

**A Publication of the Medical Humanities Program of Davidson College**  
**The Ethical View**  
**March 2005**

*Special Points of Interest:*

- Describe how a steady stream of improvements in transplantation surgery, immune suppression therapy and follow-up care has enabled more organ recipients to enjoy longer lives of better quality than could have been imagined only a generation ago
- Analyze why demand for organs has expanded much more rapidly than the supply
- Describe and discuss the ethical value tradeoffs that attend all efforts to expand the supply organs

**“Many people do not  
realize how easy it is to be an organ donor...”**

“25,468 patients received transplants during 2003, but 6,879 others died waiting, a rate of approximately 17 per day...”

Things to think about while reading  
this newsletter...

***FOCUS: ORGAN TRANSPLANTATION***

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## **Letter from the editor:**

“Education in the liberal arts develops the mental ability to move rapidly from one problem to another, to change frames of reference, to apply knowledge from radically different domains to practical problems.” --  
*T. Homer Dixon, The Globe & Mail, 1996*

Medical humanities in this liberal arts setting takes an interdisciplinary approach to the medical sciences and humanities. Eliminating the limitations of either discipline alone, students can apply their knowledge of both fields to create new and scintillating ideas. The Medical Humanities program at Davidson College is headed by Lance K. Stell, Ph.D. Through Dr. Stell’s guidance, students apply ethics, law, and politics to understand and analyze current medical issues. In addition, the combination of Davidson liberal arts and Carolina’s Medical Center has enhanced the quality and diversity of experience students receive through this program.

The *Ethical View* is a student-edited newsletter that serves to heighten public awareness of urgent issues the medical community currently faces. The Speas Symposium in Bioethics is the public outlet for discussion of the topics contained herein. To emphasize the purpose of this publication, I must agree with the 2003 editors of the *Ethical View*, Susanne Francis and Virginia Nimick who state that by creating an environment for learning, we hold the key to understanding. It is my hope that through the continuation of the *Ethical View* and the Speas Forum, the environment at Davidson will be primed for greater awareness, conviction, and motivation to change the current state of these ethical problems that affect us all.

The focus of this year’s Speas Symposium is Organ Transplantation. Especially exciting is the change in format that promotes greater student involvement. Traditionally, the forum has invited two keynote lecturers and several discussion leaders to facilitate conversation throughout the day. This year, student-run discussion sessions will bring students in more direct contact with professionals working through these issues every day. While the keynote speakers have increased to four, discussion will be directly linked to topics contained in their lectures. We feel this gives a chance for participants to more informally discuss issues raised by the keynote address.

Once again, the Bioethics Society is pleased to organize this interface between students and professionals working with these important matters. We hope that the discussion ensued will increase awareness and action regarding the critical issues facing the organ transplantation community. The topics to be discussed are listed below.

**Keynote #1:** Dr. Stuart Youngner, Case Western Reserve

### **Breakout Sessions:**

- “Celebrities, Felons, and the Elderly: Preference and Fairness in Transplantation”
- “Conceiving a Child for Living Donation: Is PGD a Use or Abuse of Assisted-Reproduction?”

**Keynote #2:** Dr. Robert Sade, Medical University of South Carolina

**Keynote #3:** Dr. Norman Fost, University of Wisconsin

### **Breakout Sessions:**

- “Cash for Organs: OK in Other Countries, But Not in America?”
- “Regenerative Medicine: Medical Progress or the Pursuit of Immortality?”

**Keynote #4:** Dr. Alan Buchanan, “Global Justice and the Allocation of Organs for transplantation”

## **About the editor:**

This year's editor of *The Ethical View* is Janelle Fassbender, a current senior at Davidson. Janelle has been involved with the Bioethics Society since her sophomore year and helped to organize last year's Speas Symposium regarding Pain Management. She is an avid supporter of Davidson athletics and works part-time for the Sports Information Department. The majority of her time spent outside the classroom and the Sports Information office is in the neuroscience lab where she is currently finishing research involving mechanisms of learning and memory in rats. Janelle will graduate in May with a Center for Interdisciplinary Studies degree in Neuroscience. In the Fall, she will attend the University of Louisville School of Medicine in Kentucky to pursue a M.D./Ph.D degree.

## **Remembering Lessons Learned:**

*"Conflict of Interest"*

March 21, 2003

**Keynote:** Mark Hall, J.D.

Professor of Law and Public Health at Wake Forest University

**Keynote:** Loretta M. Kopelman, Ph.D.

Professor and Chair of the Department of Medical Humanities at the Brody School of Medicine, East Carolina University

*"Managing Pain Ethically"*

March 26, 2004

**Keynote:** Lawrence J. Schneiderman, M.D.

Professor of Departments of Family and Preventive Medicine and Medicine at the School of Medicine, University of California, San Diego

**Keynote:** Stephen J. Morse, J.D., Ph.D.

Professor of Law and Professor of Psychology and Law in Psychiatry at the University of Pennsylvania Law School

# **Organ Transplantation: A Brief History and Overview**

**By Janelle Fassbender, Davidson College '05**

In the year marking the fiftieth anniversary of the first successful kidney transplant, physicians, medical scientists and ethicists reflect upon the history of organ transplantation. Even though Dr. Joseph Murray's surgical team performed the first kidney transplant between identical twins, there are "reports" of primitive forms of tissue transplants dating back to 800 B.C. in India. Supposedly in Holland in 1668, a portion of a dog's cranium was removed and implanted in a human skull to repair a defect. While these early accounts are documented, it is hard to ensure the validity and success of the transplantation.

The real advancements in whole organ transplants did not begin until the early 1900s. The first successes in kidney transplantation came in 1902 with experiments on animals. However, it was not until 52 years later that the method was rigorous enough to perform Dr. Murray's transplantation between human twins. Liver transplantations were attempted between dogs the following year in Albany, New York, and the first successful human transplant occurred in 1967 in Denver, Colorado. The successful human heart transplant in 1968 fueled the development of the field even further.

A major concern with this type of treatment is the rejection of the transplant by the body of the recipient. Immunosuppressive therapy developed in 1978 in the form of Cyclosporine has since propelled organ transplantation to new heights. The years following the advent of this miracle drug witnessed successes in heart-lung, double lung, and intestinal transplantations.

These isolated incidents of successes were revolutionary in the medical community. However, the development of more sophisticated techniques and anti-rejection therapies has made organ donation a daily procedure. The need for donor organs has rapidly become the major obstacle in the transplantation field. One person is added to the national organ transplant waiting list every 13 minutes, whereas only about 70 transplantation procedures are performed each day.

The United Network for Organ Sharing (UNOS) oversees and regulates all organ procurement centers across the nation. The national waiting list is contained within their computer system. When a patient is deemed eligible for a transplant, their name is added to a "pool" of applicants in the computer system rather than in a ranked list. This is due to the nature of organ transplantation. A recipient must have certain characteristics the donor shares, such as tissue match, blood type, and immune status. Although the list is not ranked, the time a person has been on the list is taken into consideration. Even still, at the time a match becomes available, the potential recipient must be able and willing to undergo major surgery immediately.

In 1977, UNOS was an initiative of the South-Eastern Organ Procurement Foundation that was established to develop the first computerized "waiting list." The system would efficiently match a donor to a person in need of an organ. By 1984, UNOS became an independent, non-profit organization that today is the only organization to run the Organ Procurement and Transplantation Network. The 40-member board that is responsible for the policy of the network makes decisions based on patient and donor family issues, medical issues specific to the various transplantable organs, needs and concerns of ethnic minorities and children needing transplants, among others. Ethical principles surrounding the field of transplantation are also considered by the board which represents a variety of individuals with diverse views in the field.

Many people do not realize how easy it is to be an organ donor. In many states, the most convenient way is to indicate that wish on your driver's license. However, you must notify your family of your choice. If a situation should arise in which you would be considered a candidate, your family will be consulted before action is taken by the hospital. States that do not go by this "first person consent legislation" either require consent from the next of kin or additional action beyond the driver's license. Massachusetts, New Hampshire, New York, and Vermont have currently passed legislation to enact the first person consent but some others have yet to do so. These states require next of kin approval before organ procurement may take place: Alabama, Georgia, Illinois, and Mississippi.

Misconceptions and urban legends also deter people from becoming organ donors. The belief that doctors or hospital staff will not do everything they can to save your life in an emergency situation if you may qualify for organ donation is a common misunderstanding. However, a person does not become a candidate for organ donation until they are proclaimed "brain dead," and everything will be tried to save a life before that point is reached. Moreover, there are no additional costs rendered to the family for the organ donation. Open casket funerals will still be an option, and all major religions approve organ donation and consider it a generous act of giving.

The continual development of transplantation techniques and medical science in general has given rise to alternatives to the waiting list. Living organ donations are an effective way to get organs fast if there is a matched donor willing to give an organ to save a life. Although the technique is not new, the first kidney donation was a living donation, methods to help both patients recover quickly and to avoid complications (i.e. anti-rejection therapy) have improved.

Other potential sources include growth of new tissue from stem cells. This highly controversial topic carries many implications for the transplantation community. The promise of "perfect tissue matches" that could eliminate need for immunosuppressive therapy is incredibly hopeful. Another source heated with ethical concerns is called pre-implantation genetic diagnosis to determine tissue type. By testing an embryo to determine its feasibility as a tissue match, there is concern about a violation of human rights and

“breeding” children according to their tissue type. Nevertheless, the supply of viable tissue and organs would increase tremendously and so would increase the number of lives saved daily.

Out of the more than 87,000 people waiting for an organ, 18 will die each day.<sup>6</sup> However, increased organ donation can change this trend. The number of organ donors fluctuates each year making the hope of receiving an organ hard to sustain. One way, we can increase the number of lives saved every day is to eradicate misconception and to neutralize ethical debates. It is our hope that through dialogue and discussion between medical professionals, ethicists, and students, we may make headway on these issues in order to improve the field of organ transplantation. Those of us at Davidson College hope to provide such an outlet by making Organ Transplantation the topic of our annual Frederick Womble Speas Symposium.

### Notes

1. <http://www.biol.tuskuba.ac.jp/~macer/EJ102/ej102f.html>
2. [http://www.portfolio.mvm.edu.ac.uk/studentwebs/session5/37/CL\\_otherhistory.htm](http://www.portfolio.mvm.edu.ac.uk/studentwebs/session5/37/CL_otherhistory.htm)
3. <http://www.unos.org/news/newsDetail.asp?id=384>
4. [http://biomed.brown.edu/Courses/B1108\\_2004\\_Groups/Group04/Organ\\_Transplantation.htm](http://biomed.brown.edu/Courses/B1108_2004_Groups/Group04/Organ_Transplantation.htm)
5. <http://www.unos.org/Resources/factsheets.asp?fs=4>
6. <http://www.unos.org/Resources/factsheets.asp?fs=3>
7. <http://www.unos.org/Resources/factsheets.asp?fs=1>
8. <http://www.unos.org/news/myths.asp>
9. <http://www.unos.org/Resources/factsheets.asp?fs=5>

## Organ Transplantation: How Far Have We Come, How Far Should We Go?

By Lance K. Stell, Ph.D. Charles A. Dana Professor of Philosophy and Director of the Medical Humanities

\*\*Organ transplantation substitutes host-graft disease for end-stage organ failure. It is the last resort treatment for patients with acute-irreversible or chronic-progressive heart, liver, lung or intestinal disease that would otherwise prove fatal. Patients with chronic renal insufficiency have dialysis as an alternative when a suitable kidney is unavailable or when transplantation is not feasible, however the medical literature indicates that kidney failure patients do better when a timely transplant forestalls resorting to dialysis altogether. From a strictly medical point of view, hemodialysis should be considered “last resort” for kidney failure.

### *Growing Demand, Restricted Supply*

\*\*A steady stream of improvements in transplantation surgery, immune suppression therapy and follow-up care has enabled more organ recipients to enjoy longer lives of better quality than could have been imagined only a generation ago. Indeed, organ transplantation has become routine, to the point that physicians and other transplant professionals no longer marvel at their successes nor do they agonize as they once did over the ethically problematic issues inherent in organ transplantation. Instead, powerful incentives created by Medicare’s final rule and its conditions of participation force them to spend more time worrying about how to eliminate bottlenecks and obstacles to organ procurement than they spend worrying about value-tradeoffs made along the way.

\*\*Improving survival rates and prolonging of graft function has also fueled an expanding demand for transplants, including among patients who would not previously have been considered eligible. A decade ago, HIV+ patients were not considered for transplantation because of their reduced life-expectancy

compared with other patients suffering from end-stage organ failure and because transplant-related immune suppression therapy was regarded as likely to accelerate HIV disease progression in already immune-compromised patients. Introduction of highly active antiretroviral therapy (HAART) in the mid-1990s has proven to delay HIV disease progression to the point where many of these patients will suffer end-stage organ failure long before they develop life-threatening conditions related to HIV infection. Currently, HIV+ status does not preclude eligibility for transplant and indeed, discrimination against a patient, solely in virtue of his/her disease, is illegal and unethical.

\*\*Similarly, elderly patients who once were precluded from transplant eligibility in virtue of advanced age are now transplanted because criteria that are directly relevant to determining eligibility, pre-transplant health status and expected survival, correlate imperfectly with age. Current data from The United Network for Organ Sharing (UNOS) indicate that 75% of heart transplant recipients, in the 6-10 year old age group are alive after 5 years, whereas 65% of heart transplant recipients in the 65+ age group are alive after 5 years.

In 1996, there were 49,223 patient registrations for cadaveric organs. In 1999, the waitlist swelled to 76,124 patients. In that year, 22,854 transplants were performed while approximately 3500 died waiting. Four years later the waitlist burgeoned to 83,731 patients. 25,468 patients received transplants during 2003, but 6,879 others died waiting, a rate of approximately 17 per day. As of February 2005, the waitlist had grown to 87,548.

Measures to increase the supply of organs have included: better transplantation network organization, implementing “best practices” in follow-up care to reduce the incidence of re-transplantation, improved training of procurement personnel and implementation of aggressive “required request” protocols backed up by demanding expectations regarding “conversion rates” (% recovered/donors eligible).

\*\*Other supply-enhancing initiatives have included raising the age limit for cadaveric donors, (donors over the age of 50 are routinely evaluated), increasing use of living donors, increased use of asystolic donors (“donation after cardiac death” or DCD). Expanding donor criteria has resulted in successfully transplanting organs recovered from donors who died of carbon monoxide, cyanide and methanol poisoning. Previously transplanted organs have even been reused. In aggregate, these measures have yielded a modest increase (roughly 10%) in the supply of cadaveric donors. However, it seems unlikely that current supply rules, no matter how aggressively implemented will close the gap with demand, given an aging population with ever expanding medical indications for transplant.

A libertarian strategy says address the demand/supply problem head-on. First recognize that transplantable organs are not “inherently scarce.” On the contrary, an acute shortage of organs predictably results from a *legal rule* that assigns a price of “zero” to an obviously valuable resource. The remedy? Adopt more enlightened rules that legally recognize property rights in solid organs and allow the price system (but not to exclude voluntary altruism) to distribute these valuable resources.

\*\*However, market-antipathy, based on moralistic opposition to organ commodification and donor-exploitation controls current policy. The National Organ Transplantation Act (NOTA, 1984) makes it illegal for “any person to knowingly acquire, receive, or otherwise transfers any human organ for valuable consideration for use in human transplantation if the transfer affects interstate commerce.” The most obvious cost of this moralistic position is those who die waiting but would have been transplanted under an alternative rule-regime.

Importantly, the law does not prohibit doctors, nurses, social workers, hospitals, drug companies and administrative support staff from receiving “valuable consideration” for what they contribute to the transplantation process. Indeed, each enjoys the option to price his/her willingness to participate, while

nothing prevents each to donate skills or resources as a gift. As a thought-experiment, suppose NOTA made it illegal for anyone, transplant professionals, hospitals and drug companies included, to receive valuable consideration for participating in transplantation. Might this marginally deter their participation in transplantation? Might the slightest temptation to do something else often prove decisive against it?

In fact, NOTA's mandatory altruism is selective and discriminatory. The rights of donors, who control access to the resource that is *sine qua non* for transplantation, do not include the right to price their willingness to participate. For them, NOTA's rule is "free or nothing." It follows that donors forgo nothing when they allow the slightest nagging unease resulting from inchoate feelings of distrust for doctors and hospitals, or distaste for the very idea of transplantation to tip the motivational balance against donation.

In 1983 and 1985, Gallup surveyed Americans to determine willingness to donate a kidney upon decease. 25% said they would be willing. Of those who said they would not be willing, approximately 15% said they "don't like to think about dying" while others said they "never really thought about it." 16% said they "didn't like the idea of somebody cutting me up." 15% feared "they might do something to me before I am really dead," and roughly 22% feared "the doctors might hasten my death if they needed my organs." Excluding incentives shields donors from considering how much weight they would assign to their reasons against donation, all things considered.

Once we focus our analysis on the incentives created by our current rights-assigning rules, it is all the more remarkable that deceased, non-directed donation is as common as it is. Our rules have incentive effects. We cannot escape responsibility for those effects that are reasonably foreseeable.

### ***Bring Your Living Donor With You?***

Since 1990, living donation (living related + living unrelated) has become the most rapidly increasing source for kidneys and, more recently, of liver segments for liver transplantation. In 2001, for the first time, living donors (6,510) exceeded the number of deceased donors (6,081). In 2003, the living donors (6,821) continued to exceed deceased donors (6,457). Unlike deceased donation which currently is premised on impersonal (non-directed) altruism, living donation is almost always "directed," i.e., the living donor not only knows personally and wishes to aid a particular recipient but most often is related to the recipient by marriage or blood. To a high degree of certainty, living donation would rarely occur otherwise.

\*\*The benefits to the recipient of living donation of a kidney are substantial, especially when done "preemptively." A study of a national sample of renal-transplant recipients found that pre-emptive transplantation of a kidney from a living donor, (namely, without the patient's having endured previous long-term dialysis), is associated with a 52% reduction in acute graft failure (loss of the graft in the first year of transplantation) and larger reductions in subsequent years. Factors associated with preemptive kidney transplant include higher socio-economic status, better compliance with follow-up care, and most importantly, a willing living-related donor. Regarding the ethnic demographics of living donors, UNOS data indicate no substantial change between 1993-2002: whites (83%), African Americans (13-14%), Asians (2-3%), and others (1%).

Living donation is premised on the informed willingness of a competent donor to whom the associated material risks have been disclosed. This squares accounts with our moral principle that a person should not be used or psychologically manipulated *merely* as a means in the production

of an expectable net-welfare gain (namely, that the recipient will gain more than the donor will lose). And unlike deceased donation, whose premise is impersonal altruism, in living (directed) donation, the (suitable) living donor knows that an identified life must face the long cadaveric organ waitlist in case of his/her unwillingness - a powerful donor motivator, but even so, often not sufficient.

From the perspective of medical ethics however, living donation must be considered inherently problematic. Notwithstanding the donor's informed willingness or even eagerness to donate, he or she does not "need" an operation. The loss of a healthy organ (or organ segment) cannot benefit her *medically*. On

the contrary, medically facilitated living donation frankly violates the ancient, patient-centered maxim, *primum non nocere* – first, do no harm! In one case of which the author is aware personally, a living related kidney donor is now hemodialysis dependent, *status post* donating her (left) kidney which had provided >70% of her renal function, a fact which should have been, but was not discovered in her pre-op work-up.

### ***Deceased Donation: A Duty?***

\*\*Arguably, organ donation upon one's decease should be regarded as a moral duty, because (1) it is likely that one's donation will make a substantial improvement in a fellow citizen's life, (2) organs taken after one's death do not put one at risk of harm nor does *post mortem* organ recovery make one worse off, and (3) taking steps to do one's duty is convenient and virtually costless. Indeed, were one to decline taking these low-cost steps, it is hard to see how one could, in fairness, feel justified in demanding equal consideration for transplantation with those who have taken such steps.

\*\*However, the *prima facie* case is not conclusive. The likelihood that consent to donate upon decease will result in improving a fellow citizen's life must be discounted by the percentage of consented organs not recovered. In 2002, the percentage of consented organs not recovered was as follows: kidney (7%), pancreas (61%), liver (11%), intestine (97%) heart (50%) and lung (83%). If "likely" means "more likely than not," then only for kidneys and livers is it true that donation upon one's decease "likely" will make a substantial improvement in a another human being's life. Shouldn't good informed consent to deceased donation involve disclosing the risk of non-recovery of consented organs?

There is some probability that the person who benefits from one's deceased donation will not be a "fellow" citizen but instead an undocumented alien, a resident alien or even an incarcerated death-row felon. Perhaps these possibilities are "remote and speculative" or shouldn't matter to a person of good character. But good informed consent focuses instead on whether these facts would be material to a reasonable person's decision to donate.

Even if one is persuaded that deceased donation should be regarded as a duty, it does not further follow: (1) that those competent to do their duty should have no liberty to decide whether to comply with it, nor (2) that the government would be justified in taking organs from the deceased irrespective that she or he failed to take the lost-cost steps involved in indicating willingness for deceased donation, nor (3) that it is somehow wrong to provide incentives that materially strengthen antecedently-weak motives to act in accordance with the duty of deceased donation. Incentives to do one's moral duty are not at all uncommon, nor need they be cash-payment. They might include burial expenses, preferential waiting list placement for immediate family members in the event they suffer end-stage organ failure, etc.

Testamentary succession illustrates that most people have preferences regarding who shall benefit upon their deaths. If so, proposed "enforceable" advance directives for deceased donation (= survivors deprived of effective veto of *post mortem* organ recovery) that preclude respect for personal (even idiosyncratic) inclusive or exclusive preferences will have limited appeal. On the other hand, enforceable advance directives that enabled directed donation upon decease would be more attractive.

Adherence to the dead-donor rule underwrites the credibility of the argument's second premise. In essence, the rule provides (1) that life-sustaining organs shall not be taken until the donor has died and (2) that the organ procurement process shall neither cause nor hasten the donor's death.

Strict adherence to the dead donor rule conflicts with the interests of recipients. It also introduces a conflict of interest for how professionals implement it in organ procurement. Warm ischemia, a concomitant of the dying process, compromises organ viability. Minimizing the duration of warm ischemia by cooling organs before death is pronounced promotes the interests of recipients, but compromises the assurance to donors of strict adherence to the dead-donor rule.

Although not all patients with *diabetes insipidus* (DI) have suffered irreversible loss of hypothalamic-pituitary function, all patients with irreversible loss of hypothalamic-pituitary function have DI. DI damages the kidneys. The incentive to recover kidneys prior to damage resulting from DI suggests excluding a confirmatory test for DI when diagnosing death by the whole-brain criterion. On the other hand, strict adherence to the dead-donor rule suggests including a test for DI when using the whole-brain criterion to diagnose death.

Death is not a simple fact to be determined by experts. Philosophical, religious and legal values are in play when we address what it means for a person to die. Showing due respect for the range of views about what it means for a person to die is an ethical task different from but related to our selecting either cardio-pulmonary or neurological criteria by which we shall claim to know that death has occurred, within acceptable limits of error. The specific tests that should be regarded as “determinative” in diagnosing death raises further troubling questions when we recognize that imposing a compelling interest in maximizing organ procurement will influence the answers.

Common sense well-appreciates that conflicts of interest dog organ procurement and transplantation. The rules that regulate our procurement and transplantation practices create powerful incentives that influence the exercise of professional judgment. Justice is better served by candidly analyzing the resulting conflicts of interest and recognizing that organ transplantation is not an unalloyed good, or a simple “gift of life, but at best, a profoundly problematic good.

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*Lance K. Stell, Ph.D., is the Charles A. Dana Professor and Director of the Medical Humanities Program at Davidson College. He also serves as the Medical Ethicist in the Department of Internal Medicine at Carolinas Medical Center.*

# Making the Decision to Give Life

By Laura Sedig, Davidson College '07

\*\*Living donor transplantation is currently accepted by the majority of American society as an ethical and noble act. Living donations soared to nearly 26% of the total donations, after 6,402 living donor transplantations were performed in 2004. These numbers have impacted many potential donors, the process to become an organ donor and the potential repercussions are unknown to many. The screening process is intense and the surgery carries risk of complications. The final decision is not an easy one to make as it affects all facets of the donor's life.

\*\*In June 2000, a conference of the National Kidney Foundation and the American Societies of Transplantation, Transplant Surgeons and Nephrology drafted a "Consensus Statement on the Live Organ Donor," providing guidelines to obtain informed consent from and guide the donor through the transplantation process. This statement has been adopted by many leaders in the field of organ donation including the National Kidney Foundation.

This consensus statement stresses the importance of full disclosure of the risks and benefits of donation to the potential donor. It is imperative that the donor be aware not only of the health risks, but also the emotional and financial implications of such a surgery. The transplant team is urged to evaluate the motive behind the donation (i.e., is it a truly voluntary act) and the psychosocial stability of the donor. Often, when a family member is in need of an organ, all first order relatives are pressured to be tested to find a match, regardless of their willingness to donate. Familial pressure can force someone into donation that does not want to or is not ready to accept the consequences. According to the consensus statement, this is not voluntary consent and the transplant team is careful to screen all potential donors for such pressure. Also, although it is illegal to receive financial awards for organ donation, transplant team members are aware that it happens and are ethically obligated to end the donation process if they learn that the donor will benefit financially.

The transplant team is responsible for declaring the potential donor psychosocially suitable for donation. For this evaluation, the team examines the correlation between the donation and the potential donor's personal values and beliefs, as well as tendency to fall victim to coercion, depression, and substance abuse. Other major criteria include relationship stability and emotional support. While these factors will not affect the medical portion of the procedure, they all can complicate the donor's experience in a negative way.

\*\*The potential donor is encouraged to self-evaluate their decision. The National Kidney Foundation (NKF) created a website specifically for previous and potential donors, *livingdonors.com*. Just as the consensus statement requires the transplant team to examine every potential donor in great depth, the website provides starting points for the potential donor to contemplate their personal decision. Aside from the medical considerations, NKF urges potential donors to think about their personal benefits and risks, relationship with the recipient, potential response if the organ fails, and support structure through the procedure. An informed choice about the procedure includes consideration of all factors cited.

It is stressed throughout the consensus statement and the website that it is acceptable to refuse or have a change of heart at anytime during the process. These steps are intended to prevent donors from being forced into the procedure. The potential donor may change his mind at anytime, and the transplant team is to look for any doubts. If the potential donor is under pressure from his family to donate but does not wish to do so, the team may assist in the declination to donate. It is considered ethical by both publications for the transplant team to create a medical disclaimer to give the donor a way out without causing trouble.

\*\*Organ donation requires major surgery and has the same risks as any other major surgery. The donor will experience post-operative pain and may take up to six weeks to completely recover. The possibility of infection, pneumonia, blood clotting and an allergic reaction to the anesthesia exist, as they do for all major surgeries. A collapsed lung is another risk due to the proximity of the kidney being extracted. The chance of death is remote, occurring in approximately one of every 1700 cases.

After the surgery and recovery, most people are left with only a scar to remind them of the donation. If a kidney is donated, the remaining kidney will grow to offset the loss. People with one kidney are urged to have its function checked on a more regular basis, but there is no significant evidence that those with one kidney are at a disadvantage. Most health insurance companies do not raise premiums for kidney donation as long as other health conditions remain constant. However, some branches of the military, police, and fire departments do not accept applicants with only one kidney. If a donor should need an organ at a later time, they are awarded four extra points by UNOS to move them up on the donation waiting list.

The positive trend in living donation reinforces the societal belief that it is an acceptable and noble form of altruism. Yet there are many considerations that must be pondered before making the decision to donate. Both the transplant team and the individual must conduct thorough investigations into the psychological effects of donation as well as medical effects to make a truly informed decision.

### Notes

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Laura Sedig is a sophomore with a Center-designed major in medical ethics. She is the publicity chair for the Bioethics Society and frequent volunteer at Carolinas Medical Center and the Free Clinic of Our Towns.

## **Solid Organ Transplantation from HIV-Positive Donors to HIV-Positive Recipients: Policy Precedes Clinical Data**

**By Erin Cobain, Davidson College '05**

\*\*According to current United Network for Organ Sharing (UNOS) policy, a person who has had a positive human immunodeficiency virus (HIV) screening test is not able to donate organs unless that test is proven to have been “falsely positive for HIV-Ab.” In regards to the HIV-positive status of organ recipients, current policy states:

*\*\*A potential candidate for organ transplantation whose test for HIV-Ab is positive but who is in an asymptomatic state should not necessarily be excluded from candidacy for organ transplantation but should be advised that he or she may be at increased risk of morbidity and mortality because of immunosuppressive therapy.*

Few would argue against the notion that it is ethically sound to screen for and discard organs from HIV-positive donors in order to prevent the transmission of the virus to HIV-negative patients. However, the situation regarding those who are HIV-positive and in need of an organ transplant is much less clear cut.

\*\*Traditionally, HIV/AIDS has been regarded as a fatal condition that results in a significantly decreased likelihood of success in organ transplant procedures. According to this blanket assessment, it would not be unethical to place those who are HIV-positive and in need of an organ behind those on the priority list more likely to benefit from the procedure. However, in recent years, HIV positive patients are living much longer as a result of Highly Active Anti-Retroviral Therapy (HAART). The progression of the disease is often slowed during use of HAART and the immune system is sustained so the body can fight other AIDS-associated infections. In fact, the extended lifespan of those with HIV results in an increased risk for organ failure from associated diseases and treatments, indicating that these patients may indeed benefit from solid organ transplantation. For example, end-stage renal disease is becoming an increasing problem in patients infected with HIV. According to UNOS statistics, approximately 3.3% of kidneys that were recovered from consenting donors in 2001 were discarded as a result of the donor's HIV-positive/hepatitis/HTLV-1 status. In light of this circumstance the logical question becomes, "why not transplant HIV-positive organs that would otherwise be discarded into HIV-positive recipients?" On the surface, this appears to be a win/win situation: organs which would typically be deemed unusable from consenting donors who are HIV-positive could potentially be put to good use. Furthermore, those who test positive for HIV infection but have enjoyed a prolonged lifespan as a result of HAART therapy would be given a far greater chance of receiving a transplant. While this concept may seem to be the perfect resolution to this moral quandary, there are many less obvious concerns that must be addressed.

\*\*On July 15, 2004, the state of Illinois became the first state in the United States to allow organ donation by people who are HIV positive. This law, sponsored by State Representative Larry McKeon, allows the organs of HIV-positive donors to be transplanted into HIV-positive recipients. Dr. Patrick Lynch, a hepatologist at Northwestern Memorial Hospital professed his support of the law stating, "[. . .] this amendment would free up non-HIV-positive organs for other patients. It just makes social and scientific sense, and I applaud the governor for signing it into law." Prior to this legislation, this controversial issue was explored on the popular television series ER, where an illegal organ transplant was performed by Dr. Corday from an HIV-positive donor into an HIV-positive recipient. Less than two weeks after this episode aired on television the Illinois state law was changed. According to NACTO, the organization for transplant professionals, this Illinois legislation, which clearly overrides current UNOS policy, was passed prior to conducting proper clinical trials that would allow the potential benefit of such procedures to be properly assessed. NATCO's concerns with this bill are both ethical and clinical in nature. First, it is asserted that no clear system of organ allocation is established by the bill, as those eligible for the receipt of HIV-positive organs are broadly defined as those patients who are HIV-positive and in "immediate danger of death." Furthermore, the bill allows for the living-donation of HIV-positive organs, going against general UNOS policy which discourages institutions from allowing those with a chronic illness to serve as a living donor due to the associated risks of donation.

\*\*The primary clinical risk from transplantation between HIV-positive donors and recipients is HIV-1 superinfection, or coinfection with two circulation strains of HIV-1. Even though it is believed that HIV-1 superinfection is a relatively rare event, this condition has been experimentally induced in animal models and documented in a few human cases. Should superinfection result from HIV to HIV organ transplantation, many are concerned that recombination of viral genomes may lead to the development of superviruses. In a recent study by Liu et al. (2002) evidence from a single patient with HIV-1 superinfection indicated that recombination between divergent viruses may accelerate a patient's progression to AIDS. If this is indeed the case, organ transplantation that ultimately results in HIV-1 superinfection may have little therapeutic benefit for recipients and may promote the formation of additional, more resistant strains of the HIV-1 virus. Dr. Eric Daar, a researcher at the UCLA medical center has stated that the risk of superinfection as a result of organ transplantation is likely to be much higher than the risk of superinfection from sexual exposure to a second strain of the virus. It must be acknowledged, however, that Illinois state law has taken some measures to reduce the risk of this occurrence by establishing that donors of HIV-positive organs must be individuals who have never received HAART therapy in order to prevent the transmission of viral strains that are resistant to the best current therapies. Nevertheless, with limited data regarding the clinical outcome of these procedures, it is hard to predict whether or not this stipulation will be enough to prevent the emergence of treatment-resistant superviruses.

**\*\*While there is significant evidence to suggest that HIV-positive patients receiving HAART therapy are likely to benefit from solid organ transplantation from HIV-negative donors, there is limited research available regarding the success rate and ultimate clinical outcome of HIV to HIV organ transplants. Although the therapy has the potential to increase the number of organs available for donation and prolong the lives of many living with HIV, the safety and potential benefits of this practice should be assessed in a controlled research environment before becoming common clinical practice. Patients have the right to all information regarding such a procedure so that informed decisions may be made to prevent exacerbation of their current situation.**

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*Erin Cobain is a senior biology major who will be attending the University of Chicago Pritzker School of Medicine after graduation. She is the Treasurer for Alpha Epsilon Delta, the premedical honor society at Davidson, and President of the Bioethics Society.*

## **Should Current Policies on Stem Cells Be Abolished: Evaluating Pros and Cons**

**By April Barnado, Davidson College '05**

**Preface** by Janelle Fassbender

*As a controversial topic in medical science today, stem cell research carries with it many implications for several medical fields, including organ transplantation. While stem cells are not currently a viable option for tissue and organ transplantation, they represent a riveting example of ethical concerns that question, how far will we go? During the Fall, members of the Bioethics Society presented on the pros and cons of the current federal policy of stem cell research at both the Bioethics Resource Group's annual conference in Charlotte and at a monthly meeting of the Carolina Medical Center's Ethics Committee. The following article highlights the main arguments from both presentations.*

*In the Speas Symposium this spring, we discussed stem cells in relation to Regenerative Medicine and attempted to tease out the ethical concerns that April raises in her article regarding stem cells.*

In 2001, Bush announced federal funding would be limited to embryonic stem cell lines created on or before August 9, 2001. At this time, most Americans did not understand simply what a stem cell was let alone the importance of this announcement. For example, in an Ipsos-Reid Poll conducted from August 10-12, 2001, 75% favored stem cell research on discarded IVF embryos, 62% approved Bush's decision,

and 49% had little interest in or had not even heard of the issue. Despite a lack of knowledge on the subject, it is interesting that the public would form such strong opinions. This evident lack of understanding in the public and in the government has caused Bush's announcement to be misinterpreted as a total ban on stem cell research. However, in looking back at the past election and looking forward to the next four years, it is important to evaluate the pros and cons of the current federal policy.

In considering the pros of the current federal policy, it is important to recognize that there is still a significant amount of funding. Prior to 2001, there was no federal funding for any kind of stem cell research, embryonic or adult stem cells. However, in 2001, NIH allocated 306 million dollars to boost efforts in stem cell research. With further increases in 2002 to 387 million and 521 million in 2003, the NIH hopes to continue this trend through 2005. The funding includes 10.7 million dollars in 2002 and 25 million in 2003 for approved embryonic stem cell lines. Thus, there is not a ban on either adult or embryonic stem cell research.

Another positive outcome for the current federal policy is a logical compromise between the strong scientific lobby on Capitol Hill and Congressmen whose constituents vocally object to embryonic stem cell research. Bush's platform emphasizes that it may not be ethical to use federal monies on such a split and controversial issue such as embryonic stem cell research. Arguably, public support has increased due to heightened media coverage of celebrities and prominent figures such as the Reagan and Reeves families and Michael J. Fox. However, religious organizations, namely the Catholic Church, and pro-life groups strongly object to embryonic stem cell research. Although the current federal policy limits federal funding on embryonic stem cell research, it shows an interest to continue pursuing the research and recognition that there are ethical issues to be further explored.

Further, the current federal policy does not limit states' abilities to promote embryonic stem cell research. California stands out as a state heavily funding embryonic stem cell research. With Proposition 71, the state will grant approximately 3 billion dollars to stem cell research that includes use of human embryonic stem cells. Other states, specifically Illinois and New York, have policies very similar to California. In addition, Pennsylvania currently has no restrictions on stem cell research. Thus, states have the freedom to adopt policies that adequately reflect their constituents' views on whether to pursue or not pursue stem cell research.

Another important consideration is that the current federal policy takes a precaution to not over spend in an area of research that is not only ethically controversial but also not fully understood. A considerable amount of research still needs to be done before patients can capitalize on treatments, particularly from embryonic stem cells. Some researchers even argue that treatments from embryonic stem cells may never come to fruition, which contrasts starkly against the rosy promises that the media paints of embryonic stem cells. Scientists argue that there is other research that is progressing more rapidly than human embryonic stem cells. Arguably, federal funding should go to the more promising and more rapidly progressing research.

In considering the cons of the current federal policy, some argue that sufficient embryonic stem cell research cannot proceed with the current NIH funding. Even though states have the right to approve additional funding for embryonic stem cells, it simply is not enough to allow research to progress. Similarly, the scarce funding is limited to the 60 pre-existing lines that Bush approved in August 2001. Interestingly, according to NIH, only 20 of these lines are actually in the United States and only 2 of those 20 lines are at public institutions. Issues concerning inconsistent methods and contamination with mouse feeder cells and fetal bovine serum have rendered many of the embryonic stem cells useless in further research and definitely for use in future human trials. So far, only 15-20 of the original 60 lines are currently still available for research.

With the scarcity in federal funding, embryonic stem cell research is being pushed into the private sector, mainly to California's biotechnology companies such as Geron Corporation. Geron successfully used animal models to replenish diseased pancreatic islet beta cells with transplanted embryonic stem cells in November 2003. They also developed cultures free of contamination of mouse feeder cells and discovered an effective combination growth medium. For all of these recent successes, Geron is seeking patents. With

patents, their research and knowledge may never leave the laboratories of Geron to help other scientists working with embryonic stem cells. As the story with Geron shows, pushing embryonic stem cell research into the private sector terminates the much needed collaboration and teamwork required for science to progress. Pushing the embryonic stem cell research into the private sector is also troublesome because these biotechnology companies are not governed by strict ethical guidelines. Instead, these companies are governed by profit and the goal to please shareholders. We can only speculate how far researchers in these companies will go to make the next big news headline or secure the next patent.

Even if embryonic stem cell research is not progressing as rapidly as other areas of research, the field still has significant promise that must not be neglected.

Embryonic stem cell research offers hope of treatment for diseases that currently have no or very little research being done to discover possible treatments. Therapies utilizing embryonic stem cells have the possibility to treat a multitude of diseases including heart disease, diabetes, and Parkinson's. Arguably, it would be a wise investment to spend time and federal money to pursue this avenue of research. Further, the opportunity to capitalize on this research is at our grasp. The United States has the potential to be a leader in embryonic stem cell research. However, with a lack of federal funding, there is a "brain drain" of top American scientists leaving for the United Kingdom, Sweden, and most recently Singapore to do embryonic stem cell research. Many embryonic stem cell researchers feel that in the United States they are spending more time trying to maintain limited federal funding and obtain private funding instead of spending time on their research.

In examining the pros and cons of the current federal policy on stem cells, I feel that our government should relax restrictions on embryonic stem cell research. Specifically, I am concerned about the current federal policy causing a brain drain of U.S. scientists by pushing embryonic stem cell research into the private sector. However, with this increased funding in embryonic stem cell research, there should also be increased education of not only the public but also governmental leaders. Citizens and governmental leaders should understand the limitations of embryonic stem cells and their application to possible disease treatment. Otherwise, misconceptions perpetuated by negligent reporting will continue to hinder the potential of stem cell research.

*April Barnado is a senior biology major and Spanish minor who plans on attending Emory University School of Medicine after graduation. She is Vice-President of the Bioethics Society, President of Alpha Epsilon Delta (the Pre-medicine Honor Society), and performs with the Davidson College Symphony Orchestra and Chamber Singers.*

## Frederick Womble Speas

*(Davidson, '43), was a student at Bowman Gray Medical School in 1947 when his promising career in medicine was cut short by leukemia. His foreshortened life embodied the ideals of compassion and caring to an extraordinary degree.*

*The Frederick Womble Speas Memorial Lecture and Seminar was established by R. Dixon Speas in memory of his brother. The event in medical ethics focuses on the analysis and discussion of issues relevant to the provision of healthcare in our complex society.*

*Robert Sade, MD, Professor of Cardiothoracic Surgery, Medical University of South Carolina  
Norman Fost, MD, MPH, Director of Medical Ethics Program, University of Wisconsin  
Allen Buchanan, PhD, Professor of Public Policy and Philosophy, Duke University*

- A point system is used to determine who is eligible to receive a certain organ when it become available. Is there preference given, even if unknowingly, to people of status (i.e. celebrity, class, or political)? Are there people for whom exceptions should be made (i.e. the President of the United States)?
- In order to increase the supply of organs, should prisoners donate and/or receive organs? Should these prisoners receive reduced sentences or chance of parole for their gift?
- Is it ethical to give donors financial incentives for their generosity in donating an organ? If not, what can we do to increase the supply of organs?
- Should children have preference over the elderly for receiving an organ transplant even though the percentage of successful transplants is comparable between groups.

## **Stem Cells and Organ Transplants**

### **A quick insight to tissue scaffolding:**

- Tissue engineering has advanced from 2-dimensional “sheet” to the use of scaffolds in 3-dimensional forms
- With scaffolds, scientists may be able to create organs from the recipient’s tissue
- Scaffolds provide cell support, are non-toxic, provide sites for cell attachment, and can supply growth factors and drugs

In the United States, 2003:  
**351,614** people were living with HIV  
**32,048** people were diagnosed with HIV

**Center for Disease Control 2003 Surveillance Report**  
<http://www.cdc.gov/hiv/stats/2003SurveillanceReport/table1.htm>

Sixty students, faculty, and healthcare professionals gathered recently at Davidson to discuss the thorny issue of “Organ Transplantation: How Far Have We Come, How Far Should We Go?”

“The physicians at the symposium were very knowledgeable about this important ethical issue,” said sophomore biology major Ben Whigham. “Their talks were wonderful, and I really enjoyed getting to know them on the side.”

The Frederick Womble Speas ‘43 Symposium was established in 1986 by R. Dixon Speas in honor of his brother, whose promising career in medicine was cut short by leukemia. The purpose of the event is to discuss the challenge of providing humane care to patients in the face of daunting technological, economic, political, and cultural restraints. The symposium was sponsored by the Medical Humanities program, and organized by the student-run Bioethics Society.

Lance Stell, the Charles A. Dana Professor of Philosophy and director of the Medical Humanities Program, said this year’s topic was selected because of the dramatic disparity between growing demand for organs and a stagnant supply. “When I teach about organ transplantation and death in my classes, student interest in the topic is evident. Indeed, some students have either benefited from transplantation, while others know someone who has. Some have even served as living donors.” said Stell. “The topics selected for the Symposium typically emerge from classroom discussions or from interests expressed by members of Davidson’s Bioethics Society. The topics tend to be current and controversial with a lot of ethical dimensions.”

Four distinguished guests presented keynote talks, on “Defining Death: For What Purpose?” “Prohibiting Payment for Organs is Unjust, Incoherent and Misguided,” “The Unimportance of Death,” and “Global Justice and the Allocation of Organs for Transplantation.” Their remarks highlighted the current organ shortage, and growing demand for more than 87,000 organ transplants in the United States.

Stell said he was most interested in two issues raised by speakers. The first is the “dead donor” rule, which requires that a donor be deceased before a physician can remove organs regardless of the circumstances or wishes of the donor. Secondly, he was interested in the proposal that donors, live and deceased, might receive compensation for their organs.

“I find it odd that everyone in the donation process can price their participation in an organ donation, except the donor,” said Stell. “If we really wanted to be consistent, we should ask physicians to perform the organ transplants for free. You can see very quickly why that would not work.”

Sophomore Laura Sedig agreed. “Prior to the symposium, I considered the sale of organs out of the question,” she said. “The symposium made me step back and examine my reasoning. I found that I really didn’t have a strong basis for my opinion. I was surprised to find that I actually support financial reimbursement for living donation.”

In addition, the students, many of whom aspire to work in the medical field, said that the talks and discussion gave them insight into the difficult ethical decisions that they may face as professionals.

Janelle Fassbender, a senior who will attend medical school in the fall, said that she was fascinated by the ethical dilemma of declaring the time of death. “As we have seen this past year with the Schiavo case, medical technology can keep people alive for a long time, so it’s important for patients to pre-define their wishes in that situation,” she said. “People’s ability to donate organs and save a life directly depends on appropriate decisions being made during critical minutes in the hospital, which they can control if they properly declare their wishes.”

Whigham commented that medical ethics issues must be continually reviewed because of their immense social consequences. “Decisions regarding organ transplantation affect everything from health care to the economy,” said Whigham. “Since health care is such an important part of our society, an analysis of ethical issues surrounding it are crucial to effective and just policy decisions.”

## A Review of the 2005 Frederick Womble Speas Symposium

By Jonathan Crooms, Davidson College, ‘04 Fellow

**Breakout Session Leaders, ‘05** : Janelle Fassbender, Ellie Strachan, Lauren Finley, Margaret Whipple, Laura Sedig, Caroline Hartridge, Erin Cobain, Elizabeth Berndt, Ben Whigham, and Lauren Stutts

Institution	Country	Number of ES Cell Lines
Goteborg University	Sweden	19
<b>CyThera</b>	<b>United States</b>	<b>9</b>
Reliance Life Sciences	India	7
Monash University	Australia	6

Karolinska Institute	Sweden	5
<b>Wisconsin Alumni Research Foundation</b>	<b>United States</b>	<b>5</b>
<b>BresaGen, Inc.</b>	<b>United States</b>	<b>4</b>
Technion-Israel Institute of Technology	Israel	4
National Center of Biological Sciences	India	3
<b>University of California</b>	<b>United States</b>	<b>2</b>

Adapted from: **The 64 Stem Cell Lines available for federal funding in the United States are only located at 11 different institutions** (NIH Identifies 2001). \*Note that only 20 lines are in the United States, and only 2 of those lines are at a public institution.

### **Public Opinion of Stem Cell Research**

#### **Ipsos-Reid Poll: August 10-12, 2001**

- 75% favored stem cell research on discarded embryos for the treatment of disease
- 62% approval of Bush's decision
- 49% had followed the issue "only a little," "not at all," or had not heard of it

#### **University of PA National Annenberg Election Survey: July 30-August 5, 2004**

- 64% favor stem cell research, 28% oppose

### **U.S. State Policies on Stem Cell Research**

- 9 states ban research on IVF embryos
- 22 states had bills in 2003 to ban therapeutic cloning
- 4 states prohibit embryonic stem cell research

If you would like to respond to the issues in this edition of *The Ethical View*, please send responses to:

**The Ethical View**  
**c/o The Medical Humanities Program**  
**Davidson College**  
**P. O. Box 7135**  
**Davidson, NC 28035-7135**

If you prefer, send e-mail to:

**[ethicalview@davidson.edu](mailto:ethicalview@davidson.edu)**

If you know someone who would like to receive *The Ethical View*, please contact the Medical Humanities Program by mail or e-mail, using the contact information above.

Phone: 704-894-2482

Fax: 704-894-2881

Email: [frscott@davidson.edu](mailto:frscott@davidson.edu)

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Davidson College

Medical Humanities Program

P. O. Box 7135

Davidson, NC 28035-7135

