berkeley students wanted the administration to know that as students of the University they would not relinquish their constitutional rights as citizens. On December 3, roughly 1500 students entered Sproul Hall for the decisive sit-in, where 800 of them were eventually arrested. But their tactics proved successful, setting a precedent for the student movement of the power of direct action tactics. On December 8th the faculty senate endorsed student demands and with the induction of the new Chancellor in January the FSM demands were adopted as official school policy. Philosophy professor Joseph Tussman told the students gathered in Sproul Plaza that December, "I think at this point, the university is in your hands."

> ***"I am sorry about defacing the walls, but babies are being burned and men are dying and this university is at fault quite directly."-James Kunen SDS***

The Berkeley FSM showed students all over the country the power they had not only at their universities but in society. As the war in Vietnam continued to rage on, student protests were at the epicenter of the peace movement. Although the war produced mostly non-violent demonstrations, police brutality, government repression and ruthlessness often resulted in bloody encounters between police and protesters. The Bay area was a focal point of protest, and Berkeley students, realizing their power, used their newly freed voices to take to the streets in protest of racial injustice, poverty, and war. But all over the country students were speaking out against civil injustices, from racism and segregation in the south to coast to coast protests the American invasion of Vietnam.

Columbia University Says No to Weapons Research

In New York in 1968, at Columbia University, Students for a Democratic Society began to change the focus of their antiwar protest to illuminating their campus's complicity with the war. Along with opposing weapons research on campus, SDS demanded Columbia's withdrawal from the Institute for Defense Analysis, a consortium of 12 American universities doing research for the Pentagon. James Kunen, member of SDS describes IDA as the symbol for university involvement in the war machine, though "total contracts were rather meager compared to many of Columbia's other war efforts". [1]

On April 23rd 1968, SDS began an eight day occupation of President Grayson Kirk's office and five other university buildings that evolved into an eight week long student revolt against what student organizer Mark Rudd described to Kirk as "your support of Vietnam and American Imperialism--IDA and

the School of International Affairs".[1] Along with the resistance of campus complicity in weapons production was a demand that Columbia abandon its development of an elite new gym in the center of Harlem that would displace hundreds of families in a classist attempt to further dominate the poor neighborhood. The eight day sit-in ended in 700 arrests and inspired a massive movement involving thousands of students who subsequently shut down campus activity as usual. Classes were cancelled for the rest of the year and in place were eight weeks of teach-ins, student educationals, and massive organizing against the war.

An SDS flyer from Columbia '68. Text reads:
Students will no longer tolerate the university as authority which governs and supresses their life; training them to be racist masters or to research poison gases & plagues for imperialist wars. The students are fighting those who oppress them, just as the people of Harlem are fighting their oppressors. Together they will control the university or destroy it. The ashes of Columbia will be tomorrow's lesson. The fire's truth.
ROAR LIKE A LION, COLUMBIA WE HAVE OUR FINGER UP YOUR ASS!

"The Strawberry Statement", an account of the SDS induced Columbia shut down in 1968, is James Kunen's recollection of the events. His stories are not only inspiring and incredible, but hilarious. The groups tactics are explicitly detailed, as he recalls such mischief as shaving with the University President's razor, stacking up precious and valuable art pieces in front of the doors and windows to keep out the pigs, and soaping up the stairwells when the cops finally decided to enter.

Stanford Resists Classified Pentagon Research

The Civil Rights Movement spurred radicalism at Stanford University that lasted throughout the duration of the war. During "Freedom Summer" in 1964 thousands of university students traveled to Mississippi to register black voters, and Stanford had the largest contingent of any university represented. In the eyes of the nation, Stanford became a "hotbed of antiwar radicalism". Protests against the CIA's recruitment on campus accompanied all-night peace vigils and as sit-ins were becoming more and more successful, the stakes were raised. On April 3, 1969 a gathering galvanized students into action against campus war research. On April 9, several hundred students began a nine-day occupation of Stanford's Applied Electronics Laboratory.

During the occupation, the Stanford faculty senate voted to consider guidelines prohibiting military research that was taking place at the on-campus Stanford Research Institute. The occupation of the laboratory ended when the student body president called a meeting that drew 8000 people in protest of the university's involvement in weapons research. Students and faculty almost unanimously agreed, and the next day the faculty senate voted to end classified research on campus. Two weeks later the Stanford Board of Trustees were forced to sever the University's ties with SRI.

The Reagan-Era and Beyond

In 1983, Ronald Reagan introduced the infamous Strategic Defense Initiative, which would throw billions of dollars into research and development of what has become known as the "Star Wars" missile defense system. Following a two decade long period of stagnation in student protest, the Reagan-era increase in military funded research became an issue again, specifically at heavily Pentagon supported institutions such as MIT, Tufts and Harvard. Students and professors grappled with the idea of conducting research on the heavily classified program that was criticized not only as a vast waste of resources, but as the militarization of outer space. A petition was created, and in 1985 over 2000 faculty members across the country had pledged to refuse SDI research projects. Following student protests against Star Wars research, the Tufts faculty adopted a resolution stating that participation in SDI research was "inappropriate for the university".[1]

Now is the time at our university. It's time we got together and took action against this university for it's direct involvement in today's war and future imperialist wars, and demand the same of all institutes of higher learning. The actions of these students were not merely borne out of the sixties, and are not relegated to the past. Whether direct action, cooperation with the university, or direct pressure on the administration is the key, we can't just sit by and watch this university continue to use its prestige, power, and influence to perpetuate the war machine. Go read Kunen's book and then we'll seize Chancellor Greenwood's office! Who out there wouldn't want to shave with her razor?

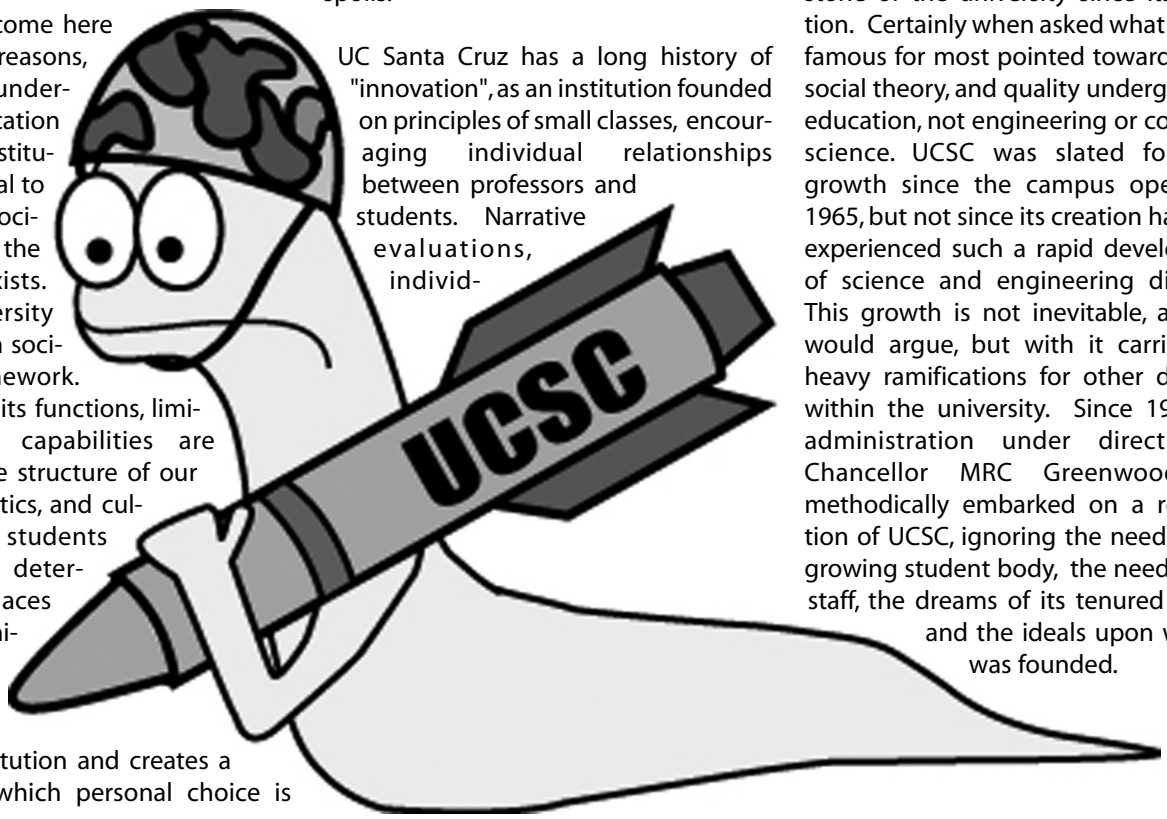
Whose University? Our University!

What Does the Future Hold for America's Educational Institutions?

People attend institutions of higher learning for various reasons. Some come to the university to meet social and parental expectations , or to escape the alternatives. Others are interested in the financial and social benefits that accompany a higher education, the ability to find a job in the increasingly technological economy, the possibility of obtaining power in a society with strict demands. Some students come to the university to study specific fields, and still others attend with the vague ideological desire for truth and knowledge in general. Caught up in unconscious social drift and the desire for personal enlightenment, it is a combination of these reasons that brings us together within the university.

While we all come here for our own reasons, in order to understand our location within the institution, it is critical to examine the society in which the institution exists. The university exists within a societal framework. More directly its functions, limitations, and capabilities are shaped by the structure of our economy, politics, and culture. While students individually determine their places within the university, it is the state which capacitates the institution and creates a structure in which personal choice is generally accepted and encouraged but only within a framework that will further benefit the bureaucratic forces that be.

In the decades following World War II, the needs of the American economy changed, and as the emerging economic superpower, rapid advances in technology and science were necessary. Thus, the university became a corporation: a factory of knowledge creation that no longer facilitated the desire for enlightenment or new ways in which to understand the world, but rather to produce a generic and maleable workforce that could benefit a government obsessed with newfound power and lasting global superiority. Big science became king, and nearly every university wanted in on the spoils.



UC Santa Cruz has a long history of "innovation", as an institution founded on principles of small classes, encouraging individual relationships between professors and students. Narrative evaluations, individually designed majors, and the creation of small colleges within the university set UCSC apart from other American institutions. According to founding Chancellor McHenry, "The planners sought to foster a sense of community among students and faculty to avoid deparmentalization and particularism by encouraging cooperation between the disciplines. Their purpose was to reach the 'whole' individual by blending academic endeavors with other aspects of living and personal development". (1)

Whether or not the original concept of UCSC was ever a reality, UC Santa Cruz has historically fostered an environment rich in Social Sciences and Humanities. These divisions have been the cornerstone of the university since its inception. Certainly when asked what UCSC is famous for most pointed toward radical social theory, and quality undergraduate education, not engineering or computer science. UCSC was slated for rapid growth since the campus opened in 1965, but not since its creation has UCSC experienced such a rapid development of science and engineering divisions. This growth is not inevitable, as some would argue, but with it carries very heavy ramifications for other divisions within the university. Since 1996. the administration under direction of Chancellor MRC Greenwood, has methodically embarked on a reformation of UCSC, ignoring the needs of the growing student body, the needs of the staff, the dreams of its tenured faculty, and the ideals upon which it was founded.

UC Santa Cruz is becoming a miniature Military Research Complex. What takes place within this university is a contribution to warfare and militarization at the expense of peace. We have discussed the militarization of our society, how it is impervious that the United States military retains, if not strenthens, its ties with America's universities. We have illustrated the UC's complicity in the production of weapons systems, as managers of the nuclear weapons laboratories, as recruitment centers for graduating scientists into the defense industry. It is now our place to rise up as students, use the power we have as living breathing conscious entities within such an institution, and demand the UC disarm our public centers of education.

The next few years will be a crucial period for UC Santa Cruz as well as for all universities. At Santa Cruz, the vast expansion of the Baskin School of Engineering that is slated to take place over the next decade, the creation of the research parks, the Silicon Valley research Center in Santa Clara, and the UC MBEST in Monterey, the misappropriated funding for humanities and social sciences, and the abolishment of much-needed humanities divisions will all contribute to a significant change in the way this institution operates, the graduates it produces, and the values that it represents. You don't have to be a conspiracy theorist to notice that this university is rapidly becoming more conservative.

The most popular major at UCSC, Psychology, has the worst student to faculty ratio within the university. With 1075 proposed majors in the 2001-2 academic year, UCSC employs only 29 Full Time faculty in the Psychology department. This means that for every faculty member there are 37 full time undergraduate students majoring in Psych. On the contrary, Computer Engineering (the 13th most popular major in 2001-2) employs 22 Full Time faculty in a department that instructs only 256 declared majors. The student-faculty ratio in this department is 11-1. These numbers are generalizable to the whole spectrum of Humanities/Social Science vs. Natural/ Physical Science and Engineering. (3)

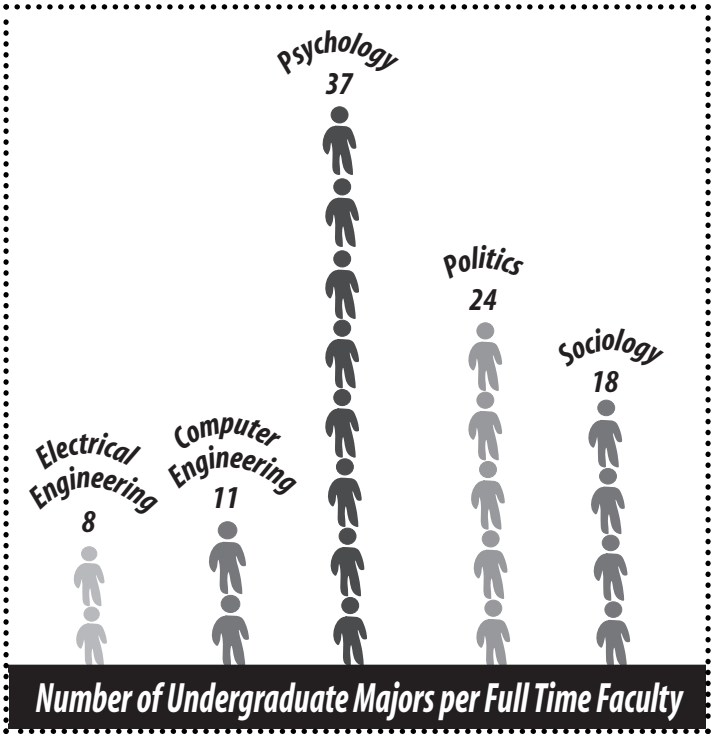
Is this to say that students within the Computer Engineering division are more worthy of forming close relationships with faculty? Does the coursework in this division necessitate a more intimate involvement of faculty with their students? Is UCSC trying to steer students away from the Social Sciences by not allowing them the opportunity to get to know their faculty more closely? Is it fair that students who come to this university to study Social Sciences (46% of the student body) are given less of an opportunity for small classroom learning and individual instruction? Should we continue to let this happen?

Why is this happening? According to MRC Greenwood, because science is profitable. In a document entitled Undergraduate Education in Science, Mathematics, Engineering, and Technology, Greenwood illustrates the necessity of "producing" scientists and engineers and raising the "scientific and technological literacy of all Americans". This is important, she emphasizes because the failure to accomplish this transformation will "undermine the wealth creation of this nation and its tax base... and undermine the quality of life we have come to expect". (4)

The fear that other countries will surpass our nation's ability to dominate the information and technological sphere is one that Greenwood has used to manipulate the direction of UCSC, which under her administration has begun the campus's transformation into a factory producing technocrats at the expense of a liberal well rounded education. Neglecting issues of human and social significance, Greenwood and the UC Regents adhere to the principals of "quality of life" for generations to come, which they believe are attainable primarily through technology and global economic/military superiority. Greenwood holds fast to statisics that other countries have begun to, and will continue to produce more scientists and engineers that the US and its European allies. "In 1990, six Asian countries produced more than one-half million Natural Science and Engineering baccalaureates, slightly more than the US and Europe".(4) Of course, as long as our institutions continue supporting the military, her fears are unfounded. The superiority of science and engineering is necessary not only to the economic advancement of the private sector, but more importantly to the sustainablity of a military force that will be threatened by no county, no matter how many scientists it produces.

Science is growing because it is profitable. Producing educators, social servants, and humanitarians does not create wealth for the individual, nor the institution to which they belong and represent. Producing writers, philosophers, historians, and artists doesn't allow us to invade countries rich in economically profitable natural resources. It doesn't facilitate the militarization of space, and domination of the earth, while ignoring political and humanistic needs.

It's interesting to note Greenwood's emphasis to "improve the science and technology literacy of all undergraduate students". This goal is being acheived by way of a declining literacy of all under-



graduate students.The recent decision of UCSC to cut the journalism program and increase the ratio of students to faculty in writing classes is a symptom of the obsession to steer students into science and engineering careers by denying them access to instruction of writing. Writing and journalism are curriculums that encourage student engagement and analysis, critical thinking and individuality. But what this institution is instead supporting is conformity, making students believe that the most important thing about education is the attainment of a diploma which will better serve you and your country economically.

The fear of the transformation of our institution is not new, it has merely been renewed through the realization that our university plays a pivotal role in the mechanization of warfare and the manipulation of young minds into future programmable robots who will take over the reins of the US as hegemonic superpower. In 1977, students collaborated on the production of Organize, a booklet that examined the history and future of the university and the "University of California's links to the relations of power, both in the US and internationally." Organize, a comprehensive guide to the history of the UC, its present situation in the national economy, and social issues such as institutionalized racism and women's rights was distributed to all incoming freshmen that year.

We, the students of UCSC, the ones who are here right now in the middle of all this madness, have a substantial responsibility. We owe our educational careers to the future students of this university, the future generations of Americans who will grow up in an increasingly militarized state, and the future generations of people all around the world who live in the shadow of the most repressive and dominant military power to ever exist. We need to sever the military's stragling grasp on science and technology, and use our resources to create a more peaceful and sustainable environment.

The Coalition To Demilitarize The University Of California; Members, Contacts, and Resources.

Tri-Valley CAREs
www.trivalleycares.org
Contact: Tara Dorabji
taradorabji@yahoo.com

Nuclear Age Peace Foundation
www.wagingpeace.org
Contact: Michael Coffey
youth@napf.org

Western States Legal Foundation
www.wslfweb.org

Concerned Citizens for Nuclear Safety
www.nuclearactive.org

Los Alamos Study Group
www.lasg.org

Fiat Pax (UC Santa Cruz)
www.antiwarnetwork.org/fiatpax
or www.fiatpax.org
Contact: fiatpaxucsc@hotmai.com

UC Berkeley
Contact: Valerie Kao
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Contact: Larry Pack
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UC Los Angeles
Contact: Michael Cox
mjcox04@hotmail.com

UC Santa Barbara

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UC Manages Armageddon

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Fiat Pax

As students of the University of California, we demand the immediate and full disarmament of our institution.

WHEREAS University faculty receive funding for research of weapons systems for the United States military;

WHEREAS the LANL and LLNL nuclear weapons laboratories are managed by the University of California,

WHEREAS the UC invests in weapons manufacturers and corporations that profit from war;

WHEREAS the University facilitates a relationship between the US military and UC students, staff, and faculty;

We demand that the UC abandons its pursuits of war and adopts principles of peace to guide its governance, research, and education.

University of California Santa Cruz, 2003