

# medicine

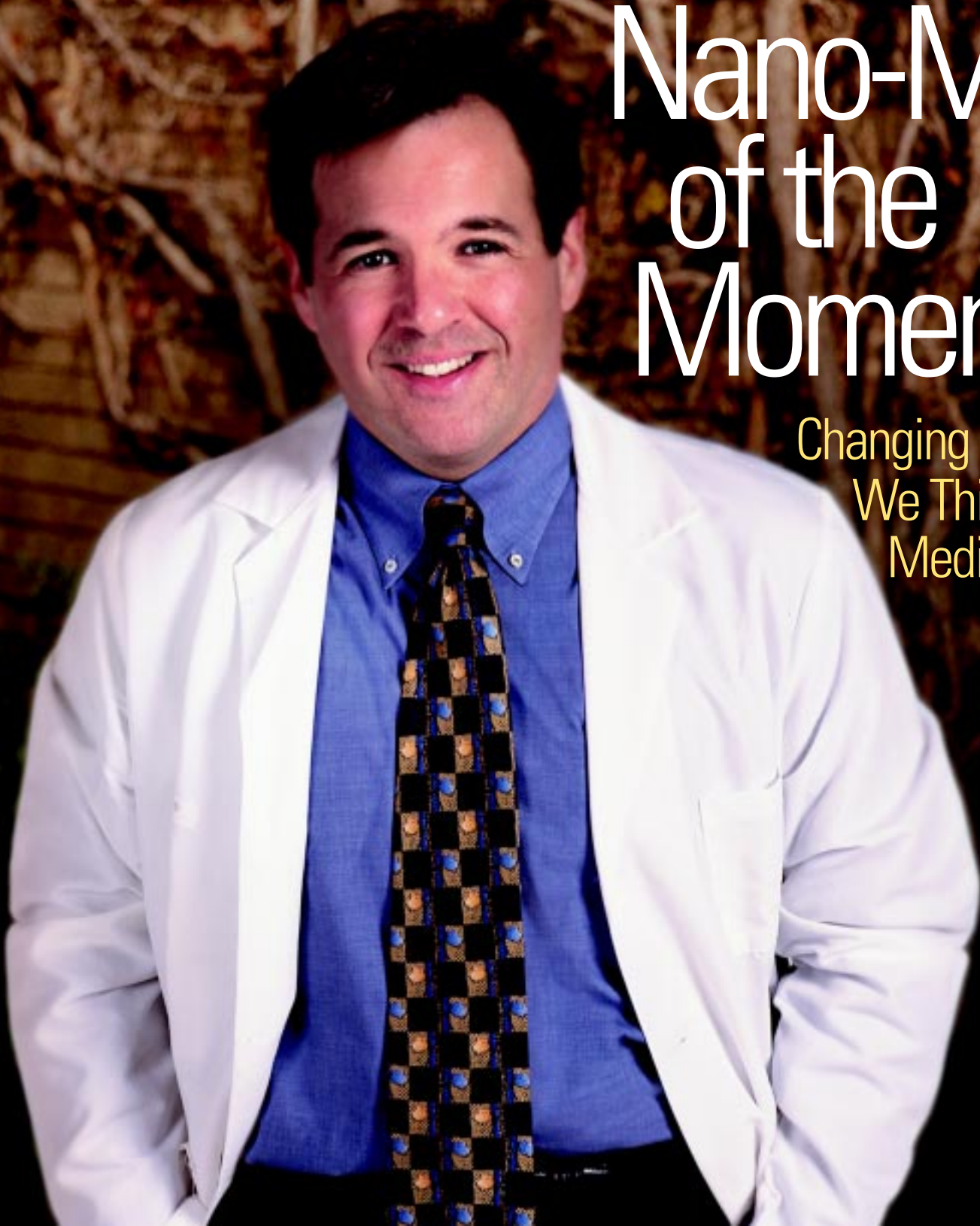
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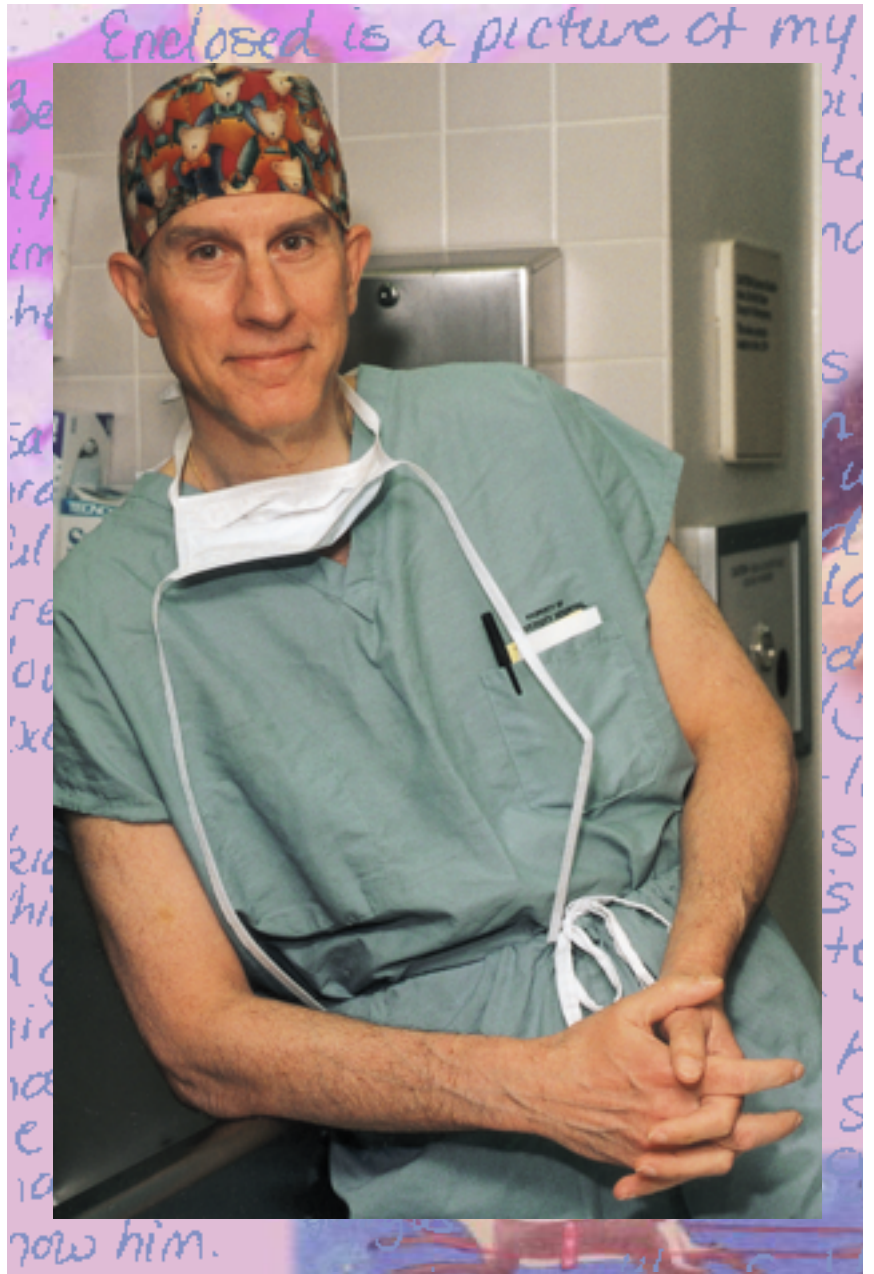
## Nano-Man of the Moment

Changing the Way  
We Think About  
Medicine



Ed Bove's exceptional abilities as a surgeon bring children and their grateful parents from all around the country and the world to Ann Arbor.

He's pictured here in one of his trademark teddy-bear scrub hats. The custom hats, in a variety of patterns, are made for him and others by Betsy Hunsche, a medical assistant in pre-op at Mott Children's Hospital.



*by David Stringer*

# Rebuilding Babies'

For pioneering pediatric cardiac surgeon Ed Bove, it's a life rich in joy and triumph, but sorrow and defeat are part of what he lives with, too

**E**d Bove's first clinical rotation as a student at Albany Medical College in New York State in the early 1970s was in pediatric cardiology, where he saw his first "blue baby" — a child suffering from a heart defect known as the tetralogy of Fallot. The child's dire condition made a strong impression on the young student, who soon after came upon the very same child on his next rotation in heart surgery. Bove had been leaning toward surgery as a specialty, but what he saw that day brought clarity to what had been only a tentative notion. "I scrubbed. I watched the surgery. I sat with him in the intensive care unit," he recalls. "He was no longer blue! I was so overwhelmed, and I said, 'That's it — that's what I want to do!'"

Bove (pronounced bo-vay) did his undergraduate work at the College of the Holy Cross in Worcester, Massachusetts. After graduating from medical school in Albany in 1972, he came to Michigan for his residency in general surgery and thoracic surgery, largely at the urging of the late Ralph Alley, M.D., then chief of thoracic surgery at Albany, who had taken Bove under his wing.

"At first he had seemed gruff and unapproachable," Bove recalls. "But at the end of rounds one day, I got up the nerve to speak with him, and it was the beginning

of a long friendship. He was a wonderful mentor to me over many years." Alley suggested to Bove that he apply for his residency at either Duke, Massachusetts General, or the University of Michigan, and he tipped off the U-M interviewer to be sure to speak with Bove personally. Bove completed his residency at Michigan in 1980, and joined the Hospital for Sick Children in London, England, as a senior registrar, the equivalent of a fellow, for additional training in complex congenital heart surgery.

Before returning to Michigan in 1985, he practiced at the Health Science Center of the State University of New York in Syracuse for five years. Bove's experiences in medical school and during his residency at Michigan pointed him toward what is currently one of his specialties: hypoplastic left heart syndrome, where babies are born with the left side of the heart too small to be able to pump

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blood. "Going back a decade or so, death from this congenital defect was certain," he says. "All that a physician could do was diagnose the illness and then inform the parents that their child was going to die."

Bove, who first became interested in hypoplastic left heart syndrome in the early 1980s, soon experienced firsthand the terrible sense of defeat that came from watching these babies die. His first six operations to repair hypoplastic left heart syndrome were a failure. But with the seventh, the baby gained an additional two years of life. After the child's death, his mother wrote Bove a letter of gratitude, thanking him for giving her two wonderful years and expressing the hope that he would continue to try to save other children.

It is his many subsequent successes — and the heart-wrenching appreciation he receives from even those parents whose children cannot be saved — that keeps Bove going. But the pain of the many failures is as acute as ever. "Sadly," he says, "we lose some. It upsets me as much today as ever — just ask my wife. The high risk — it wears on you. Some days I'm as high as the top of the world, but other days I'm deflated lower than the curb on the road." Today Bove is able to achieve an 80-85 percent success rate for hypoplastic left heart syndrome, a success rate that most of his admirers around the world would call phenomenal, but which he

describes in characteristically modest fashion as "fairly good results." The 15-20 percent of his patients that he loses is the dark reminder of how many more successes he would like to have.

The surgery Bove performs was once controversial. Heart surgery itself, he notes, has a history of less than 50 years and began in controversy in the 1950s. The questions raised about early heart surgery on adults were also asked when Bove began his high-risk surgery on babies, with many wondering how long the children would survive and what kind of lives they would have. Some worried that parents would be put through too much agony, only to have their hopes dashed.

Bove recalls giving a talk in London in the early 1990s when he was the only one at the meeting advocating the technique. With more and more successes, however, the controversy has died down, and Bove can now report that the procedure he performs for hypoplastic left heart syndrome is "routinely done." He himself, however, is not viewed as "routine" by any of his admiring colleagues around the world, many of whom refer their most desperate patients to him because of his reputation and the pioneering work he has done in this field.

One such admirer is Dug Thiene, M.D., a pediatric cardiologist in Umea, Sweden, who came to Ann Arbor last year to present the case of a 12-year-old patient to Bove. Thiene had been to Ann Arbor in the past and had become a colleague and friend of Achiaw Ludomirsky, M.D., associate professor of pediatrics and communicable diseases, through whom he met Bove.

Thiene's patient, Jens Stalnacke, who lives above the Arctic Circle in the town of Kiruna, where his parents, Anita and Thomas, have a reindeer farm, had undergone his first heart surgery to replace a valve when he was three months old and underwent four subsequent ▶

# Hearts

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...the campus of the University of Michigan. We selected Mott's Children Hospital on the name of Dr. Bove performs these delicate surgeries. After six weeks and many ups

# "...BE SURE THAT WE WILL ALWAYS REMEMBER YOU..."

Ed Bove's files are filled with heartfelt notes from the grateful parents of the babies whose lives he has saved, often accompanied by photos offering adorable proof of the babies' good health and happy spirits. Pictured here are (clockwise from top) Brynn Barckholtz of Cary, Illinois; Zachary Tucker of Colleyville, Texas; Joseph Gerardi of Fayetteville, New York; and Mary Margaret Davis of Brentwood, Tennessee.

Bove's wonder babies also have their own websites: grateful father Russ Gillespie, who lives near Charlotte, North Carolina, has built a website to tell the happy tale of his son Joshua's successful surgery in Ann Arbor to repair his congenital heart defect, the hypoplastic left heart syndrome for which Ed Bove is especially noted. The site can be visited at [www.geocities.com/Heartland/8395](http://www.geocities.com/Heartland/8395).



Dear Dr. Bove,  
I don't know if you remember  
me, but be sure that we will  
always remember you.

Louise, Mary  
my little  
happy  
some  
and  
thank you again

July 19, 1999

Dear Dr. Bove,

I know you're really busy, so I'll keep it short.

Enclosed is a picture of my son Benjamin (Benny) Brown, who will be two years old next week. You operated on him when he was nine days old and again when he was five months old.



I just wanted to say thanks for saving his life. Words can't explain how grateful I am to you and all the wonderful people at the U of M. Instead of grieving his birthday (as we would be doing if he hadn't received such excellent care) we are celebrating!

Benny's turning into a great little kid! He's totally fearless and tries everything his four-year-old brother does. He's got a great sense of humor. He loves teenage girls and rubber snakes. He has the most beautiful strawberry-blond hair. He sucks his fingers while he's sleeping. Thank you for giving us the opportunity to get to know him.

I pray almost every day for blessings for you and the hospital. I'm so thankful God gave you the talent and courage to help such tiny people. Benny is such a blessing to me and so many others. He has taught us so much.

We know Benny has a fragile heart but we are letting him live his life just like everyone else. We're setting limits on his behavior and raising him to be a kind and loving person. He's not a cardiac cripple.

As we celebrate his second birthday we want to take time to remember all you have done. May God bless you.

Sincerely,  
Brenda Brown

This letter from Benny Brown's mother, Brenda Brown, of Buchanan, Michigan (just north of South Bend, Indiana) is typical of the many that Ed Bove receives. Benny underwent his third surgery with Bove in April.

We just wanted  
this message and  
Margaret couldn't be  
any better. She is so  
fantastic! She is 2 1/2

surgeries. In the most recent of those surgeries, Jens' aorta had been replaced with a prosthetic graft and the two coronary arteries had been sutured into this graft. The complications deriving from this surgery, including extreme scarring of the coronary arteries and their virtual invisibility from outside the heart, had made Jens' surgeons in Sweden unwilling to attempt further operations on his heart. Yet his physical growth over many years necessitated his receiving a new graft. The challenge for Bove was to remove the coronary arteries and reattach them to the new graft without injuring them, a difficult procedure under the best of circumstances.

The only option Thiene and his colleagues in Sweden had seen was a heart transplant, which is why they sought Bove's help. But in a seven-hour operation, Bove was able to successfully replace the valve. Jens, an enthusiastic snowboarder and skater, and his grateful parents, who describe Bove as "ödmjuk," or "humble and compassionate," were able to return home just two weeks after coming to Ann Arbor.

"Surgeons have a special bond with their patients," Bove says. "They come to us because they trust us." In Bove's case, this is somewhat of an understatement. The trust of physicians and their patients in Bove's life-and-death work extends far beyond Michigan, with about 40 percent of his patients coming from outside the state, and many, like Jens Stalnacke, from other countries around the world.

Amnon Rosenthal, M.D., U-M professor of pediatrics and communicable diseases, has high praise for his colleague: "Dr. Bove is a brilliant surgeon," he says. "His technical skills are phenomenal. He has attained incredible surgical outcomes." Rosenthal also speaks highly of Bove's administrative approach, one focused on the teamwork necessary in the complex world of pediatric cardiology.

"He works very well with his coworkers," says Rosenthal, "and has a wonderful team approach to the care of patients. Cardiac care involves many caregivers, including surgeons, cardiologists, nurses, anesthesiologists, social workers, technicians, and clerical personnel, and all have to work as one integrated unit focused on the patient." Citing Bove's humility, Rosenthal continues, "He has created a wonderful working atmosphere within the Michigan Congenital Heart Center, and he's a very loyal institutional person. His administrative decisions always consider the perspective of the institution as a whole." Rosenthal also commends Bove's "commitment to training young surgeons in the field — highly qualified surgeons who are very much in demand."

Susan Neilly, Bove's secretary, underscores the gratitude her boss receives from the families he serves. "A lot of parents write to him and thank him for giving their child the gift of life," she says, "and at holidays he gets cards and pictures." She attributes this, in part, to the strength of his warm personality: "You can tell his compassion from the way he talks to people when he telephones families after a fetus is diagnosed with a heart condition," she says. "And when a patient dies, he always writes the parents a heartfelt letter of condolence. He writes every one."



**Twelve-year-old Jens Stalnacke and his parents, Anita and Thomas, at the Med-Inn at University Hospital in April. While many of Ed Bove's patients are very young children, older children such as Jens, whose parents flew with him from Sweden to Michigan, are also the beneficiaries of Bove's skills as a pediatric cardiac surgeon.**

The widely admired surgeon has no plans to ease his schedule. "I think I work too hard," he says, "but I enjoy it. For me it's either 110 percent or nothing. I can't slow down." Regarding the stress and the demands on his physical and mental stamina, especially the intense concentration required in the operating

room, he says only, "Focus is terribly important, and I don't want to lose my edge." He still feels energized by the combination of intellectual, emotional, and personal challenge that he faces in his work, and he has no intention of slowing the pace. "It means a lot to me," he says, "that babies benefit."

Bove is proud of his own two children, both of whom are working in fields that contain elements of the medical and the high-risk. His daughter, Susan, 26, an associate scientist in preclinical research at Parke-Davis in Ann Arbor, is doing work on inflammation therapeutics related to osteo- and rheumatoid arthritis, and his son, Christopher, 23, is a paramedic training to be a firefighter in Chicago.

Bove, who grew up in New York City, is one of those lucky people whose talents and aspirations from an early age have been beautifully aligned — to his own deep satisfaction and to the extraordinary satisfaction of the many parents whose children are alive because of him. "As far back as I can remember I wanted to be a doctor," he says. While it is his technical skills that make him a star in the surgical firmament, Bove still gleans his greatest pleasure and pride from the personal relationships that have been built on those skills. He is fond of a sentence from the classic essay, "The Care of the Patient," delivered by Francis Weld Peabody, the highly regarded Boston physician and professor of internal medicine at Harvard University, to a medical school class in 1926: "The secret of the care of the patient is in the caring for the patient." [m](#)