# Apogee Technology, Inc. Annual Shareholder Meeting

Bringing Nanotechnology to Life™



# **Forward-Looking Statements**

This presentation contains forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995. For this purpose, any statements contained in this presentation that are not statements of historical fact may be deemed to be forward-looking statements. Without limiting the foregoing, the words "believes", "anticipates", "plans", "expects", and similar expressions are intended to identify forward-looking statements. Actual results may differ significantly from results discussed in the forward-looking statements. Factors that might cause such differences include those set forth from time to time in the Company's SEC filings, including in our annual report on Form 10-KSB.



## **Product/Market Overview**

Sensor Group: Solutions for Industrial, Consumer, Medical, Automotive



**Medical Group:** Providing Advanced Therapeutic Delivery Technologies





# **Key Support Partners**



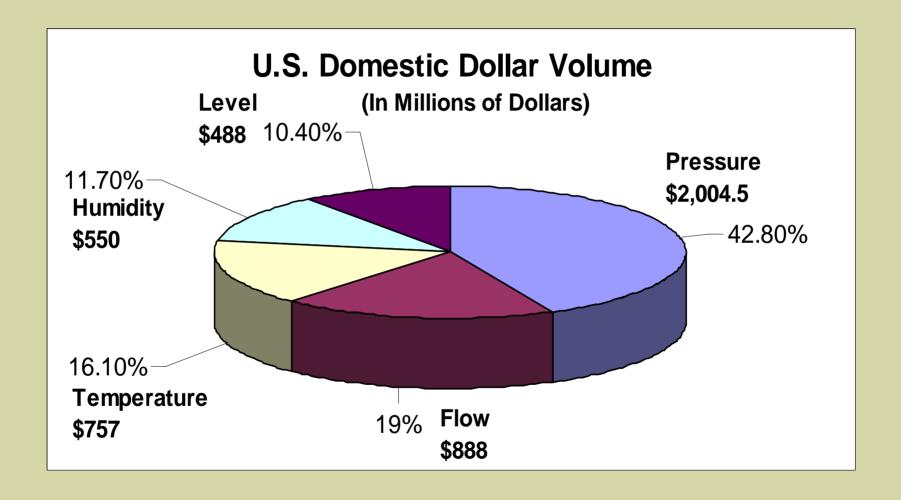
- Material Safety Testing
- Drug Delivery Testing
- Drug Encapsulation
- FDA Regulatory Strategy
- Medical Manufacturing
- Micro-Sensor R&D
- Sensor Fabrication
- Carbon Nanotube (CNT)
   Development
- Intellectual Property



# **Sensor Group**

The Sensor Group's mission is to be a versatile provider of sensor solutions by providing unique technologies and products that meet unmet customer needs. Our highly differentiated products allow customers to improve efficiencies and reduce costs.

## **U.S. Sensor Market Overview**





# **Business Strategy**



- Multi-Level Product Strategy to Move up Product Value Chain
- Leverage and Combine Technologies to Produce End Products
- Develop/License Technologies to Expand Market Opportunities
- Target Broad Markets:
   Automotive, Medical, Industrial and Consumer



# Moving Up the Value Chain

Value

















**Packaged** Sensor

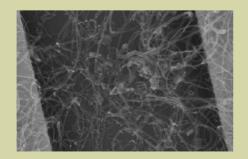
Sensilica™ Die

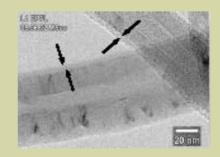
#### **Product Release Timeline**



# **New Sensor Technology**

- Carbon Nanotube (CNT) Sensor Program
  - Research Agreement with Stony Brook University
  - Target Gas/Chemical Sensing Opportunities
- Progress
  - Developed CNT Manufacturing Process
  - Demonstrated Gas Sensor Feasibility
  - Next Step: Validate Sensor Application







# **Marketing and Sales**

#### **Direct OEM Sales**

#### **Distributors for Specific Markets**

- E.g., HVAC, fluid power & petrochemical
- Leverage Audio Distributors in Asia

#### **Catalog Sales**

Replacement business

#### **Key Sensor Show Promotions**

SENSOR + TEST 2006
THE MEASUREMENT FAIR

Die Messtechnik-Messe

sensors expo & conference





**Sensor Solutions** 

Pressure Strain Position Wireless

Ever hear of Apogee? Audiophiles have been listening to us for almost 20 years. After all, a speaker is just a transducer that grew up to say something! Apogee brings our experience in consumer audio and digital electronics to the world of Sensors.

See our Sensors olutions for: PRESSURE, POSITION, STRAIN and BlueSensor™ WIRELESS CONNECTIVITY.

Visit Booth #1118 to hear the buzz



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# **Medical Group**

The Medical Group's mission is to be a leading provider of advanced therapeutic delivery products and technology to the health community.

# **Medical Advisory Board**

Dr. Peter Carroll (Chairman)
 Founder of Medlen & Carroll, LLP, a leading biotechnology patent law firm

Dr. Joachim Kohn
 Director of NJ Center for Biomaterials

Dr. Sanford Simon

Professor of Biochemistry, Cell Biology, and Pathology at Stony Brook University



# **Medical Advisory Board**

- **Dr. Peter G. Carroll, Esq.** (Chairman of the Apogee Advisory Board) has approximately ten years of experience in basic scientific research (1977-1979 Sidney Farber Cancer Institute; 1979-1983 Tufts Sackler School of Graduate Studies; 1983-1984 Eunice Kennedy Schriver Center) as well as significant experience in commercial research and development (1984-1986 Travenol-Genentech Diagnostics, Inc.). He also has seven years of hands on medical laboratory experience (1980-1987 New England Medical Center). From 1991 to 1993, Dr. Carroll was Vice President of Commercial Development of a biotechnology startup, now known as Cerus Corporation, a company formed to address the commercial need for solutions to blood contamination. Dr. Carroll is the founder of his own biotechnology patent law firm, Medlen & Carroll, LLP, with offices in California, Massachusetts, New York, Texas and Wisconsin.
- **Dr. Joachim Kohn** is a Board of Governors Professor of Chemistry and Chemical Biology at Rutgers and an Adjunct Associate Professor of Orthopedics at the New Jersey Medical School. He currently serves as director of the New Jersey Center for Biomaterials. He is a fellow of the American Institute for Medical and Biological Engineering (AIMBE) and served as the secretary-treasurer of the Society for Biomaterials. He is the principal investigator of an NIH funded postdoctoral training program in tissue engineering and implant science. His research interests focus on the development of new biomaterials for prostheses, implantable drugs, gene delivery systems and tissue regeneration scaffolds. He has published 200 scientific manuscripts and reviews, and is listed as an inventor on 37 patents.
- Dr. Sanford R. Simon has over 40 years' of experience in biochemistry and cell biology as well as applied genetic research. He has been a Professor of Biochemistry, Cell Biology and Pathology at Stony Brook since 1997. He joined the faculty at Stony Brook as an Assistant Professor in 1969 and was promoted to Associate Professor with tenure in 1975. Dr. Simon was a member of the Board of Directors of The Collaborative Group from 1995 to 2004. From 1967 to 1969 Dr. Simon was a Guest Investigator at Rockefeller University. Dr. Simon received a B.A. in Zoology and Chemistry from Columbia University in 1963, a Ph.D. in Biochemistry from Rockefeller University in 1967, and studied as a postdoctoral fellow with Nobel Prize winner Max Perutz in Cambridge, England. Dr. Simon's research efforts, which currently include development of vaccines and small molecule therapeutics for biodefense applications, have been funded over the past several years in part by grants from the National Institutes of Health and the Department of Defense. Dr. Simon is also the principal investigator on a project entitled "A Chimeric Method and System for DNA Encryption and Authentication", which is funded jointly by APDN, Stony Brook's Center for Biotechnology and the New York State Office of Science, Technology and Academic Research.



## **Transdermal Market Overview**

- FDA Approved 35 "Passive" Delivery Products (Small Molecule) Since 1979
- Transdermal Market is Growing Rapidly<sup>1</sup>
  - \$13 Billion today growing to \$32 Billion in 2015
  - TDD is 2.3% of \$550 Billion Global Drug Market
- New Transdermal Solutions
  - Expand market by enabling the delivery of large molecule (Biotech) as well as existing small molecule therapies
  - Large molecule drugs 60% revenue growth by 2010 \$26B increase compared to \$13B for small molecules

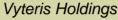
[1] Jain PharmaBiotech, "Transdermal Drug Delivery – Technologies, Markets and Companies", December 2005



# Alternative Transdermal Delivery Systems









Sontra Medical

#### **Apogee Approach**

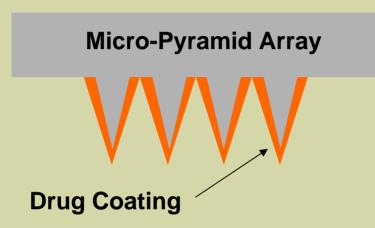


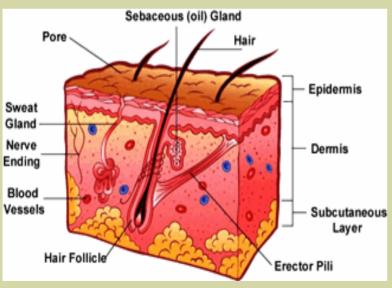
Apogee Technology

Patch	Iontophoresis	Ultrasound	Micro-needles
Passive Diffusion	Electrical Field	Sound Pressure	Create Micro-Pores
Small Molecule	Limited Drugs	Limited Drugs	Small & Large Molecule
Self Administration	Complex Powered System	Complex Powered System	Self Administration



# Apogee's PyraDerm<sup>TM</sup> Advantages



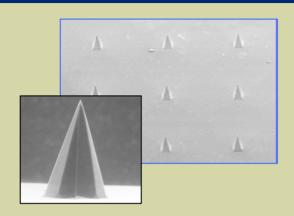


## Micro-Pyramids Create Pores in Epidermis to Enable Delivery of Therapeutic Compounds

- Precise delivery into skin layers
- Delivery of large molecule biotech drugs via drug coatings
- Immediate and timed release
- Potentially fewer side effects
- Avoids digestive system
- Less medication required
- Self administration, painless



# **Apogee Drug Delivery Technologies**



PyraDerm<sup>™</sup> Array



Sample Patch

## Micro-Pyramid<sup>™</sup> Array

- Robust (Safety)
- Precise Delivery (Efficacy)
- Volume manufacturing

## Drug Encapsulation

- Preservation (Shelf life)
- Time Release
- Volume Manufacturing



# **Program Activities**

- Intellectual portfolio: retained biotech IP firm, completed prior art analysis, licensing and filing patents
- Technology: demonstrated feasibility of PyraDerm<sup>™</sup> in laboratory testing for "programmable release with optimal tuning", ready for in-vivo (animal) testing
- Product: manufactured pre-production devices under GMP standards
- <u>Business development</u>: completed unmet medical needs, market opportunity analysis, identified partnering strategies



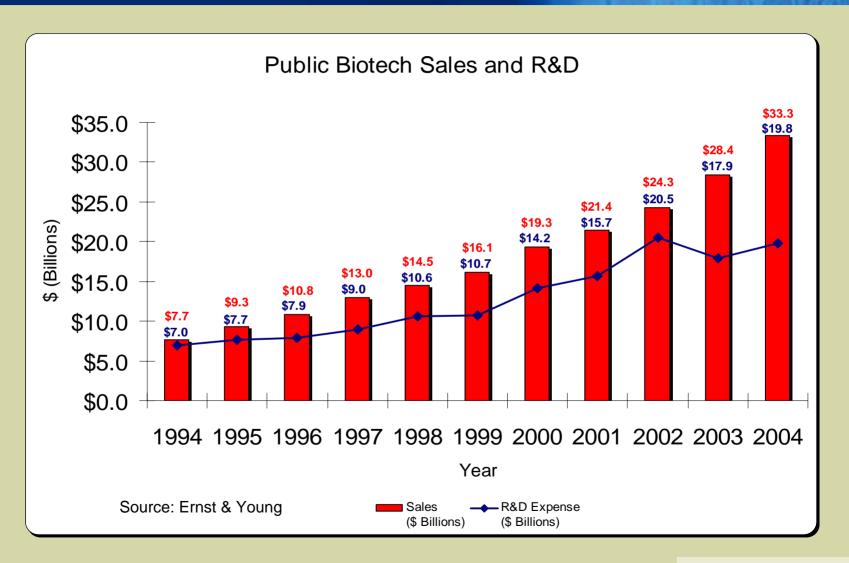
# **Pursuing Partnership Strategy**

Establish value and pursue development partnership agreement with a pharmaceutical company upon successful in-vivo demonstration of PyraDerm™

- Protect market share by extending drug patent life
- Increase profits by maximizing efficacy, safety, shelf life, affordability, enabling new technologies
- Gain competitive advantage by offering noninjectable solution for delivery of large molecules
- Reduce drug liability by minimizing potential adverse drug side effects



## Large Molecule Drug Sales





# **Initial Application Focus**

 Selection Criteria Based on Unmet Medical Need and Market Analysis

## Selected Three Initial Therapies

- Large Molecule Biotech Drugs Currently Injected
- Total Market For Selected Drugs >\$12 Billion

## Key Market Advantages

 Patent Life Extension, Self Administration, Injection Replacement, Shelf Life



# **Ongoing Program Activities**

## Research & Development

- Continue to generate intellectual property
- Tailor PyraDerm<sup>TM</sup> to enable additional applications

### Pre-clinical and Clinical Trials

Generate proof-of concept for target drugs

## Manufacturing Capability

 Establish unique capability of manufacturing products that can enter into clinical development (GMP standard)

## Regulatory Strategy

Obtain regulatory compliance of PyraDerm™



# Thank You