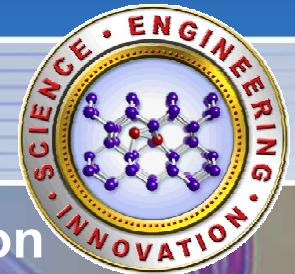


Industrial Partnerships at Sandia National Laboratories

SAND2009-5486C



**Presented to New Mexico Legislative Committee on
Science, Technology, and Telecommunications**

September 2, 2009

Hal Morgan
Senior Manager
Industrial Partnerships and Strategy
Sandia National Laboratories

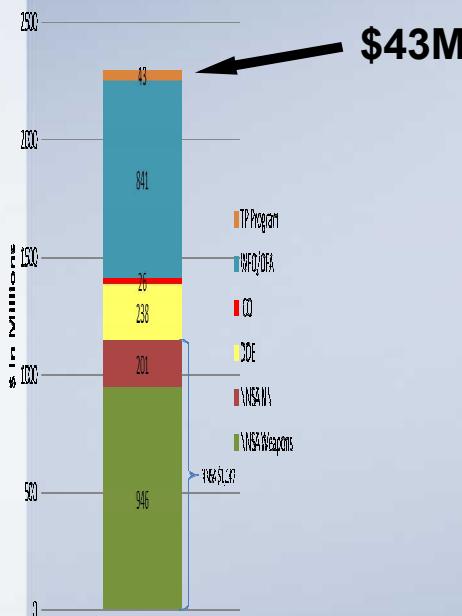


Sandia National Laboratories

Technology Transfer is a DOE & Sandia Mission

Mandated by Law

- National Competitiveness Technology Transfer Act of 1989
- DEARS Clause in Sandia's Contract
- Establishment of Office of Research & Technology Applications (ORTA)



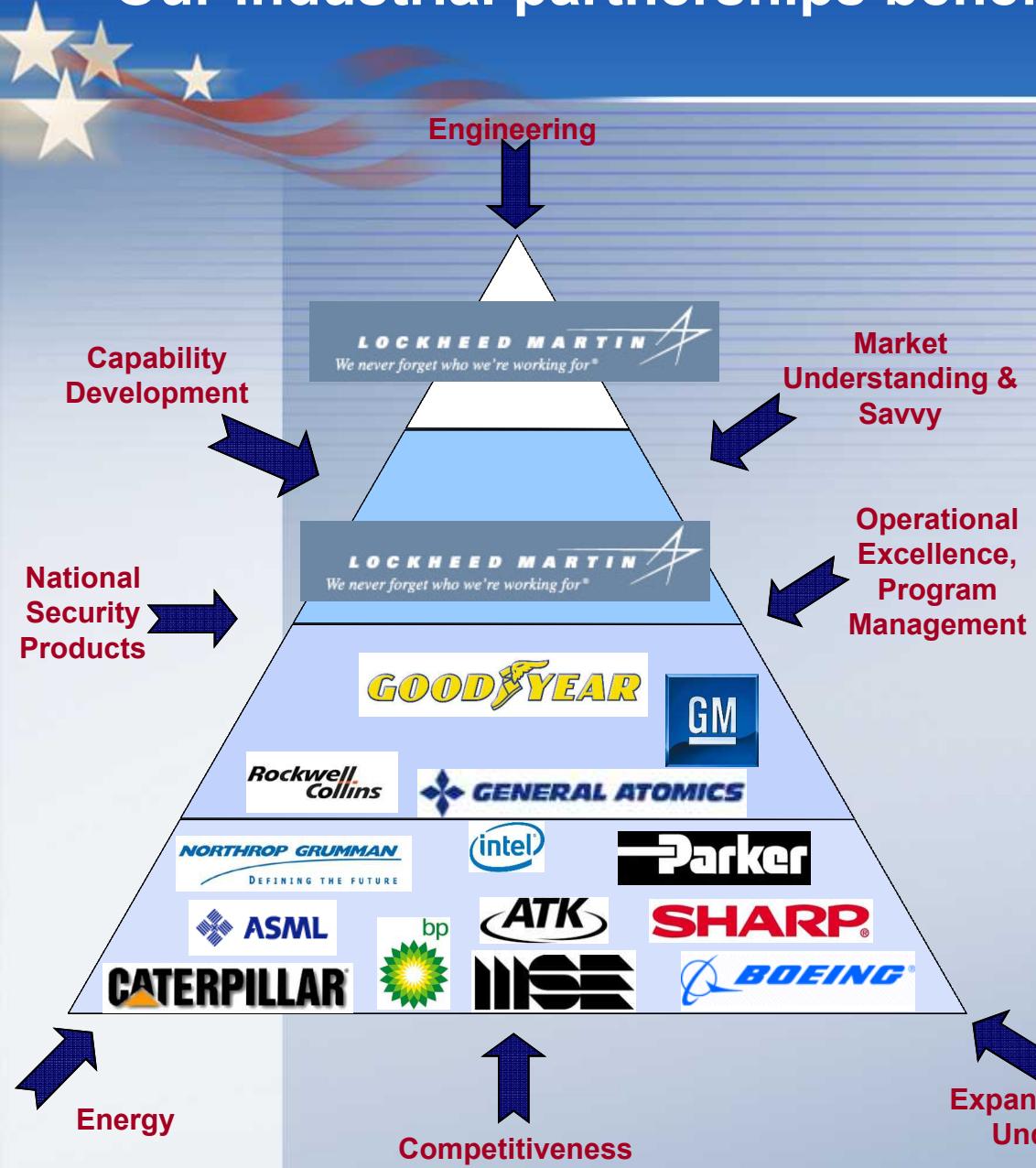
Tech Transfer Mechanisms

- Cooperative Research & Development Agreements (CRADAs)
- Work for Others (WFO)
- Licensing of Sandia IP
- SBIRs
- New Mexico Small Business Assistance Program
- Entrepreneurial Separation to Transfer Technology
- Sandia Science & Technology Park
- Memoranda of Understanding
- Funding
 - Full Cost Recovery
 - Paid by a Specific DOE Program or by industry



Sandia National Laboratories

Our industrial partnerships benefit both industry & Sandia



Sandia continues to lead the complex in numbers of & funds from industrial partnerships



Sandia National Laboratories

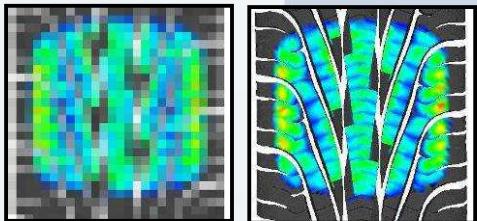
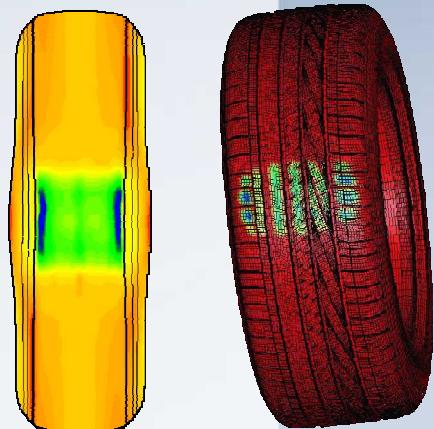
Sandia/Goodyear Technology Partnership

Develop and validate computational mechanics (finite element) tools for predicting structural, thermal, and fluid response of viscoelastic systems during manufacturing and use

Technology Breakthrough 1994-1996

"The Pneumatic Tire Represents One of the Most Formidable Challenges in Computational Mechanics Today"

A. Noor, Journal of Computers and Structures

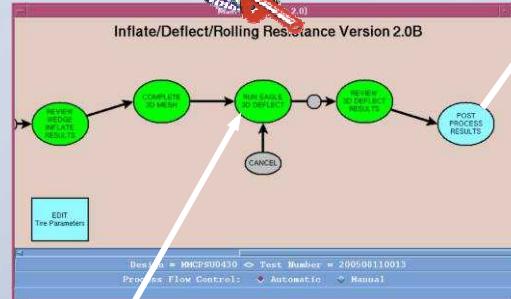
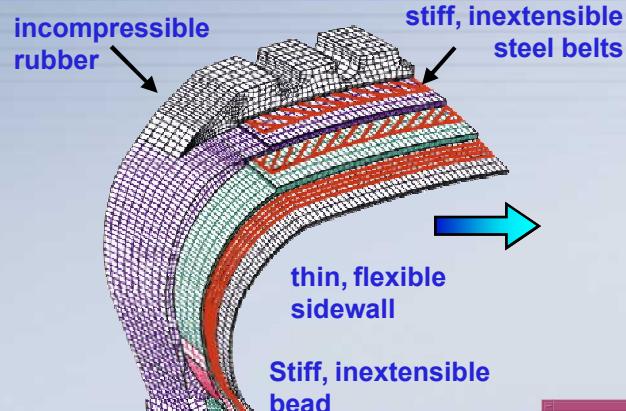


Before

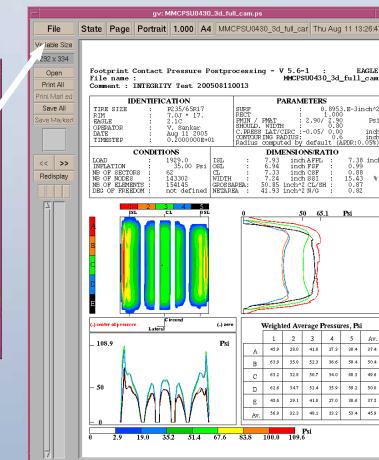
After

Technology Maturation 1997-2003

Traditional Build/Test Product Development – 2-3 Years



Automated Simulation
Process



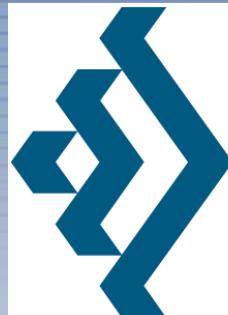
Innovative New Products 2004 - Future

Today 100% of the tire designs at Goodyear are modeled before molds are ordered.



Sandia National Laboratories

Technology-Based Economic Development Programs



**SANDIA SCIENCE &
TECHNOLOGY PARK**



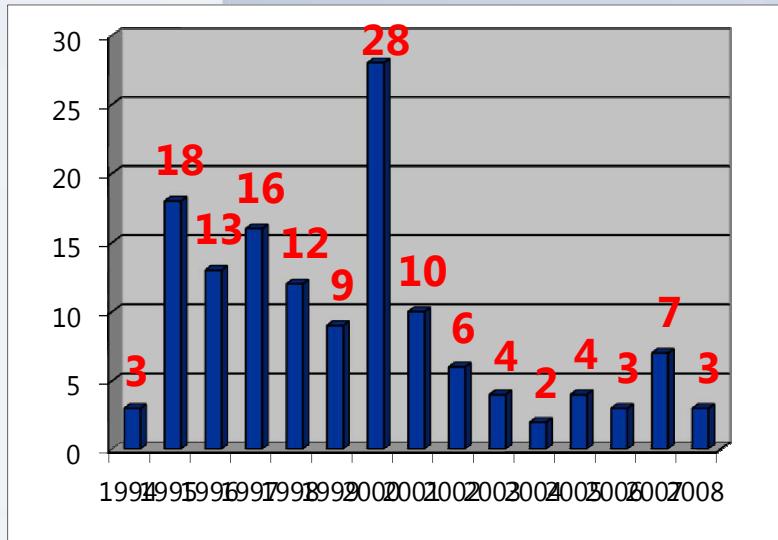
ESTT

*Entrepreneurial Separation
to Transfer Technology*



Sandia National Laboratories

Entrepreneurial Separation to Transfer Technology (ESTT)



- Entrepreneurs terminate Sandia employment
 - Term of separation is two years with the option to request a third year
 - Entrepreneurs are guaranteed reinstatement by Sandia if they return before ESTT expiration
- Participants may start up or help expand technology-based small businesses



Sandia National Laboratories



ESTT Success Stories



Wavefront Sciences

- Founded by Sandian who left on ESTT Program
- Licensed optics-based technology from Sandia
- Grew from 3 to 40 employees in NM
- Now part of Abbott Medical Optics, a division of global-based Abbott Laboratories, but still located in NM

eSolar

- Sandian joined eSolar through ESTT program to help expand a company
- eSolar is partnering with NRG Energy to build a 92 megawatt concentrating solar power plant in southern NM



Sandia National Laboratories

New Mexico Small Business Assistance (NMSBA) Program



- **Governed by the Laboratory Partnership with Small Business Tax Credit Act (a New Mexico State Law)**
- **Public/Private Partnership with State of New Mexico, Los Alamos National Laboratory, Sandia National Laboratories, and New Mexico Small Businesses**
- **Allows up to \$2.4M per lab per year in assistances and tax credits**
- **Must be a New Mexico for-profit small business to qualify**
- **Companies in rural counties are eligible for \$20K per business each year; urban counties are eligible for \$10K per business each year**



Sandia National Laboratories

NMSBA Success Stories for Sandia

Giggling Springs

- Hot Springs in Jemez
- Sandia helped them to use heat from hot springs water to provide heat for cabins
- Propane costs were reduced from \$2500 to \$800 per month

Four Corners

- Oil and gas companies in Farmington/Aztec area
- Sandia helped them create a system to desalinate produced water from coal bed methane mining
- Reduced cost of water treatment and transportation



Sandia National Laboratories

Sandia Science & Technology Park

“A Master-Planned Technology Community”



- 200+ Acres
- Affiliated with Sandia National Laboratories
- Pedestrian-Oriented, Campus-Style Park
- State-of-the-Art Fiber Optics Network

“Celebrating 10 Years of Economic Growth”



Sandia National Laboratories

SS&TP Public/Private Partnership

ORIGINAL PARTNERS

- Sandia National Laboratories
- Technology Ventures Corporation
- City of Albuquerque

LAND OWNERS

- Albuquerque Public Schools
- BUILD New Mexico/Union Development Corporation*
- New Mexico State Land Office

OTHER KEY PARTNERS

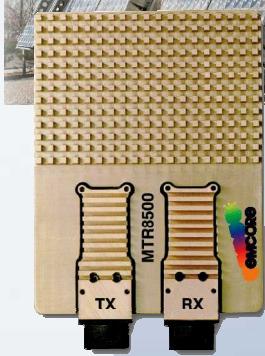
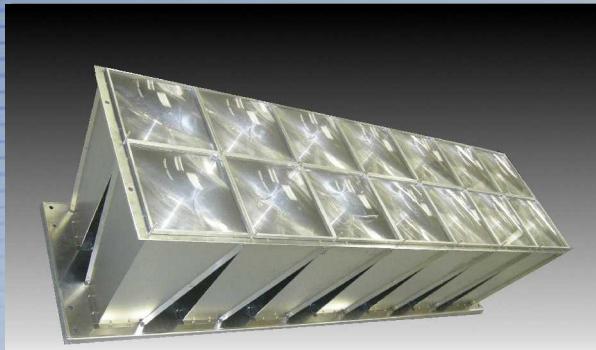
- **Department of Energy**
- **Lockheed Martin Corporation***
- **Economic Development Administration**
- **State of New Mexico**
- **Bernalillo County**
- **Public Service Company of New Mexico***
- **Mid-Region Council of Governments**
- **New Mexico Congressional Delegation**

*Private organizations



Sandia National Laboratories

SS&TP Success Story: EMCORE



- EMCORE is a publicly traded company
- First company to move into Park in 1998
- Moved company head-quarters from NJ to NM in 2006
- Licensed from Sandia
 - VCSEL technology
 - Solar cell technology
 - Transponder technology
- \$114.7M investment in Park
- 350+ employees at Park
- Signed Distributed Generation Agreement with PNM



Sandia National Laboratories