



Study of the Sustainability of Graduated NSF ERCs

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Survey Objective and Table of Contents

Evaluate the post-graduate experiences of mature ERCs and their transition to self-sufficiency

- **Success in achieving sustainability**
- **Factors that contributed to their ability to continue as cross-disciplinary centers**
- **Impact of loss of NSF funding**
- **Perception of NSF's role during transition**



ERC Survey Response

- **Over 70% response rate**
- **65% of current directors also director at graduation**
- **Substantial length of ERC involvement**
- **Responders were from all four ERC technology clusters**

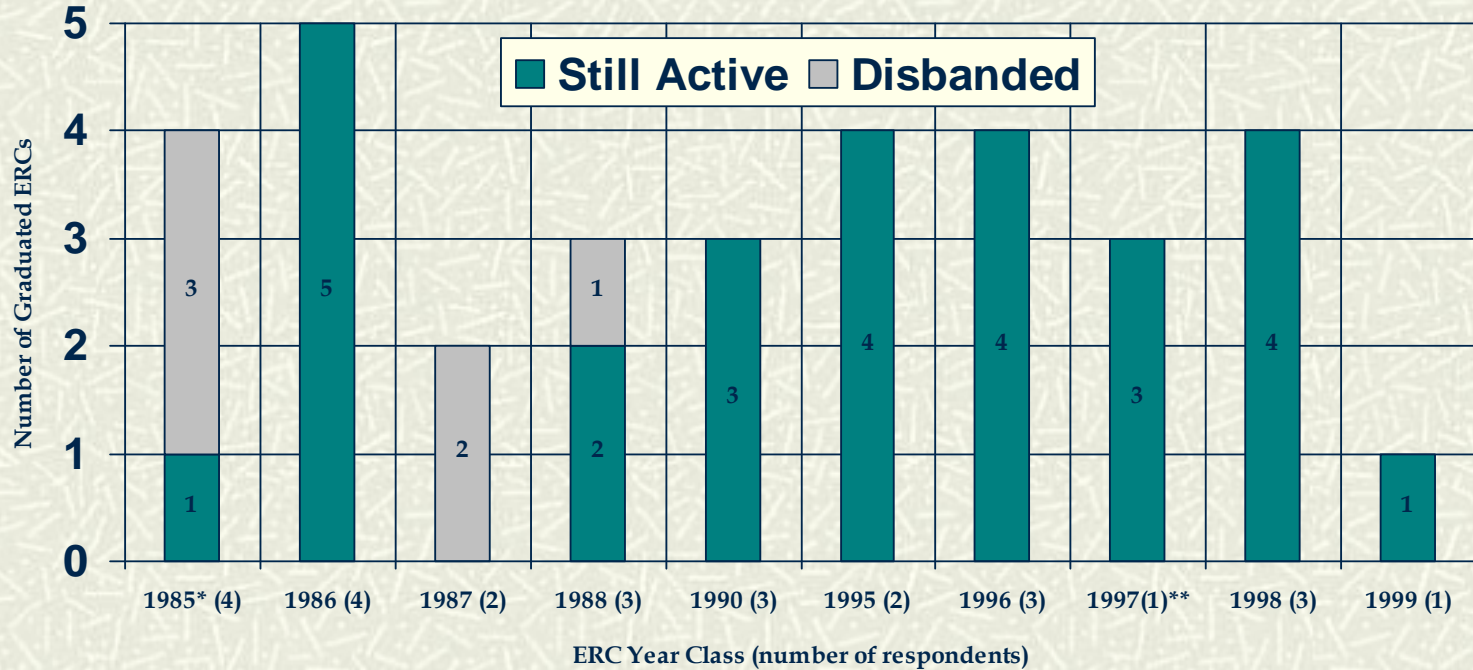


Self-Sustaining Graduated ERCs

Currently Self-Sustaining: 27 out of 33=82%

Range of current funding for responding Centers in each year

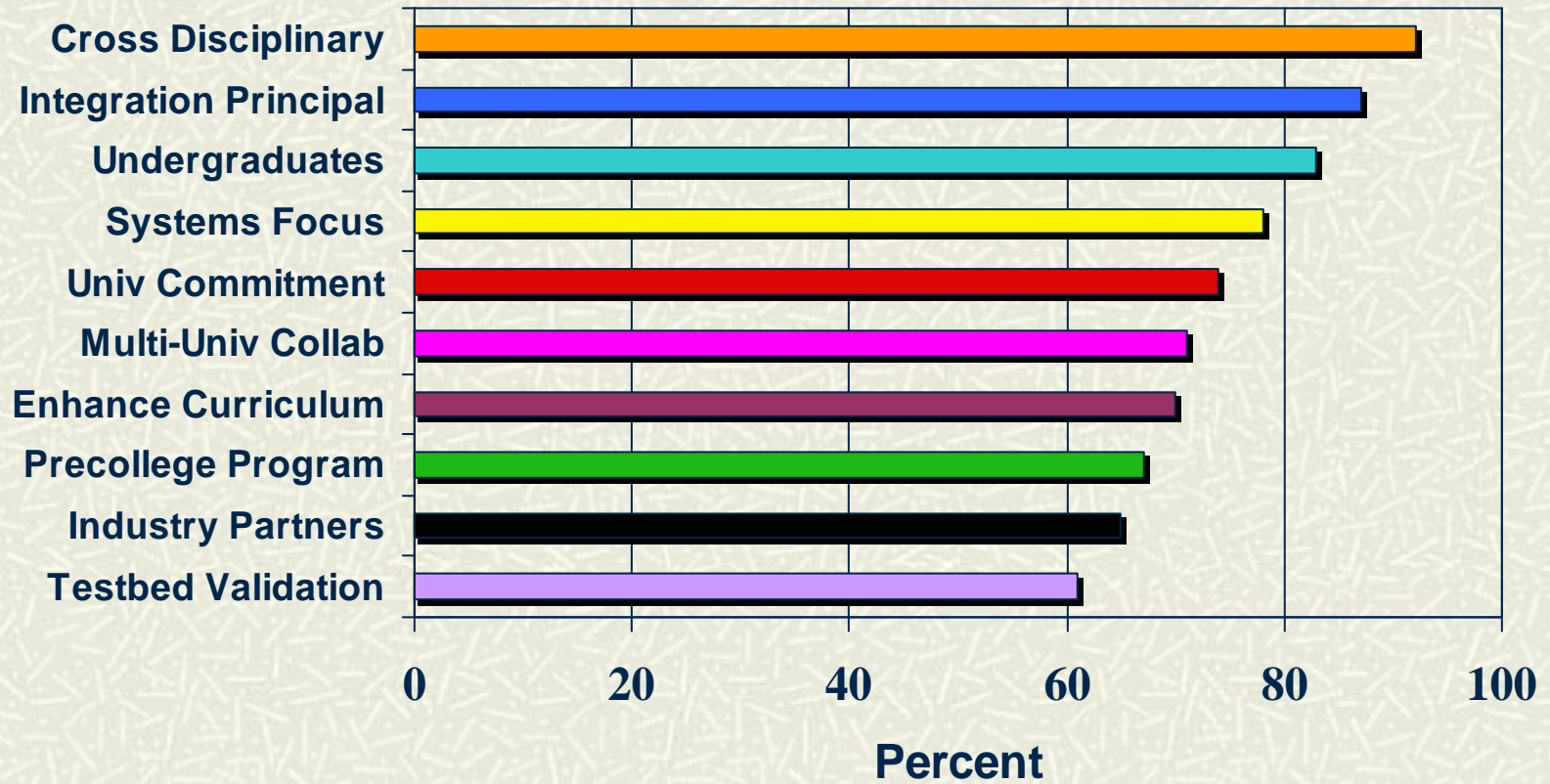
\$9.0-14M \$0.5-8.0M \$0M \$1.4-2.5M \$5.0-50M \$2.0-5.0M \$1.7-4.0M \$2.5M \$0.7-5.3M \$0.3M



****Four Centers graduated. One remains active; four (4) responded to the survey.**

****Three Earthquake Engineering Research Centers were funded in 1997 with funds outside of the ERC Program but were managed by the ERC Program from 1999 through their graduation from NSF support.**

Key ERC Characteristics Still in Place



ERC Transition Strategies

- **65% continue as an “ERC”**
 - Broaden funding sources
 - More aggressive in submitting proposals
 - Downside---increased short-term, applied research and more time spent pursuing funding
- **35% continue as something other than “ERC”**
 - Merge with larger group on campus
 - Broader, more diversified in new areas
 - Downside---not always building on inherent strengths



Factors Affecting Successful Transition

- **Broad involvement in transition planning**
- **Effective implementation of a realistic strategy**
- **Institutional factors---degree of university commitment**
- **Valued education program**
- **Commitment of core group of faculty**
- **Active industrial support**
- **Quality of leadership**



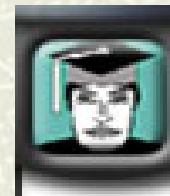
Impacts of Loss of NSF Funding

- **Downsized and reduced programs/staffing**
- **Effects uneven across center**
- **Fundamental research, infrastructure, undergraduate education and outreach vulnerable**
- **Loss of NSF imprimatur**
- **Reduced team-based engineered system focus**
- **Fewer industrial members**
- **Inconsistent impact on education program**



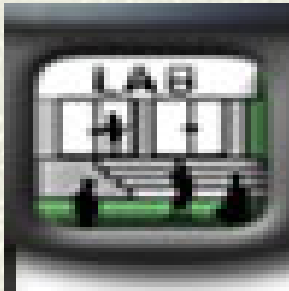
Funding and Staff Changes Due to Loss of NSF Funding

- **80% experienced reduced funding**
- **Wide funding variation from center to center**
- **57% eliminated education director and 31% industrial liaison officer**
- **Integrated administration and financial management**
- **62% reduced number of faculty, 57% graduate students and 70% undergraduates**



Education Changes Due to Loss of NSF Funding

- **Successful degree programs with reduced enrollment**
- **Planned to reduce/discontinue outreach programs**
- **Mixed results for centers that continued outreach**
- **50% discontinued minority recruiting programs**
- **Student collaboration with industry increased**



Perceptions of NSF's Role

- **Self-sufficiency assumptions overly optimistic**
- **10 year period sufficient**
- **ERC culture extremely helpful in strengthening center**
- **Cross-disciplinary systems gave competitive edge**
- **Praised NSF's assistance in managing transition**
- **Recommended flexibility in ERC life span and funding**



Was Being an ERC Worth it All?

- **100% of graduated centers said “Yes”**
- **Benefits:**
 - Early development of leadership
 - Positive cultural impact on academic field and industry
- **Best aspects:**
 - NSF prestige and opportunities for collaboration
 - Cross-disciplinary culture and systems approach
- **Worst aspects:**
 - Dealing with department processes and politics
 - Burdensome reporting and changing guidelines



Life as a Post-graduate Center

- **Best aspects:**

- Continued vigor for interdisciplinary efforts
- Seeing technology make marketplace impact

- **Worst aspects:**

- Having to constantly justify center internally
- No NSF funds or prestige to leverage
- Difficulty in maintaining industrial members
- Absence of NSF attention and help



Conclusions

- **Weathered the loss of NSF funding fairly well**
- **Downsized and eliminated programs/infrastructure**
- **Adjusted to funding changes; increased short-term focus**
- **Basic science, staff, undergraduate, outreach vulnerable**
- **Appreciated value of being an ERC**
- **NSF helpful in managing transition process**
- **Suggested flexibility in ERC funding/life span**