





NEUROVISION® JJB



MAS™  
MAXIMUM ACCESS  
SURGERY



MAXCESS®



IMPLANTS

# NUVASIVE® — DEVELOPING CREATIVE SOLUTIONS FOR SAFE REPRODUCIBLE SPINE SURGERY

We are a medical device company focused on the design, development, and marketing of products for the surgical treatment of spine disorders. Our product portfolio is focused on applications in the over \$2 billion U.S. spine fusion market. This market is expected to grow at an estimated annual rate of 20% through 2005. Our current principal product offering includes a minimally invasive surgical platform that we call Maximum Access Surgery, or MAS™, as well as classic fusion products.

The MAS platform offers advantages for both patients and surgeons such as reduced surgery, hospitalization time and faster recovery. MAS combines three categories of our current product offerings — NeuroVision®, a proprietary software-driven nerve avoidance system; MaXcess®, a unique split-blade design minimally invasive surgical system; and specialized implants — that collectively minimize soft tissue disruption during spine surgery while allowing maximum visualization and surgical reproducibility. Our classic fusion portfolio is comprised of predominantly sterile-packaged bone allografts and metal mesh cages. NuVasive also has a robust R&D pipeline emphasizing both MAS and motion preservation products such as total disc replacement (TDR).

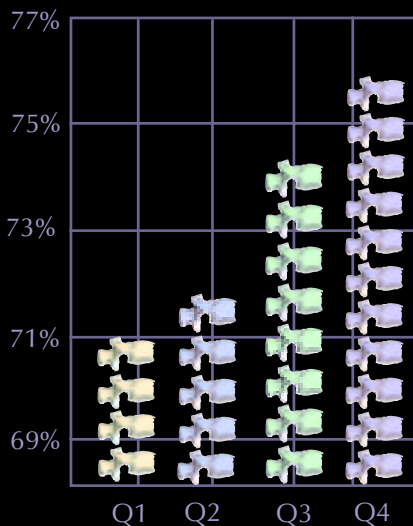
In addition to broad applications in spine surgery, our MAS platform has enabled innovative procedures such as eXtreme Lateral Interbody Fusion, or XLIF™, which offers advantages over other minimally invasive procedures. All of the procedures facilitated by our MAS platform provide significant benefits to the patient, including reduced surgery time and less trauma and blood loss, resulting in faster overall patient recovery time.

Our goal is to become a leading provider of creative medical products that provide comprehensive solutions for the surgical treatment of spine disorders. Our corporate culture of "Absolute Responsiveness™" ideally positions us to respond quickly to surgeon needs, aggressively introduce new products, and expand our sales and marketing reach. As spine surgeons continue to adopt our products, we believe our MAS platform will become the standard of care for minimally disruptive spine surgery.

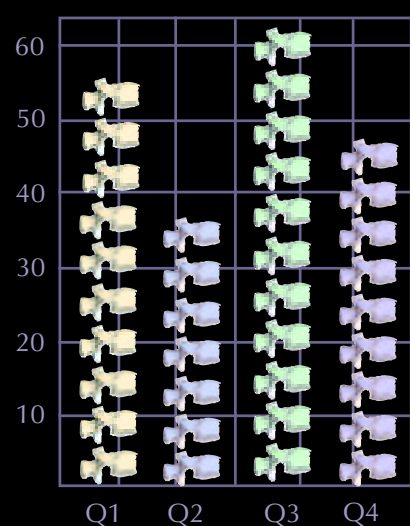
REVENUE  
(Per Quarter for 2004)  
(in thousands)



GROSS MARGIN  
(Per Quarter for 2004)



SURGEONS TRAINED  
(Per Quarter for 2004)



## TO OUR CUSTOMERS, SHAREOWNERS, AND SHAREHOLDERS

Looking back on 2004, we are pleased with NuVasive's significant progress and many accomplishments, as well as the confidence you have placed in our company. We accessed the public capital markets for the first time and delivered robust operating and financial performance, exceeding many of our internal performance measures and Wall Street's expectations. We made substantial progress on several key strategic growth initiatives including strong momentum in training surgeons on our Maximum Access Surgery (MAS™) platform, the vertical integration of our products, differentiating NuVasive from competitors with our Absolute Responsiveness™ approach, and continued additions to our new product pipeline. Moreover, in January 2005, we opened our new 63,000 square foot facility with an expanded operating room for training surgeons, and implemented our 7-day NuVasive Sales School for the training of sales representatives. We exceeded 100 shareowners (employees) with additions in all key

department has assembled a dedicated team to manage all Surgeon Marquis Visits on virtually a "24/7" basis to accommodate surgeons' schedules from across the United States. Our commitment to training is paramount since we believe these programs will translate into both revenues and strong business relationships in 2005 and for many years to come.

The vertical integration of our MAS platform was expanded in 2004 by the launch of several new products:

- NeuroVision® Dynamic Screw Test (DST) and Nerve Root Retractor line additions combined stimulated and free-run EMG to monitor spinal nerves and alert the surgeon of physiologic changes;
- CoRoent™ family of implants to provide the clinician with the ability to select a radiolucent implant;
- SpheRx™ Pedicle Screw System as an efficient and unique line of posterior instrumentation enabling straightforward fixation in less disruptive procedures;

*"Our culture of Absolute Responsiveness encompasses bringing new products to market faster than our competitors, and providing the utmost in service to our customers. We call this moving at Cheetah Speed."*

functional areas and especially in Sales and Marketing. In 2005, we expect to add at least 50 new shareowners in operations, customer service and all aspects of the company to keep up with our rapid growth.

One of the primary keys to our growth strategy is the training of spine surgeons on our MAS platform. We trained 202 surgeons during 2004, doubling the number trained from 2003. The subsequent use of our products following training continued to accelerate, generating strong revenues. In 2005, we expect to double again and train over 425 surgeons due to increased surgeon demand. Our new state-of-the-art, 6-suite Operating Room Theater enables us to train both individual and groups of surgeons simultaneously in a cadaver workshop format. In addition, the marketing

- MaXcess® Micro-Access System increased surgical applications by enabling minimally disruptive maximum access approaches for lumbar decompression and posterior cervical procedures.

In addition to the comprehensive, hands-on training we provide the surgeon, our Absolute Responsiveness approach is applied to every aspect of our business from customer service to administration. It is the core of NuVasive's culture of focused execution, attention to detail and "Cheetah Speed." We call this moving at "Cheetah Speed" to symbolize our culture of Absolute Responsiveness which encompasses bringing new products to market faster than our competitors and striving to provide the utmost in service to our customers. We selected the cheetah as our symbol of the fastest







mammal on the planet and have a series of internal programs to reinforce and drive the need for speed with shareowners. As an example, our on-site machine shop with fabrication capabilities for instrument prototyping delivers surgeon-specified custom features often within days - not weeks or months - of the surgeon's request. Our new shop is three times larger in our new facility and a key area of focus in 2005. This attention and dedication of resources to customer needs and rapid turnaround time is a key differentiator with surgeons.

Although we have entered 2005 with substantial momentum in the adoption of our MAS platform and expect this momentum to continue, we understand that as we drive forward we must also be watching our rearview mirror and vigilantly take steps to obsolete our own products ahead of our competitors. Therefore, another fundamental key to NuVasive's growth strategy is the continued development of innovative products for minimally disruptive spine surgery together with top clinicians. Our team of development engineers, driven by surgeon expectations for positive patient outcomes, remains focused on advancing technologies within our existing and new product pipeline. We plan to "raise the bar" even higher, once again, by launching nine new products throughout 2005 at or ahead of schedule:

- *MaXcess® II* — Comprised of new features and benefits including radiolucency;
- *MaXcess® ALIF* — For anterior applications;
- *SpheRx™ DBR™ (Dual Ball Rod)* — Unique system for minimally disruptive pedicle screw engagement;
- *Cervical Plate* — Designed for dynamic fixation and easy implant placement;
- *NeuroVision® Electrode Harness* — Designed to allow faster patient set-up;
- *Insulated Spinal Access Needle (IPAS™)* — For percutaneous NeuroVision applications;

*Three New CoRoent Implants* — Anatomic shapes to provide a wide array of radiolucent options:

- *Tapered CoRoent* — To allow easy posterior and posterior-lateral insertion;
- *CoRoent™ XLR* — For anterior insertion;
- *CoRoent™ LC* — Curved and convex for angled insertion.

We are viewing Total Disc Replacement (TDR) as the largest near-term single new product opportunity for motion preservation spine surgery. We believe that the Cervical TDR adoption rate will eventually encompass at least 50% of the U.S. cervical fusion market and increase the size of that market population by at least 10%. Conversely, we believe Anterior Lumbar TDR adoption in the U.S. will approximate the European experience of only 10% to 15% market penetration. As a result, we have placed emphasis on Cervical TDR development, as well as differentiating ourselves with a Lateral Lumbar TDR unlike the Anterior approach on the market today. Our Cervical TDR design is a ceramic-on-ceramic articulation. We sought to eliminate two potential problems in our design: wear debris from polyethylene and the unforgiving constraints of surgical placement. We expect to file our Cervical TDR IDE in the first half of 2005 and launch clinical trials at the end of 2005 pending IDE approval from the FDA.

We believe there are substantial rapid and long-term growth opportunities for our MAS platform in the spine marketplace. As a nimble, highly responsive company, we are positioned to capitalize on the dynamic changes taking place in the spine surgery industry. We will do our best to deliver results with Absolute Responsiveness.

Thank you for your continued support,

Alexis V. Lukianov  
Chairman and Chief Executive Officer



# MAXIMUM ACCESS SURGERY PLATFORM

Maximum Access Surgery (MAS™) – NuVasive’s version of minimally invasive spine surgery does not *minimize* the surgeon’s access to the spine or ability to treat it. It instead provides *maximum* functional access while minimizing only the tissue disruption that causes exposure-related pain and disability. The MAS version of minimally disruptive surgery is gaining adoption in the marketplace for three main reasons: it is safe and reproducible; it can be performed with reduced operative times and without compromising surgical results; and it results in faster patient recovery.

NuVasive’s suite of proprietary MAS technologies differentiates us from the competition. The MAS platform combines our NeuroVision® nerve monitoring system, MaXcess® access system and instruments, and specialized implants. Together, these systems provide the versatility to enable a wide variety of spine procedures: posterior, posterolateral, and lateral approaches to decompression and fusion, in a minimally disruptive fashion.

Many minimally invasive systems hinder a surgeon’s ability to effect an adequate treatment. NuVasive’s MAS products instead facilitate the surgical procedure for

optimal outcome: the MaXcess access system is designed to accommodate each surgical demand with a customizable exposure, it does not require the mastering of special instruments or visualization technologies, and allows the use of conventional surgical technique; the NeuroVision system seamlessly integrates neuromonitoring into the procedure to provide an added level of safety without an added level of fuss; and specialized implants are anatomically designed for optimal fit and finish through any size exposure.

These design features are representative of our product development process that delivers technologically advanced products based on surgeon need and design input by seeking and incorporating feedback from key opinion leaders throughout the product development cycle. This responsiveness has allowed us to differentiate ourselves in the marketplace as we strive to assist surgeons in improving patient outcomes.

This product quality, coupled with the vertical integration of product utility by offering a full breadth of MAS products, affords NuVasive a higher profile with surgeons, creating a significant potential generator of rapid revenue growth.

**MAS**  
MAXIMUM ACCESS SURGERY

QUICKER RETURN TO NORMAL ACTIVITY

	XLIF™	TLIF
Surgical Time	70 - 90 min.	2 - 4 hrs.
Blood Loss	< 100 cc's	100-200 cc's
Patient Recovery	7 - 12 hrs.	12 hrs.
Hospitalization	23 hrs.	1 - 2 days

A reduction in pain medication.

The benefits of MAS surgical approaches to the spine include faster overall patient recovery times. (Source: Company Data.)



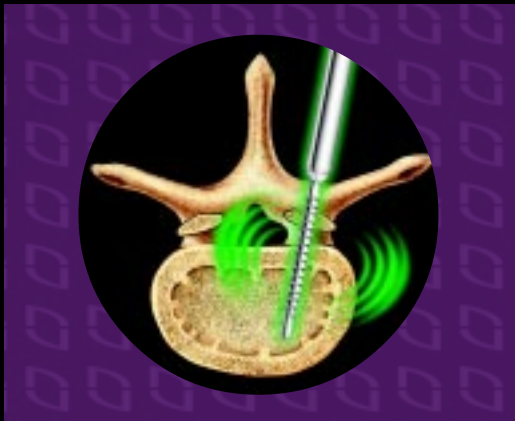
“Smart instruments” enable nerve avoidance during minimally disruptive spine surgery.



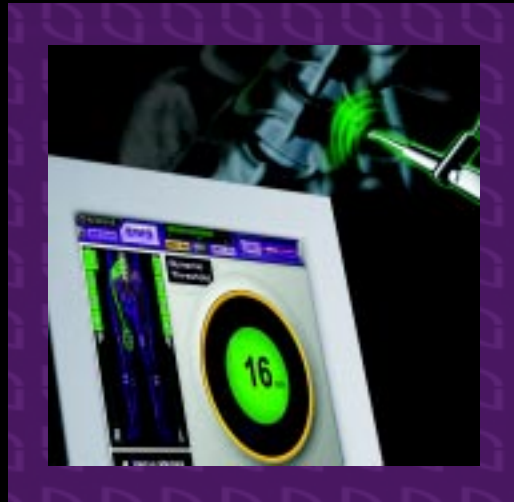
# MAS™ — NEUROVISION®

## NERVE AVOIDANCE SYSTEM

A key component of our MAS™ platform is NeuroVision®. This nerve avoidance system provides real-time feedback utilizing EMG (electromyography) and proprietary software algorithms to enable surgeons to detect underlying changes in nerve activity. By monitoring changes in electrical signals across muscle groups, our system analyzes and translates complex neurophysiologic data into simple, easy-to-interpret, real-time information, thereby assisting the surgeon's clinical decision-making process.



Nerve activity can be monitored during each step of the surgical procedure. Through the dynamic linking of surgical instruments to NeuroVision, the instruments become interactive or “smart.” For example, during a pedicle screw placement, the surgeon receives real-time feedback while preparing the pilot hole, tapping, and final screw positioning. As in the example (shown on the right) the nerve retractor acts as a stimulation source to monitor nerve roots during nerve retraction. As the NeuroVision system continuously monitors, it provides visual and audible confirmation for the surgeon to enable safe navigation of neural anatomy, resulting in safer and faster procedures with the potential for improved patient outcomes.

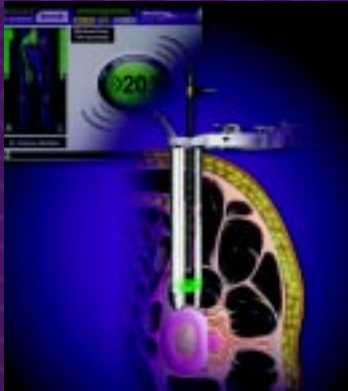


The monitoring of nerves has enabled advancements of minimally disruptive surgical procedures such as an XLIF™ procedure. The XLIF surgical approach results in less operating procedure time and reduced patient trauma and blood loss. Historically, XLIFs were viewed by surgeons as too difficult due to the presence of nerves that must be avoided. NeuroVision, as a key component of our MAS platform, facilitates innovative procedures such as XLIF, thereby assisting surgeons in overcoming the shortcomings of alternative minimally invasive surgical approaches.



## MAS™ — MAXCESS®

MaXcess® system consists of instrumentation that provides maximum access with minimal soft tissue disruption



*MaXcess versatility enables lateral, posterolateral, and posterior approaches.*



*A lateral view of the spine showing the use of MaXcess instrumentation.*



*The MaXcess retractor allows customizable surgical exposure for various patient requirements.*

Key to our MAS™ platform is our MaXcess system. MaXcess allows the surgeon to customize the surgical access to the spine in the shape and size specific to the patient and surgical requirement. This expanded access enables surgeons to perform a wide range of conventional spine procedures with minimal tissue disruption in a less traumatic manner. We believe procedures enabled by our MAS platform provide significant benefits, including reduced surgery times, reduced hospital stays, and less trauma and blood loss for the patient, resulting in faster overall patient recovery times.

MaXcess enables multiple applications and surgical approaches including: TLIF (Transforaminal Lumbar Interbody Fusion – a surgical approach from the back), PLIF (Posterior Lumbar Interbody Fusion), XLIF™ lateral, and decompression (removal of a portion of bone over the nerve root or disc from under the nerve root to relieve pinching of the nerve). We believe the MaXcess system, when used in

concert with the NeuroVision system and our specialized implants, will allow more surgeons to continue to use innovative procedures that offer important clinical benefits. The XLIF lateral and TLIF procedures, both results of this advanced technology, have resulted in faster overall patient recovery times.

The MaXcess split-blade design consists of three blades that can be positioned to maximize direct visualization of the patient's anatomy while fiber optic lighting enhances intraoperative visualization. This customizable access offers advantages over the fixed-tube design of other minimally invasive surgical systems. MaXcess enables surgeons to perform surgical procedures using instruments that are similar to those used in an open procedure, but with a significantly smaller incision. The ability to use familiar or conventional instruments reduces the learning curve and facilitates the increased adoption rate of our products.





# MAS™ — SPECIALIZED IMPLANTS

## SPECIALIZED FUSION IMPLANTS DESIGNED SPECIFICALLY FOR USE WITH THE MAS PLATFORM

Implants designed to be used with our MAS™ platform are utilized for interbody disc height restoration and stabilization of the spine. Implants include precision-machined lumbar allograft and related instrumentation for TLIF and XLIF™ surgical procedures, and CoRoent™ radiolucent implants for partial vertebral body replacement. Our implants are available in a variety of sizes to accommodate the patient's anatomical requirements and to meet the surgeon's need for the specific spine procedure.

Our fixation systems, including rods, plates, and screws, have been uniquely designed to be delivered through our MaXcess® system to provide



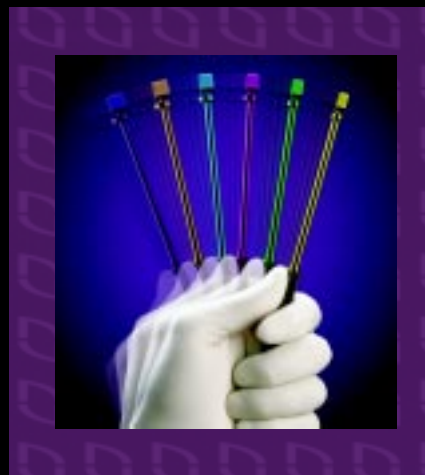
## CLASSIC FUSION

In addition to our MAS implants, we have developed a suite of products for traditional spine surgery, which we refer to as "classic fusion." This portfolio is comprised predominantly of bone allografts for cervical and PLIF (Posterior Lumbar Interbody Fusion) procedures but also includes titanium surgical mesh system and related instrumentation. Our allografts are uniquely saline-packaged to preserve graft strength and facilitate usage. Our color-coded instrumentation corresponds to allograft packaging, which simplifies the surgical process. We are continually focused on creating innovative products that assist the surgeon in providing better alternatives and improved efficiencies in spine surgery procedures.



stabilization of the spine. These systems accommodate minimally disruptive placement and are intended to reduce operating time and improve patient outcomes.

In September of 2004 we successfully launched our SpheRx™ pedicle screw system, designed to be inserted through either a MAS or traditional open procedure.



## COMMITMENT TO ABSOLUTE RESPONSIVENESS™

Building our cultural foundation on Customer Service, Surgeon Training, and Custom Instrumentation



As an organization, we at NuVasive have embraced the pursuit of Absolute Responsiveness™ with our customers, distributors, surgeons, and shareowners. We also apply this culture to our processes starting with product development, meeting surgery time schedules, answering questions in customer service and making prototypes and custom instrumentation to meet surgeon needs.

This culture provides the basis for which we conduct our business and has become the very foundation on which we are building NuVasive. The Absolute Responsiveness culture is embodied by the Cheetah symbol, the fastest mammal on Earth. Moving at Cheetah speed means bringing products to market faster than our competitors and striving to provide the utmost in service to our customers.

Absolute Responsiveness is a significant market differentiator which we take advantage of in many ways. We have built a 6-suite state-of-the-art cadaver operating theatre to respond to the need for surgeon training and use this venue to market all of our products. Through our dedicated team we strive to reproduce the operating room environment to ensure surgeons have a smooth transition from training in our operating theater to performing successful surgeries in their operating rooms.

Our on-site metal fabrication machine shop is designed for the sole purpose of responding to the needs of the surgeon and for supporting our rapid product development process. Our fabrication capabilities enable us to deliver surgeon-specified custom features often within days of the surgeon's request.



## CORPORATE INFORMATION

### BOARD OF DIRECTORS

Alexis V. Lukianov  
*Chairman and  
Chief Executive Officer*

Jack R. Blair  
*Chairman of the Board,  
dj Orthopedic, Inc.  
(orthopedic company)  
Retired Group President and  
Director,  
Smith & Nephew PLC*

James C. Blair, PhD  
*General Partner and Managing  
Member,  
Domain Associates, L.L.C.  
(venture capital management)*

Peter C. Farrell, PhD, AM  
*Chairman and  
Chief Executive Officer,  
ResMed, Inc.  
(medical equipment manufacturer)*

Robert J. Hunt  
*Retired Chief Financial Officer,  
AutoZone, Inc.  
and Co-founder Mercury  
Investment Group  
(investment advisory firm)*

Joseph S. Lacob  
*Partner,  
Kleiner Perkins  
Caufield & Byers  
(venture capital partnership)*

Arda M. Minocherhomjee, PhD  
*Partner of Chicago Growth Partners  
(private equity fund)*

Lesley H. Howe  
*Retired Partner,  
KPMG Peat Marwick L.L.P.  
(international & accounting  
auditing firm)*

### SENIOR MANAGEMENT

Alexis V. Lukianov  
*Chairman and  
Chief Executive Officer*

Keith C. Valentine  
*President*

Kevin C. O'Boyle  
*Executive Vice President  
and Chief Financial Officer*

Patrick Miles  
*Senior Vice President  
of Marketing*

James Skinner  
*Vice President of Sales*

G. Bryan Cornwall, PhD, P. Eng.  
*Vice President of  
Research & Development*

Jonathan D. Spangler  
*Vice President and  
Chief Patent Counsel*

### TRANSFER AGENT

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Glendale, CA 91204

### INDEPENDENT ACCOUNTANTS

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San Diego, CA 92101

### LEGAL COUNSEL

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4350 La Jolla Village Drive  
7th Floor  
San Diego, CA 92122

### SELECTED COMMON

**STOCK DATA**  
NASDAQ: NUVA

### INVESTOR RELATIONS CONTACT

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Chief Financial Officer*  
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646.536.7000

### FORM 10-K


The Form 10-K is available on the Internet by accessing NuVasive's web site at [www.nuvasive.com](http://www.nuvasive.com). A copy of the Company's most recent Form 10-K, as filed with the Securities and Exchange Commission (including consolidated financial statements and schedules thereto) will be provided to shareholders upon written request to the Company's Investor Contact.

### ANNUAL MEETING

July 27, 2005  
8:00 a.m. (PDT)  
4545 Towne Centre Court  
San Diego, CA

### CORPORATE HEADQUARTERS

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