CARL FELDBAUM

BIOTECHNOLOGY INDUSTRY ORGANIZATION

BEYOND IMAGINATION

For **Carl Feldbaum**, president of BIO, his mission in leading the industry association is more than just professional, **it's personal.**

BY TAREN GROM

HELP WANTED:

President of a new biotech industry association, no industry experience necessary. Position has enormous promise for personal and professional growth.

"In 1992, I didn't know a single person in the industry," Carl Feldbaum says. "But this is America and you can answer an ad and hope for the best, which I did. Three months later I landed the job."

The job Mr. Feldbaum landed in 1993 was president of the Biotechnology Industry Organization, also known as BIO. Today, less than a decade after responding to an ad in a CEO journal, he leads one of the most influential healthcare associations in the United States. As president of BIO, Mr. Feldbaum has been instrumental in molding the association's mission and growing the membership from about 300 companies to more than 1,000 biotechnology companies, academic institutions, state biotechnology centers, and related organizations in all 50 U.S. states and 33 other nations.

"Back in 1992, I had just completed work as chief of staff for Senator Arlen Specter, my home state senator, and I picked up a CEO journal and found that the board was seeking to establish a single biotech industry association," Mr. Feldbaum says. "I thought my undergraduate background in biology and my graduate background in law, plus some of my political communications experience might be able to make a difference.

"In 1992, the human genome project and the full promise of biotechnology was a mere twinkle in the eye, but I believed in them then; I don't think I could have imagined or anticipated what BIO could become on behalf of the industry," he says.

Now nearly a decade later, Mr. Feldbaum and BIO are on the verge of witnessing the type of breakthroughs that were unimaginable at the association's inception.

"As much hype as the human genome and its implications has generated, I think it has been understated, and I've never said that before,"Mr. Feldbaum says. "I don't think people understand the magnitude of the ramifications that will come from the decoding of the human genome, and the ability to unlock the genome of other animals, of plants, of various bacteria and microbes.

"Our ability to actually organize and analyze this wealth of information is going to have an overwhelming impact. All this genomic information, from whatever source, will result in not just in an enormously different human healthcare industry but will enormously affect veterinary biotech, the food and agricultural industry, aquaculture, and forestry. There will be many, many new industrial and environmental applications."

FELDBAUM

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According to Mr. Feldbaum, there will be a proliferation of applications and perhaps the development of whole new industries based on genomic information.

"I don't even know what we're going to call them," he says. "We may call them biotechnology and we may call them something else. Remember, in the past, new companies sprung up on the basis of knowledge, in some cases a single gene. Now with the hundreds of thousands, indeed millions of proteins that would be uncovered through genomic research, the economic opportunities will be fairly astonishing.

"One executive describes what he sees in the industry as exponential biotechnology," Mr. Feldbaum says. "I would say the growth potential is a least geometric."

Growth in the industry is indeed geometric. BIO was established in 1993 through the merger of two smaller trade associations. The two factions had different ideas about the kind of person — scientist, politician, or business executive — to whom they were entrusting the mission of the new association.

The board chose wisely, choosing somebody with experience in science, politics, and business. "I went through an extensive series of interviews and screening by an executive search firm before the board made a decision, about three months later," Mr. Feldbaum says. "But it was well worth it. I thought this position would have enormous promise for growth, personal and professional. And I was right."

Mr. Feldbaum's motivation in promoting BIO's goals stems from personal experience. "As a cancer survivor, I was the beneficiary of a new biotech diagnostic that helped me get treated. So this is not just a professional challenge, this is a mission for me.

"I'm more motivated than ever. My dad passed away recently from metastatic melanoma, but he fought a 10-year battle that was greatly assisted by a biotech company that made a vaccine for him. This afforded him remissions of three and four years respectively. It was not just a matter of his longevity, it was a matter of the quality of life that he had. And it was quite wonderful.

"While it's an extreme professional challenge — sort of a high-wire act, dealing with the administration, Congress, and the FDA — this is actually somewhat secondary to my primary motivation, which happens to be intensely personal."

Mr. Feldbaum's involvement in BIO's tripartite mission — advocacy, education, and

economic — is all encompassing. He is involved in every aspect of the association's efforts, from lobbying to testifying before Congress to meeting with local grass roots organizations to organizing and fostering investment opportunities for member companies.

"First is advocacy, which is the traditional orthodox role of many Washington, D.C.-based trade associations," Mr. Feldbaum says. BIO's initiatives include lobbying Congress and the administration, the White House, and critical federal agencies such as the Food and Drug Administration.

Part of BIO's initiatives include promoting the industry to mass audiences. The association has commissioned a 30-second television piece that plays in Washington on Sundays around "Meet the Press," "Face the Nation," and other shows that are watched by politicians and congressional staff. The ad also runs on the weekends in the town of Crawford, Texas, where President George W. Bush spends time on his ranch, often with the White House press corps and other officials.

"We find that's a very focused, affordable way to raise the level of consciousness among key decision makers," Mr. Feldbaum says. "We actually have some fun with it as well. Back in 1998, we assaulted President Clinton and the White House press corps when they were on Martha's Vineyard, with seven radio ads a day, which cost all of $60 a minute.

"We've found ways within our budget to get our message across in some innovative ways. We try to be as innovative in our communications and our advocacy as our member companies are in their science."

Education is the association's second mission. Because of the news worthiness of the biotech industry's activities, Mr. Feldbaum spends about 30% to 40% of his time on education, taking time on the phone and in person explaining what biotech is, its benefits, discussing issues, and in particular bioethics matters.

"When I ask the typical person on the street, 'What do you think of biotechnology?' The answer is, 'You tell me what it is and I'll tell you what I think.' People really do want to know about biotechnology. Religious leaders are eager to participate in discussions with us. It's not a matter of a standoff or keeping us at arms length, people really want to engage and we're here to engage with them."

Even when the news is not all good, Mr. Feldbaum is committed to building credibility for the industry. "The way we do that is by telling the truth, again and again and again," he says. "The industry takes some hits. I tell our members, 200 and some years ago, the


CARL FELDBAUM

Carl Feldbaum on ...

IN AN EXCLUSIVE INTERVIEW WITH PHARMAVOICE, CARL FELDBAUM GIVES HIS VIEW ON THE HOT TOPICS OF TODAY

...THE HUMAN GENOME PROJECT

I think scientifically and economically we are ready for the implications of the human genome project. There are some outstanding ethical questions that we need to grapple with and in that area we are not ready, because the institutions don't even exist to handle some of these issues. About five years ago, President Clinton established a president's commission on bioethics. It was a new institution without much of an agenda at the time, but all of a sudden Dolly gave it an agenda. I think the establishment of new institutions, like the presidential commission, are going to be necessary so that as a culture we feel comfortable moving ahead at the pace of science. That involves the inclusion of not just scientists, industry people, and academics, but also folks with different religious and social perspectives.

...INDUSTRY INVESTMENT

I don't think much can be done to ensure a steady stream of financial backing. The CEOs of biotech companies are typically innovators or entrepreneurs and they are risk-takers. This is a crowd that has grown up with the ups and downs and the financial cycles. I can't say they are happy about them, but they are much more comfortable with them than they used to be. They are quite resilient and they are willing to go to any length to raise money when they need to. When the financing windows are closed in the public markets they go to private funding. I have confidence, and they have confidence, that they are increasingly able to survive down cycles.

...THE FDA

We work very closely with the FDA. I want to make this clear, not on individual drug applications, but we work with the FDA on streamlining procedures for biotech products.

We had a great deal of success in passing the 1997 FDA Modernization Act, which is currently up for five-year review. We are currently talking to all of our member companies about how that has affected their relationships with the FDA and what we can do as an industry to renegotiate some of those terms for next year.

Every five years, the prescription drug user fee act is revisited. And that gives the industry a natural opportunity to not just talk about user fees but also talk about the purpose to which they will be put, in detail. Back in 1997, that gave us an opportunity to which we availed ourselves of to pretty much revamp the way biologics are dealt with. But the system still isn't perfect, by any means.

framers of the constitution had to decide between a fair press and free press. They chose a free press. And that's the way it is, and I think they made the right choice and we have to live with it. There are going to be stories that are inaccurate or negative and we have to live with those. At BIO, we never complain. We just move on."

According to Mr. Feldbaum, the third part of BIO's mission is to provide an economic umbilical connection to member companies through business development activities.

"We don't make deals for our companies, and we would never presume to do so, but we have established for the industry a global network of CEO and investor and partnering meetings," he says. "I think these have helped to catalyze the success of many of our members, particularly small entrepreneurial companies."

BIO's more than 1,000 members include about 30 big pharmaceutical companies, the rest are either midsize or small biotech companies, in addition to about 150 universities. According to Mr. Feldbaum, it is unusual for a trade association to have that academic component, but it adds greatly to the credibility of BIO's voice.

BIO members are involved in the research and development of health-care, agricultural, industrial, and environmental biotechnology products.

Mr. Feldbaum is modest when asked to describe his influence in molding BIO's mission. "What I have been able to do is recruit a very fine staff; BIO is one of the best trade associations the Capitol has ever seen," he says. "I get input from members on precisely what issues need to be tackled here in Washington, and what programs we should institute that would be of maximum benefit to our association's members and put those in place.

"I've been very influenced by the chairs of BIO and by the board of directors. We have absolutely one of the best staffs any trade association has ever had in the Capitol."

Mr. Feldbaum's personal touch is most noticeable in his dealings with the public.

"I recruited an extremely competent staff, which is on Capitol Hill everyday, to portray our policies to Congress," he says. "I find that my time is pretty well spent addressing other sectors of the public and the media. Increasingly, I'm spending time with religious leaders and bioethicists. I'm also spending time addressing public meetings, including rotary clubs and the like. It's very important for civic groups to under-

FELDBAUM

Biotech is where the action is. Now, CEOs of the small companies say, 'I don't have to make a bad deal. I'm not in a weak position.

What is important is the FDA's ability to recruit and retain top scientists. One of the problems is that the FDA's top people have often been recruited by industry, and that creates a problem for us. What BIO has suggested to the FDA, and which I will suggest again once a new commissioner is selected and confirmed, is that the FDA's personnel be put on a basis more like the Federal Aviation Administration, which allows for bonuses and a pay scale that is more in keeping with the industry they regulate.

It's important to the FDA to have the very best people because we need them to review our science. They have to be up to speed. So they can't just be bureaucrats, with a 10-year-old knowledge of some particular scientific discipline. They really have to be up to date.

We're going to continue to push a whole new personnel design for the FDA. BIO is one of the strongest fighters for FDA appropriations. We want to make sure that the FDA has the resources to deal with biotech's pipeline of drugs.

It's an interesting position to be in, because not too many regulated industries fight for their regulators they way we do.

The FDA needs to continue to be the global gold standard. So our going in principle is to recommend nothing that diminishes standards of safety or efficacy.

As the biotech industry develops and the types of products — part device, part gene therapy, all kinds of combinations — begin to develop, I think some restructuring is necessary. But I wouldn't presume to tell the FDA how to do this.

... PRICE CONTROLS

Price controls have never worked. And they never will. Count the number of innovative new drugs that the former Soviet Union developed. The term price controls, is one that is unpopular all over Congress, yet Congress will try to bring in price controls through the back door. These so called reimportation statutes that were introduced are an indirect way of establishing price controls, but no one will say they are for price controls. People say they aren't for price controls, but then they will put forward provisions in MediCare and other legislation and reforms that are on the sly side.

This is a delicate issue, particularly with the fact that many, many biotech companies are developing drugs for age-related diseases. Various cardiovascular diseases, Alzheimer's, and Parkinson's, and various age-related cancers, so we have a mutual interest with the MediCare population for access. The MediCare population needs to have access to our drugs and we need to have access to that population.

... A NEW FDA COMMISSIONER

Frankly, the list shifts from week to week. By the time you go to press, the list I have in my mind would probably not be accurate. We've made the point that the administration needs to get on to this appointment, because a headless FDA is not helpful. We have discussed naming a biotech executive to the position with members of Congress and members of the administration. There should not be a litmus test that disqualifies someone who has had industry experience. Just as there should not be a litmus test that disqualifies somebody who has had FDA experience or who has been in the public sector.

(Editor's note: PharmaVoice asked Mr. Feldbaum if he would consider becoming the next commissioner of the FDA. His response: "I'm highly unqualified. And, I can say, if nominated I would not run, if elected I would not serve.")

stand what biotechnology is and what we stand for.

"When we build that grass-roots support among civic groups, it helps us politically, it helps with issues, it helps with the media, it helps in every way."

As biotechnology and its impact on drug discovery moves from science fiction to practical application, BIO faces complex issues, including intellectual property protection, regulatory reform, and venture capital.

"Those three areas come up every year, but I continue to believe the biggest challenge we face involves dealing with bioethic issues," Mr. Feldbaum says. "Some are quite discreet and specific, such as human cloning and stem-cell research and xenotransplantation. Others involve long-term issues, such as the handling of genetic information and medical privacy. These are challenges that will go on for a good 10 years, probably more."

FELDBAUM

We have developed a whole series of global business development conferences and through those we bring in foreign biotech associations.

Even as President Bush ended months of uncertainty when he narrowed the uses of federal funds for stem-cell research, announcing that government money can only be used to conduct studies on embryos that already have been harvested and examined by scientists, he left open the door for future debate. (See related box on page 60.)

"I don't think the administration thought, and I can tell you quite honestly I did not think stem-cell research would be the No. 1 national issue as we speak," Mr. Feldbaum says. "This is a true intersection of biomedical research and religious fundamentalism. And this is a tough one. This is in some ways reminiscent of the Scopes trial in Tennessee back in 1925 over the teaching of evolution.

"This is getting down to some fundamentals," he says. "But in an odd way, the stem-cell debate has been a remarkable educational vehicle for us to get people to understand the potential benefits of biotech. We are miles ahead in terms of congressional and public perception about the benefits of biotechnology. Behind the publicity, you have to have the goods, and we're carrying them."

The biotech industry certainly appears to have the goods, since the industry recently has had tremendous success in terms of regulatory approval of new drugs and devices.

"Biotech is where the action is," Mr. Feldbaum says. "Our CEOs are getting tougher about the types of deals they are willing to make. A number of biotech companies have become major, vertically, integrated drug companies. There's a whole new cadre of successful companies. And now, CEOs of the small companies say, 'I don't have to make a bad deal. I'm not in a weak position.' They have added confidence and that's begun to show."

Mr. Feldbaum says the industry's recent success can be evaluated quantitatively and qualitatively. "Biotech companies and their research have matured so that the biotech pipeline is fuller than ever," he says. "There's a virtual sunami of new biotech drugs at the FDA. That's the quantitative factor.

"The qualitative factor is that the companies also have matured in a way that they have experience with clinical trials. And they have learned how to make their presentations to the FDA and they've proved that. I think that's the second factor."

The U.S. biotech industry has emerged as a real superpower globally, and as such BIO's executives find themselves treading carefully when it comes to international policies and politics. "Where there is great opportunity for binding energy is in the business development field," Mr. Feldbaum says. "We have developed a whole series of global business development conferences and through those we bring in foreign biotech associations, foreign biotech companies, and get the opportunity to discuss policy in the context of business development, which seems to be much more acceptable. That's the vehicle we are using to communicate internationally."

Developing a global biotech organization is part of the agenda, but Mr. Feldbaum believes that an international organization will probably occur first in the food and agriculture sector, with the bio/medical sector following within the next five years.

"An international association can help, if it isn't just a debating society," Mr. Feldbaum says. "The problem that BIO has had is that we have just been up to our ears in domestic policy battles of great intensity, like the stem-cell issue. We have devoted enormous resources to building a firm policy foundation for the U.S. biotech industry and have not yet developed the resources to go global, except with business development."

Even as he spearheads initiatives to establish a firm foundation for intellectual property protection, streamline regulations, and propose tax incentives to invest in biotech, Mr. Feldbaum believes the biggest challenge the industry faces will be bioethics.

"I think that's where the real action will be looking out seven to 10 years," he says. ✦

Feldbaum, there from the beginning

CARL FELDBAUM - RESUME

THE FIRST TO SERVE. In 1993, Carl Feldbaum was named as the first president of the Biotechnology Industry Organization (BIO) in Washington, D.C., which represents more than 950 biotechnology companies, academic institutions, state biotechnology centers and related organizations in all 50 states and 33 other nations. BIO members are involved in the research and development of healthcare, agricultural, industrial and environmental biotechnology products.

SPECIAL PROSECUTOR. Mr. Feldbaum came to Washington in 1973 as an assistant special prosecutor for the Watergate special prosecution force to work with Archibald Cox on the Watergate scandal.

CHIEF OF STAFF. Before his appointment as president of BIO, Mr. Feldbaum was chief of staff to Senator Arlen Specter (R.Pa.). He also was president and founder of Palomar Corp., a national security "think tank" in Washington. Before founding Palomar, Mr. Feldbaum was assistant to the secretary of energy, and served as the inspector general for defense intelligence in the U.S. Department of Defense.

DISTINGUISHED SERVICE. In 1979, Mr. Feldbaum was awarded the Distinguished Civilian Service Medal from Defense Secretary Harold Brown. He received the Christopher Medal for his book *Looking the Tiger in the Eye: Confronting the Nuclear Threat*, which was designated by the New York Times as a notable book of the year for 1988.

PRINCETON UNIVERSITY, PRINCETON, N.J. Mr. Feldbaum received a bachelor's degree in biology from Princeton University and a law degree from the University of Pennsylvania Law School.

PERSONAL. Mr. Feldbaum lives in Maryland with his wife.

PharmaVoice welcomes comments about this article. E-mail us at feedback@pharmalinx.com.

Carl Feldbaum and others react to stem-cell guidelines

BIOETHICS AND POLITICS

On August 9, 2001, President George W. Bush narrowed the uses of federal funds for stem-cell research, announcing that government money can only be used to conduct studies on embryos that already have been harvested and examined by scientists.

President Bush ended months of debate on the issue, stating that his decision balanced concerns about protecting life and improving life. His decision reverses a campaign promise at the risk of upsetting some of his supporters.

President Bush said federal funds only could be used to further study existing "stem-cell lines." These are cells already extracted from embryos that are continuing to divide in petri dishes and test tubes in U.S. laboratories. Stem cells are created by removing an inner cell mass from a 5-day-old to 7-day-old embryo. This procedure kills the embryo. When properly nurtured, the cells are able to replicate or divide, virtually forever, creating what is called a stem-cell line. Stem cells are capable of developing into any of the body's organs but not into a complete individual. These cells form inside an embryo a few days after fertilization.

President Bush also announced the creation of a presidential Council On Bioethics made up of scientists to further study and monitor research on human embryos. The council will be chaired by Dr. Leon Kass of the University of Chicago.

CARL FELDBAUM

Biotechnology Industry Organization

"We appreciate the difficult decision President Bush faced regarding federal funding of stem-cell research, and we are pleased that the President determined the need for this research to continue," says Carl Feldbaum, president of BIO. "This was a good, clear, balanced outcome.

"As the President pointed out, advances in stem-cell research could impact the lives of millions of desperately ill Americans who suffer from conditions for which there are no treatments, including Alzheimer's and Parkinson's diseases, various cancers, diabetes, and spinal cord injuries. The President's decision is a major step forward for patients and the biotech industry.

Mr. Feldbaum says however, among all the conditions that President Bush placed on this research with which we wholeheartedly agree, BIO has one reservation, which he believes will be worked out in time.

"Placing a limit on the number of cell lines available for this research may place roadblocks to medical progress, some of which may take years to overcome," he says. "This is a relatively new area of medical research, and to preemptively limit the pathways in which researchers are able to work so early in this process may well be detrimental, may cost years, even lives.

> Placing a limit on the number of cell lines available for this research may place roadblocks to medical progress.
> **CARL FELDBAUM**

"It may take five to 10 years for researchers to develop the full potential of stem-cell research. In the meantime, we must not allow the discussion of ethical issues or this valuable research to come to a halt.

"Again, we are very pleased with President Bush's concern for both the need for this critical research to continue, and for the ethical questions involved to be continuously and thoughtfully considered."

JOE PANETTA

BIOCOM/San Diego

BIOCOM/San Diego supports President Bush's decision, which has significant implications for San Diego's biotechnology industry, because of the extensive work that is being done in research institutes and companies to develop therapies and products for which basic research involving stem cells may be a key component.

"The President has shown great insight in deciding to continue funding for this important aspect of medical research," says Joe Panetta, BIOCOM/San Diego's president and CEO. "The decision shows that a proper balance can be maintained between addressing ethical concerns and furthering research that could lead to important medical advances.

"We are somewhat concerned with his choice to limit the number of cell lines available for this research and believe this may delay progress in research that is critical to millions of Americans. However, we are eager to continue dialogue on the ethical issues surrounding research."

BIOCOM/San Diego is the regional association for the life-sciences community, whose members include about 400 members of the biotechnology industry, public and private research institutes, governmental organizations, and a significant group of service providers to the industry.

BELLE TAYLOR-McGHEE

California Abortion and Reproductive Rights Action League

President Bush's decision severely compromises future scientific progress, according to the California Abortion and Reproductive Rights Action League (CARAL). In essence, the President's proposal limits funding to existing colonies of stem cells, which will restrict research and handcuff scientists as they search for new medical treatments and cures.

"The country was desperate for leadership on this issue and President Bush ducked," says Belle Taylor-McGhee, executive director of CARAL. "The President's compromise is shortsighted. He chose to hold science and health hostage to anti-choice politics.

"Extremist antichoice politicians and groups like the National Right to Life Committee and the American Life League stood alone in opposing embryonic stem cell research," Ms.

Taylor-McGhee says. "The President was wrong to cave to their demands. President Bush's decision shows a lack of foresight. We can only hope that members of Congress step in, fill the leadership void, and provide adequate support for this vital research."

GARY L. BAUER

American Values

I am saddened that President Bush has opened the door to the destruction of innocent human life with his decision on embryonic stem cell research," says former presidential candidate Gary L. Bauer and president of American Values. "The decision violates a basic life principle — that from our conception until our death at any point, we are all endowed by our creator with certain rights — including the right to life.

"With all the talk about the administration trying to find a 'Solomon like' decision on stem-cell research involving innocent, unborn children, people seem to forget that Solomon's goal was to save the baby, not split him in two. This split decision, asks the taxpayer to subsidize research on cells that came from destroyed human embryos. But more importantly, many other innocent, unborn children will be sacrificed if the research on embryonic stem cells yields so-called 'good results' at any point.

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> **GARY BAUER**

SAMUAL B. CASEY, JD

Christian Legal Society

The United States' largest association of Christian lawyers and law students expressed great relief that President Bush will not permit any federal funding for the destruction of more living human embryos, but serious concern that the President is proposing to fund research on 60 existing stem-cell lines already derived from the killing of living human embryos that would violate the existing federal law banning such funding.

On the positive side, Samuel B. Casey, JD, executive director and CEO of the Christian Legal Society, praised the President for supporting adult stem-cell research and having the moral courage to stand against any use of federal funds that would encourage the further killing of human embryos. On the negative side, Mr. Casey criticized the decision saying, "obviously, this is a 'political' compromise that still violates existing law; breaches the spirit, if not the letter, of Mr. Bush's campaign promise not to use 'taxpayers funds... to underwrite [any] research the involves the destruction of live human embryo;' sets us on a 'slippery slope;' and satisfies neither side while failing to acknowledge that human embryos are human beings that should never be used for destructive scientific experimentation.

According to Mr. Casey, "the destructive human embryonic research President Bush now wants to fund is illegal not only under current federal law, but also state law in several states such as Pennsylvania, Massachusetts, and Louisiana."

Mr. Casey also serves as senior counsel for Human Life Advocates representing the plaintiffs in the pending legal action challenging NIH regulations issued last year to fund destructive human embryo research. The suit claims that the regulations violate existing federal law banning such funding. When asked what impact the President's decision will have on the pending litigation, Mr. Casey states, "On behalf of our plaintiffs we will now go back into court to gain a preliminary and permanent injunction barring any federal funding of any embryonic stem-cell research under these illegal regulations. The existing regulations are also inconsistent with the much more limited policy President Bush announced last night, so it is as yet unclear whether the government will resist our request for an injunction against these regulations or will just agree to withdraw them. Undoubtedly, new regulations in conformity with federal law will have to be proposed, perhaps, by the new presidential council."

> The destructive human embryonic research President Bush now wants to fund is illegal.
> **DR. SAMUEL B. CASEY**

In any event, Human Life Advocates anticipates that powerful biotechnology-industry lobbyists also will be going to court and Congress to try to get federal tax dollars for more stem-cell lines than the 60 existing stem cell lines the President indicated he is now willing to fund.

"We will oppose such efforts, and now call on the President to veto any such legislation," Mr. Casey says.

DAVID STEVENS, MD

Christian Medical Association

The nation's largest association of Christian physicians says President Bush's decision to allow federal funding of embryonic stem-cell research crosses a crucial moral line and warned of the consequences of breaching the long-standing medical principle of "do no harm."

David Stevens, MD, executive director of the Christian Medical Association says, "Like many who heard the President's decision, I came away both encouraged and concerned. I was encouraged to see our President commit to funding the tremendous promise of adult stem-cell research — an alternative that may enable us to solve the problems of diabetes, Parkinson's, and a host of other chronic diseases. And I was encouraged to hear of the formation of an advisory council that will continue to examine the important ethical aspects as well as the scientific progress of stem cell research.

"But as a physician who represents thousands of physicians and research scientists who find it morally unacceptable to destroy human embryos for the purpose of experimentation, I am also deeply concerned," Dr. Casey says. "I am concerned that by funding research on stem cells taken from embryos who were previously destroyed, we are breaking down a vital moral barrier. This moral barrier is embodied by the long-standing ethical medical principle of 'do no harm.' This moral barrier is also embodied by the biblical principle, 'Thou shalt not kill.'

C. BEN MITCHELL. Ph.D.

The Center for Bioethics and Human Dignity

The Center for Bioethics and Human Dignity is disappointed that President Bush did

not completely ban federal funding of embryonic stem-cell research, but is pleased that tax dollars will not be used to fund research requiring the destruction of more human embryos.

C. Ben Mitchell, Ph.D., senior fellow of The Center for Bioethics and Human Dignity says, "The President's compromise is disappointing but not entirely disheartening. We should not use tax dollars to fund research which is complicit with embryo destruction. Since human embryos were killed to obtain the stem-cell lines, those cells are morally tainted. All the more, this research is likely unnecessary given the tremendous progress in using stem cells from morally unproblematic sources such as umbilical cords, placentas, and adult tissue.

"Fortunately, the President drew a clear line in the sand stating that federal funds would not be used to destroy human embryos. It is unfortunate though that federal money will be used to promote research that, if treatments ever come from it, many conscientious citizens will refuse because it comes from destroyed human embryos. It is better to promote research that all American's can unequivocally support."

DANIEL PERRY

Alliance for Aging Research

"President Bush had the opportunity tonight to stand tall in the eyes of millions of Americans suffering from life threatening diseases," says Daniel Perry, executive director of the Alliance for Aging Research. "Instead, to our disappointment, the President embraced too-limited of an approach to the potential of human embryonic stem-cell research. By agreeing that public funding and public oversight is called for in this area, he took a step in the right direction, but to the frustration of research advocates and patients, it was too modest.

"We are saddened that President Bush failed the leadership test and cast a shadow on the hopes of patients and the promise of science. We had hoped the President would have joined the ever-growing number of conservative and pro-family national leaders, such as Tommy Thompson, Nancy Reagan, and Bob Dole, who understand that a pro-life ethic includes making life better for the living. Americans who are suffering from the devastating effects of diseases like diabetes, Parkinson's, and spinal cord injuries will have their waiting periods cruelly extended.

"Slowing the progress of such a promising avenue of research is difficult, if not impossible, to justify to people who are facing catastrophic illness," Mr. Perry says. "Federal research funds should be used to develop the full potential of both embryonic and adult stem cells. It is folly for government to dictate to scientists where the most promising leads may lay."

The restricted number of cell lines scientists will be researching under President Bush's plan will curtail their therapeutic potential because they may not represent a scientifically adequate range of genetic backgrounds. Far fewer people will benefit from this amazing form of regenerative medicine as cell lines will have to be carefully examined for any genetic abnormalities. Embryos derived from donors with a family history of cardiovascular disease, for example, may not be best suited for the derivation of cardiac muscle cells intended to repair damaged heart tissue.

The President's decision will not abate the voice of patients aroused by this debate. We have heard their demands and seen the faces of those suffering from devastating illnesses that could be greatly helped by the promise of embryonic stem-cell research. Poll after poll, including one conducted by the Alliance for Aging Research in June, has showed that majorities of Americans support federal funding of embryonic stem-cell research.

> We are saddened that President Bush failed the leadership test and cast a shadow on the hopes of patients and the promise of science.
> **DANIEL PERRY**

While Baby Boomers lead the way, Americans of all ages understand the vast potential of these miracle cells and want to benefit from the breakthroughs they can create. They are not concerned with political abstractions or religious ideology. They want the cures that science can bring forth, and they want them now.

"We next look to Congress to scrutinize what the President has proposed, especially the limitations he would place on public funding of embryonic stem-cell research," Mr. Perry says. "We will support Congress in shaping policies that will truly stimulate progress in this field in order to benefit patients as quickly as possible.

"It must not be the position of our government that the value for human life begin with conception and end at birth.

KEN CONNOR

Family Research Council

According to Family Research Council President Ken Connor, "This concession also puts the President on the wrong side of the principle. If 60 stem-cell lines are morally acceptable, then why not 600 or 6,000? Furthermore, the President did not address the issue of unrestrained private-sector research. If killing embryos is unacceptable in publicly funded institutions, how can it be moral when carried out in private laboratories?

"Moral principles are not divisible. Killing human embryos for research is wrong in every instance. The President is only stepping deeper into the moral morass."

TOM DELAY

House Majority Whip

Tom DeLay (R, Texas), house majority whip, issued the following statement following President Bush's decision to allow federal funding for limited human embryonic stem cell research:

"Last month at the White House, President Bush looked me in the eye and told me that he would make a decision on stem-cell research from his heart — not from politics or polls — and I believe that he has.

"I know the President made the decision he felt to be best for our nation and did place strict limits on the scope of the research. However, I'm still disappointed that the federal government will fund embryonic stem cell research even though the proposed research will take place upon embryos that have already been destroyed.

"While we all deeply sympathize with the desperate hopes of people struggling with debilitating illnesses, the technique used to create the stem cell lines did not respect the sanctity of life. We can both defend life and support medical research that offers similar results by using adult stem cells." ✦