

Industrial Partnerships at Sandia National Laboratories



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Science, Technology, and Telecommunications

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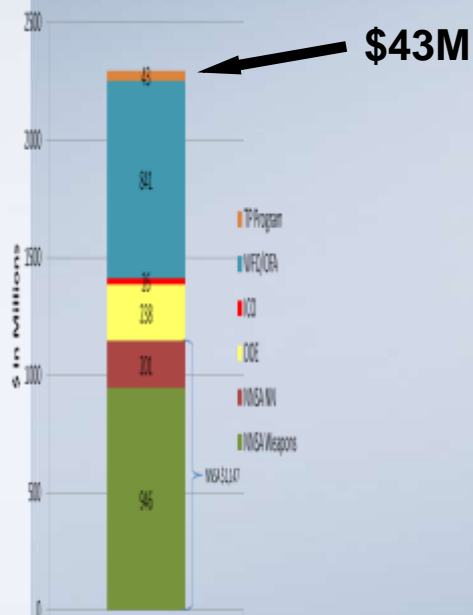
Technology Transfer is a DOE & Sandia Mission

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



Our industrial partnerships benefit both industry & Sandia



Engineering



Capability Development



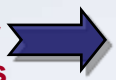
Market Understanding & Savvy



Operational Excellence, Program Management



National Security Products



Energy



Competitiveness



Expanding Technical Understanding



Benefits to Sandia

- More robust and mature Sandia technology
- New capabilities for application to weapons problems
- New insights into weapon applications from looking at them from a new perspective
- Insights into transformation of design processes and cultures from industry
- Metrics on the value and quality of Sandia technology
- Extended value for tax-payers dollars to national economic security
- Broadening of technical staff experience on new and different applications
- Improved supplier base for weapons needs

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

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

Technology Maturation
1997-2003

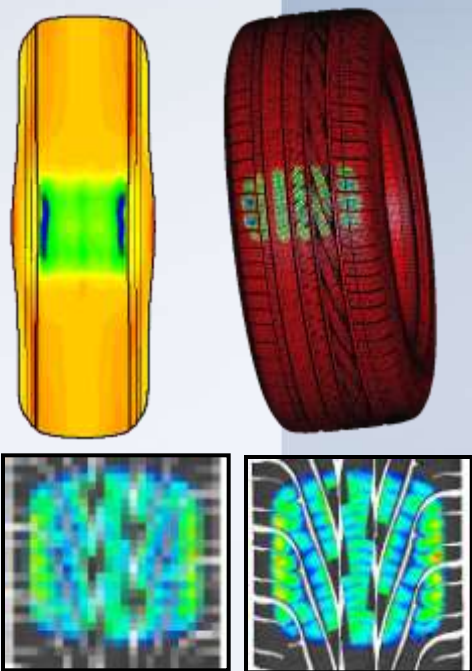
Innovative New Products
2004 - Future

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

A. Noor, Journal of Computers and Structures

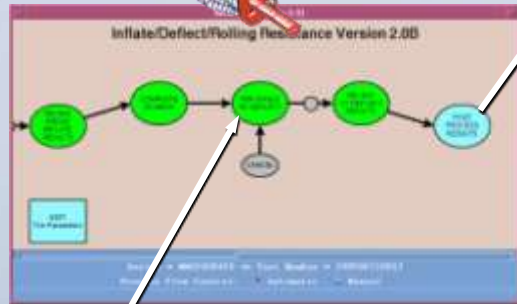
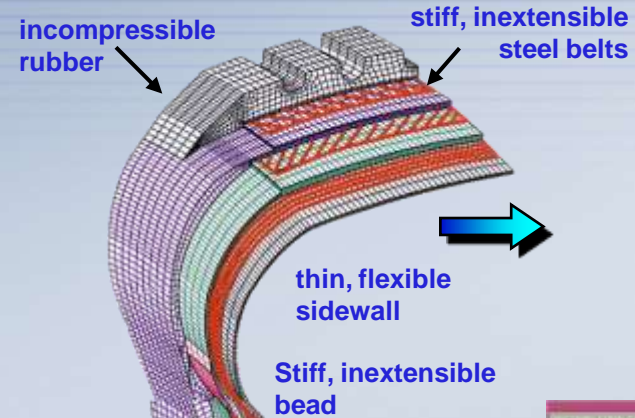
Traditional Build/Test Product Development – 2-3 Years

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

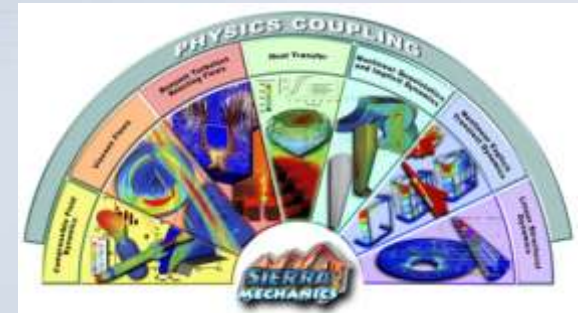
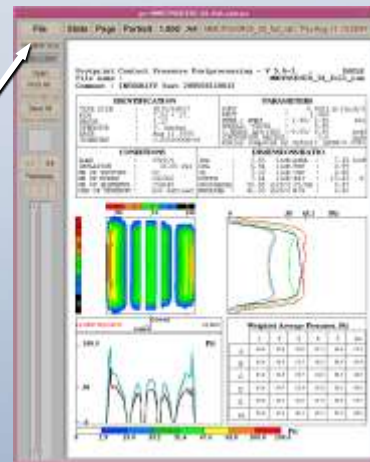


Before

After



Automated Simulation Process



Technology-Based Economic Development Programs



**SANDIA SCIENCE &
TECHNOLOGY PARK**



NMSBA

Los Alamos National Laboratory
Sandia National Laboratories

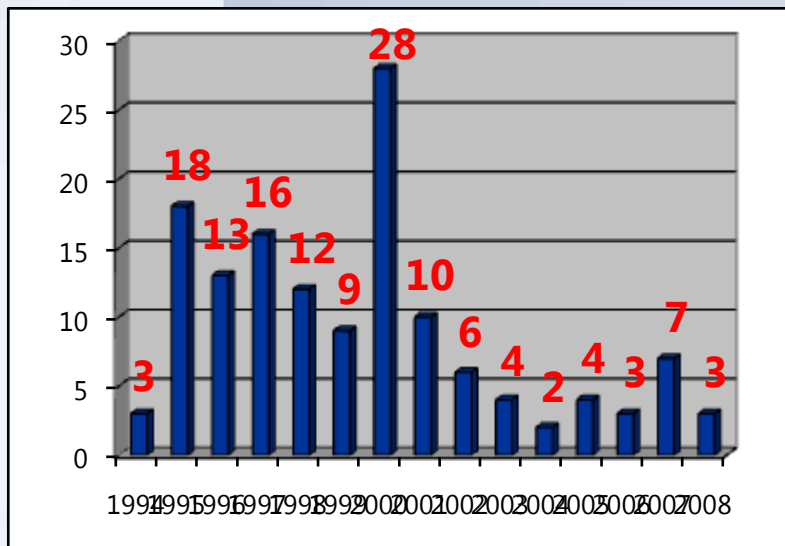
ESTT

*Entrepreneurial Separation
to Transfer Technology*

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



ESTT Success Stories



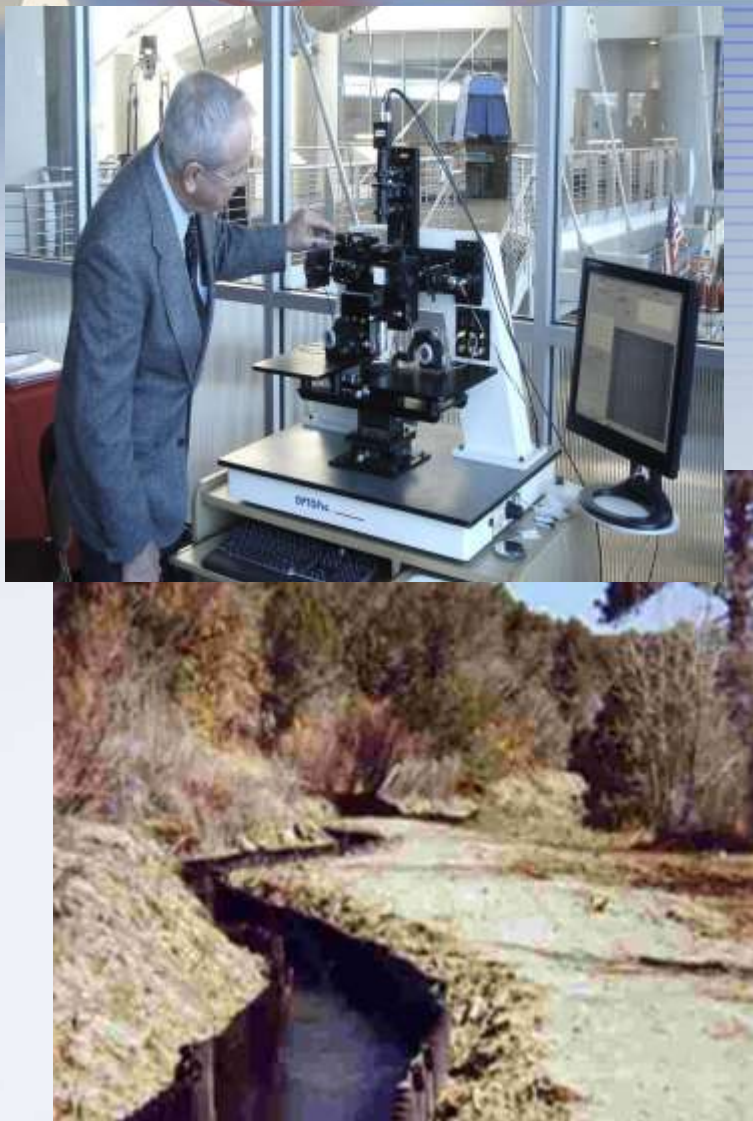
Wavefront Sciences

- 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

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 still pays more than \$54M in Gross Receipts Tax

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 desalinize produced water from coal bed methane mining
- Reduced cost of water treatment and transportation

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”

SS&TP Public/Private Partnership

ORIGINAL PARTNERS

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

LAND OWNERS

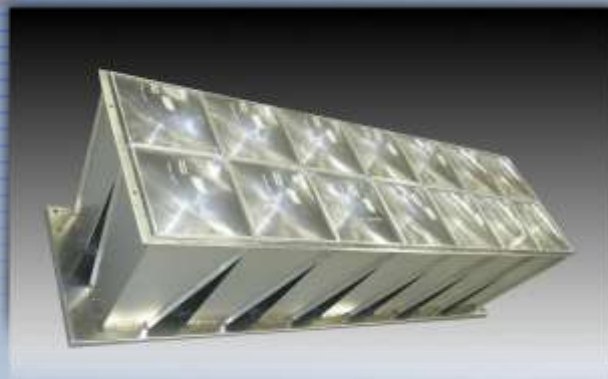
- Albuquerque Public Schools
- BUILD New Mexico/Union Development Corporation*
- New Mexico State Land Office

*Private organizations

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

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