



Building Enduring Partnerships: Universities and Laboratories

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**Wendy R. Cieslak, Ph.D.
Sandia National Laboratories
Albuquerque, New Mexico**



Begin with a Partnerships Strategy

Our strategy is to establish enduring partnerships with a focused set of universities to nurture talent, collaborative research, and national advocacy.

Recruit, retain and develop the best and brightest



Conduct collaborative world-class R&D to support mission needs

Build two-way relationships of mutual benefit and advocacy

Corporate investments in research, recruiting, and education are aligned with the focused set of partner universities.



Sandia National Laboratories



Establish criteria to guide your choice of partners

Academic Quality -



Nationally recognized rankings by discipline relevant to Sandia; competitive awards; publications.



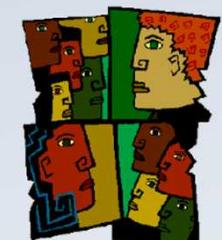
Research Investment -

Dollar amount of Sandia research contracts, FY03-FY05 inclusive.



Talent Capture -

Number of hires (FY03-FY05) in top hire fields.



Diversity -

Number of degrees awarded to members of under-represented groups.

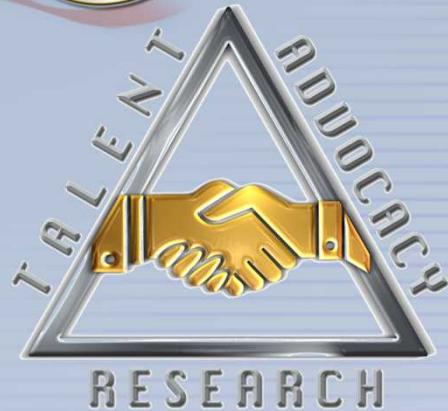




Look at the whole picture

Campus Executive Universities





Develop an action plan for each partnership

The Campus Executive is responsible to:

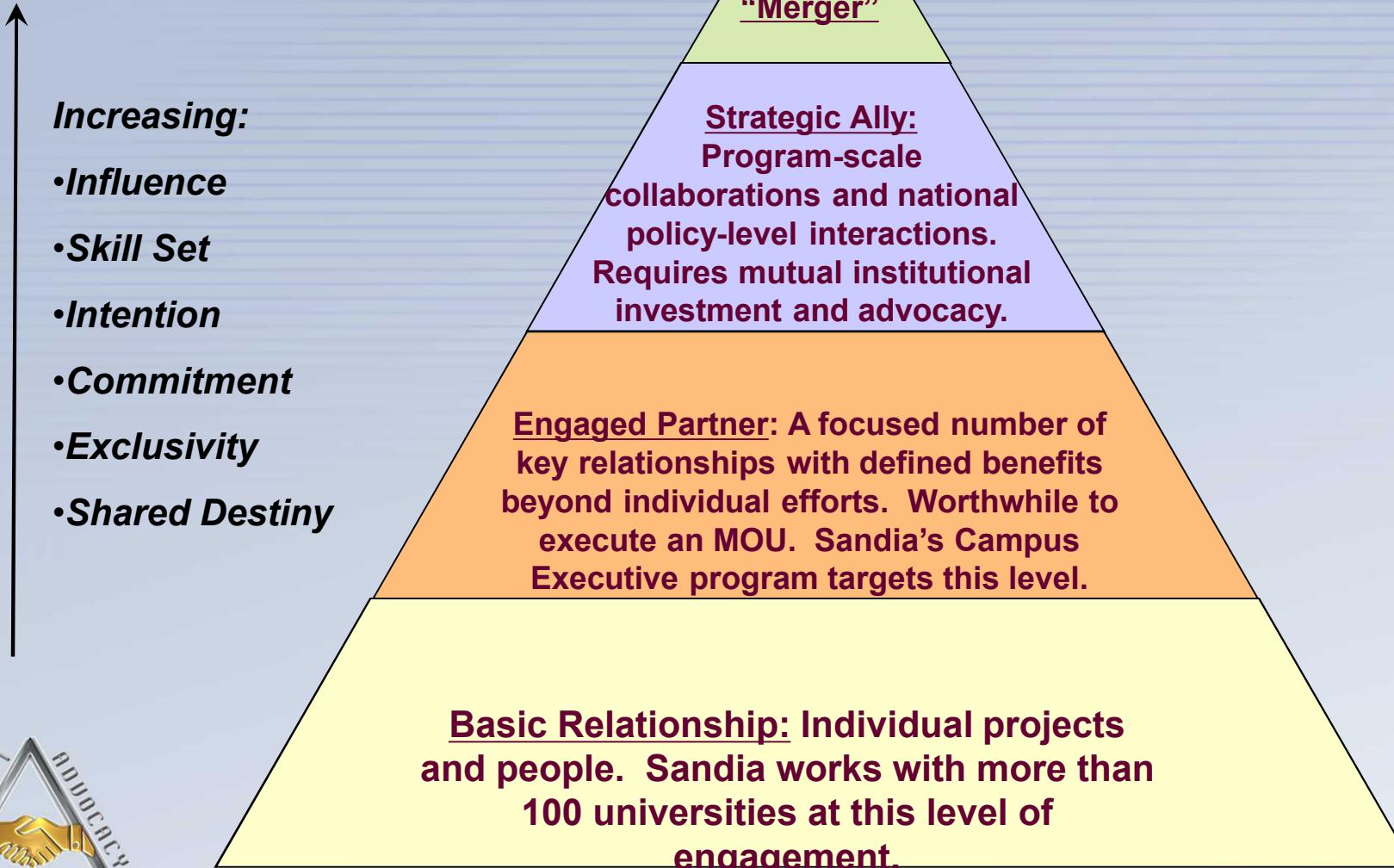
- Consider the interdependency of all three areas and align when making decisions about talent, research, and building partnerships.
- Nurture a forward-looking theme area in collaboration with each school.
- Encourage and offer incentives for activities with the partner university.
- Implement a tailored approach based on the specific needs of Sandia and the partner university.



Relationship-building across multiple levels in both institutions is critical to success in building the partnership.



Strength of partnerships may be depicted in a tiered model



Increasing:

- **Influence**
- **Skill Set**
- **Intention**
- **Commitment**
- **Exclusivity**
- **Shared Destiny**

“Merger”

Strategic Ally:
Program-scale
collaborations and national
policy-level interactions.
Requires mutual institutional
investment and advocacy.

Engaged Partner: A focused number of
key relationships with defined benefits
beyond individual efforts. Worthwhile to
execute an MOU. Sandia's Campus
Executive program targets this level.

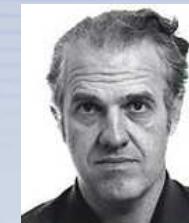
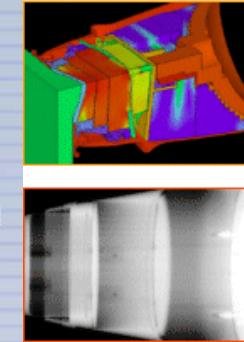
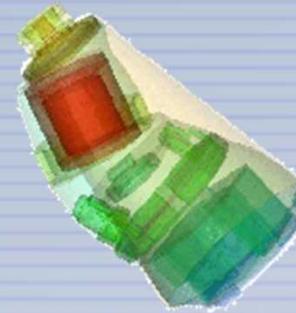
Basic Relationship: Individual projects
and people. Sandia works with more than
100 universities at this level of
engagement.





Partnerships are built upon interactions: Faculty

- **Collaborative research**
 - ~ \$30M annually
 - Mission related
- **Sabbaticals and summer research appointments**
 - ~ 20 appointments annually
 - 4 weeks to full year
- **PECASE** (President's Early Career Award for Scientists & Engineers)
 - \$250K award
 - New faculty with prior lab relationship
 - Currently 6 awardees





Partnerships are built upon interactions: Students

- Graduate Fellowships
 - ~ 80 annually: OYOC, SMP, DSP, GEM, NPSC, LRD
- Internships & Co-ops
 - ~ 800 technical interns annually
 - Year-round (semester/quarter) or summer
 - Annual Symposium
 - Critical Skills Institutes (next slide)
- Post Doctoral appointments
 - ~ 140 on role
 - 1-3 year appointments
 - 2-3 Truman Fellows annually





Critical Skills Development Program (NNSA/RTBF)

- **Four broad Institutes established in FY07**
 - Cyber Security
 - Extreme Environments
 - Enabling Predictive Simulation
 - Nuclear Weapon Surety
- **Engages both Sandia's CA and NM sites**
- **Minimum line match = 1:1**
- **67 students from ~35 universities**
- **Average GPA = 3.8**





A Success Story

Claudia Arias

- Attending Rice University on Fellowship
(Fall 2007 - Ph.D. Program in Mechanical Engineering and Materials Science)
- Sandia Senior Capstone projects at UTEP
 - “Validation and verification study of a bolted lap joint: quasi-static analysis” 2004-2005
 - “Validation and verification study of a bolted structure: modal analysis” 2005-2006
- Internships at Sandia National Laboratories
 - Running models on massive parallel supercomputing platforms
(Summers 2006 & 2007)





We are conducting a Senior Capstone Project with Howard University

- Academic Years 2006-2008
- Prof. Emmanuel Glakpe, Howard Mechanical Engineering Department
- Tim O'Hern, Sandia Engineering Sciences Center
- Project Goal: Fully characterize the shape, concentration, and velocity of a falling particle curtain, perform multiphase computational fluid dynamics simulations of such flows, and compare the results.
- Project team meets weekly by videoconference/teleconference





Develop a model and the tools to support it

- Graduate Fellowships
- Internships and Co-ops
 - Critical Skills Institutes
- Post Doctoral Appointments



- Informing national policy
- Building relationships at multiple levels
- Leadership Outreach Committees

- Collaborative Research
- Sabbaticals and Summer Appointments
- PECASE
- Capstone Projects



Education programs will go live on Sandia's homepage (www.sandia.gov) this week

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