

FORWARD LOOKING STATEMENT

This communication contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on management's current expectations, estimates and projections about our industry, our management's beliefs and certain assumptions made by our management. Words such as "anticipates," "expects," "intends," "plans," "believes," "seeks," "estimates," variations of such words and similar expressions are intended to identify such forward-looking statements. In addition, except for historical information, any statements made in this communication about anticipated financial results, growth rates, new product introductions, future operational improvements and results or regulatory approvals or changes to agreements with distributors also are forward-looking statements. These statements are not guarantees of future performance and are subject to risks and uncertainties, including the risks described in public filings with the U.S. Securities and Exchange Commission (SEC). Our actual results may differ materially from the anticipated results reflected in these forward-looking statements. Copies of the company's SEC filings may be obtained by contacting the company or the SEC or by visiting RTI's Web site at www.rti.com or the SEC's Web site at www.sec.gov.

ABOUT RTI BIOLOGICS INC.

RTI Biologics Inc. is a leading provider of sterile biological implants for surgeries around the world, with a commitment to advancing science, safety and innovation. RTI prepares donated human tissue and bovine tissue for transplantation through extensive testing and screening, precision shaping and proprietary, validated sterilization processes. These allograft and xenograft implants are used in spine, sports medicine, orthopedic, dental and other surgical specialties.

CORPORATE HEADQUARTERS

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BOARD OF DIRECTORS

Brian K. Hutchison | Chairman & CEO, RTI Biologics Inc.
Dean H. Bergy | Advisor to the Chief Financial Officer, Stryker
Julianne M. Bowler | Insurance Consultant
Philip R. Chapman | President, Venad Administrative Services, Inc., General Partner, Adler and Company
Roy D. Crowninshield, Ph.D.
Peter F. Gearen, M.D. | Division Chief of Joint Replacement and Reconstruction and Alumni Associate Professor of Orthopedics, University of Florida College of Medicine
Udo Henseler, Ph.D. | President and proprietor, Management Services International
Michael J. Odrich | Managing Director, Neuberger Investment Management; Managing Director and Global Head, Alvarez & Marsal Capital
Gregory P. Rainey | President, CCI Performance Group
Adrian J.R. Smith | Chief Executive Officer, The Woolton Group

INVESTOR CONTACT

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INDEPENDENT AUDITORS

Deloitte & Touche L.L.P. | 201 East Kennedy Boulevard, Suite 1200 | Tampa, FL 33602

AUDIT COMMITTEE

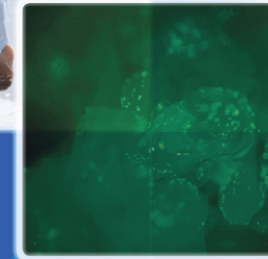
Dean H. Bergy (Chairman) | Udo Henseler, Ph.D. | Julianne M. Bowler

TRANSFER AGENT

Registrar and Transfer Company | 10 Commerce Drive, Cranford, NJ 07016 | 908.497.2300

CORPORATE COUNSEL

Fulbright & Jaworski L.L.P. | 666 Fifth Avenue, 31st Floor, New York, NY 10103 | 212.318.3076



2010 Letter to Shareholders

ANNUAL
SHAREHOLDERS'
MEETING

THURSDAY, MAY 5, 2011

7:30 a.m. EDT

Tampa Airport Marriott
Tampa, Fla.

Advancing Science, Safety & Innovation

2010 MILESTONES

JANUARY

Matrix HD™ Donated to Treat Young Child with Rare Genetic Skin Condition

Sterilized dermis allograft, Matrix HD™, was donated to treat an eight-year old patient with a rare skin disease called recessive dystrophic epidermolysis bullosa (EB).

FEBRUARY

\$250,000 Grant Awarded for Groundbreaking Ligament and Tendon Repair Research

RTI provided financial support to AOSSM's research initiatives intended to highlight important issues in orthopaedic sports medicine.

Matrix HD Donated for Surgeries in Haiti

Matrix HD™ sterilized dermis allografts were donated for victims of the natural disasters in Haiti. The allografts were used in limb salvage procedures.

MARCH

Reimbursement Hotline Launched

A toll-free hotline designed to assist hospitals and physician customers with day-to-day reimbursement questions as well as a web-based service for the submission of requests was introduced.

New Biologic Implant Launched at Orthopaedic Surgeon Annual Meeting

The next-generation BTB Select® is an innovative allograft that provides precision sized tendons for ACL reconstruction. The BTB Select was launched at the American Academy of Orthopaedic Surgeons (AAOS).

JUNE

New Organization Structure Announced

Robert P. Jordheim joined the company as executive vice president and chief financial officer (CFO). Thomas F. Rose, executive vice president, transitioned from the role of chief financial officer to RTI's chief operations officer (COO). Caroline A. Hartill was named executive vice president and chief scientific officer (CSO) and Roger W. Rose was named executive vice president and chief commercial officer (CCO).

JULY

Dean H. Bergy Added to Board of Directors

Bergy currently serves as advisor to the chief financial officer at Stryker, a position he has held since April 2009. He served the previous six years as Stryker's vice president and chief financial officer. He will be up for re-election in 2012.

SEPTEMBER

RTI Biologics and Zimmer Dental Enter Distribution Agreement for Global Biologic Implants

This exclusive, 10-year distribution agreement with Zimmer Dental Inc. for biologic implants for the dental market worldwide was effective Sept. 30, 2010.

Collaboration with Athersys in the Orthopedic Market Announced

An agreement was signed under which Athersys will provide RTI access to its Multipotent Adult Progenitor Cell (MAPC) technologies. This will enable RTI to develop and commercialize MAPC technology-based biologic implants exclusively for certain orthopedic applications.

March 19, 2011

Dear Shareholders:

As we reflect on 2010, we saw a year that ended strong, in which we made significant progress in the areas we directly control, such as increasing revenue from our direct distribution, improving operating efficiencies, increasing liquidity and decreasing debt.

Today, the balance sheet is much stronger than a year ago. We increased cash by \$10.8 million and decreased debt by \$12 million. We also decreased inventories by \$6.7 million dollars as the result of improved tissue yields and operating process efficiencies. By building on the activities of 2010, we are confident that we will be able to continue these improvements in 2011 and beyond.

In 2010, we achieved record annual revenues of \$166.2 million for the full year, an increase of one percent compared to 2009. While we gained momentum financially by the end of the year, it was not enough to fully overcome increased market pressures experienced by many of our distributors and inventory adjustments initiated by certain large distributors earlier in the year.

The company reported a net loss of \$129.4 million, or \$2.36 per fully diluted share for the full year. The driver of the net loss was a non-cash goodwill impairment charge of \$134.7 million, or \$2.46 per fully diluted share, which was announced in the third quarter. Excluding the impairment charge, adjusted net income for 2010 was \$5.3 million, or \$0.10 per fully diluted share.

2010 MILESTONE – ZIMMER DENTAL AGREEMENT

In September 2010, we signed a new, exclusive, 10-year distribution agreement with Zimmer Dental Inc. for biologic implants for the dental market worldwide. As a result of this new agreement, we were able to protect the business, provide sustainable growth, improve profitability, and improve liquidity—all key goals for the company.

Under the agreement, RTI is supplying sterilized allograft and xenograft implants for an agreed upon transfer fee, as opposed to the marketing fee structure of the companies' previous agreement. Zimmer is responsible for worldwide marketing and distribution of



biologic implants for use in dental applications.

The new agreement includes an initial \$13 million upfront payment, which we received in 2010, as well as annual payments for the length of the contract to secure exclusive distribution rights in the dental market. Additionally, Zimmer has committed to annual order minimums to preserve exclusivity. The financial structure of the new agreement has improved operating margins for RTI in the dental segment of our business and has strengthened our financial position.

In order to help our investors better understand the financial impact of the new dental agreement, we have posted an example showing the difference between the new agreement and the old agreement based on a hypothetical end user price in the Investor section of our website at www.rti.com/investors/financial-highlights.

Our working relationship with Zimmer Dental has been extremely positive so far, and while the economy impacts this area of the business more than others, we are excited about this product line and our future plans to grow this business.

2010 MILESTONE – MAPC TECHNOLOGY

Additionally, in September 2010, we embarked on a major new product initiative when we announced an agreement with Athersys under which they will provide RTI access to its Multipotent Adult Progenitor Cell (MAPC) technologies. We believe that implants based on the MAPC technology hold a lot of promise for our surgeons and their patients.

Under the agreement, RTI has licensed Athersys' technology to isolate and preserve cells from organ and tissue donors. This will enable RTI to develop and commercialize MAPC technology-based biologic implants exclusively for certain orthopedic applications. With this license, RTI expands its capabilities for accessing the fastest growing segment of the bone graft substitutes market.

After significant research into stem cells and the evaluation of multiple technologies, we determined that the MAPC technology offers the greatest potential to create high quality, innovative implants for our surgeons and their patients. Licensing this technology is an important step in enhancing and further differentiating RTI's orthobiologics offering, an area of strategic focus for the company.

As we continue to develop this project over the course of 2011, we anticipate initiating small and large animal studies early in the second half of this year. We then expect to follow up with initial human implants in the fourth quarter of 2011.

We anticipate that MAPC technology-based biologic implants will be available to our customers for use in orthopedic surgeries in the first half of 2012.

DIRECT BUSINESS CONTINUES STRONG GROWTH

U.S. direct distribution continues to be the company's strength and focus. In 2010, our direct distribution force was focused on sports medicine and osteobiologics and was responsible for 29 percent of total annual revenues. By contrast, in 2005 when we started our direct distribution force, more than 60 percent of our business was in spine – today our spine business represents about 20 percent of our total revenue. While we will always strive to provide excellent service and maintain strong relationships with our distributors in the spine, dental, BGS/GO and surgical specialties markets, we have been successful at diversifying our business and showing strength in growing our direct business.

Our direct sports medicine business has grown to be our largest revenue segment in 2010. Domestically, sports medicine grew 20 percent in 2010, which is much higher than the overall industry growth rate. We continue to gain market share due to our superior product quality, well-trained direct distribution group, and excellent customer service.

Over the next year and beyond, we are focused on seeking "tuck in" acquisitions to enhance our sports medicine portfolio and leverage our direct distribution force.

We expect that sports medicine will remain a key growth driver for 2011.

BGS/GO total revenues were 15 percent of total annual revenues in 2010. Our direct distribution efforts in this line of business continue to grow, accounting for about 23 percent of the total domestic BGS/GO revenue in the fourth quarter of 2010 and 20 percent for the full year.

We anticipate that growth in this area in 2011 will be primarily due to expansion of our direct distribution group. This business will also benefit from the launch of MAPC technology based implants in early 2012.

FUTURE GROWTH

We expect that revenue in 2011 will be driven by continued growth in our direct distribution group as well as new product introductions. While we are focused on prudently controlling expenses, we also are investing in initiatives that we anticipate will accelerate our future revenue growth and support our new product development.

Specifically, as I mentioned in February on our 2010 year-end earnings call, we are anticipating more balanced growth across our business lines, ranging from virtually flat to mid-single digit growth rates in each segment.

As many of you know, our business model requires effective use of all donated tissue regardless of the business line. As a result, availability of tissue is somewhat dependent upon the growth rates of all of our lines of business. Because of this fact, we expect to see growth moderate this coming year, specifically sports medicine revenues, to be more in-line with market growth rates.

The company expects full year revenues for 2011 to be between \$159 million and \$162 million. Full year earnings per fully diluted share are expected to be in the range of \$0.11 to \$0.13, based on 55.4 million fully diluted shares outstanding. Assuming the new agreement with Zimmer Dental was effective Jan. 1, 2010, this represents an increase of between three percent and five percent.

We are pleased with our liquidity position and confident in our ability to generate cash in 2011 while achieving our operating goals for the year. While we are focused on controlling expenses, we continue to invest in initiatives that will accelerate our future revenue growth and support our new product development.

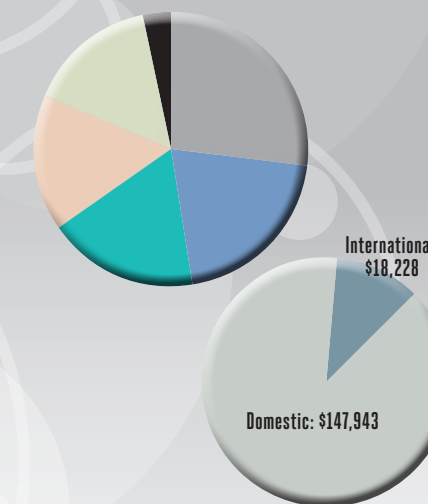
Our strong distribution channels and robust portfolio of best-in-class products, combined with our expertise in biologics, have allowed us to grow several of our businesses in this unfavorable economic climate, and will allow us to be successful in the long term.

Sincerely,

Brian K. Hutchison
Chairman and CEO

REVENUES (in thousands)

Sports Medicine	\$45,065
Spinal Constructs	\$33,906
Dental	\$29,746
Surgical Specialties	\$26,871
BGS General Orthopedic	\$25,413
Other non-tissue	\$5,170
Total	\$166,171



REVENUES BY YEAR (in millions)



*Includes revenues for the former Tutogen Medical, Inc. from 2/28/08 to 12/31/08.