Supplementary Analyses: Member Turnover and Dwell Time

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Goals

• Obtain a better understanding of the factors that might be affecting turnover of IUCRC members
  – Aggregate Statistics

• Obtain a better understanding of the factors that affect “dwell time” or the continuous maintenance of IUCRC membership
  – Individual Member Statistics
Average Membership Turn Over

NEW CENTERS EXCLUDED

Lines crossing = usually means recession!

2012 Leaving rate: 20.3%
  Small = 24.83%
  Federal = 20.63%
  Large = 17.87%
  State = 7.14%
  Other = 6.67%

*Newly funded Centers’ members are not counted as Members Added
FY2011-2012 NSF-I/UCRC Center Structure Database
Member Turnover Rate

Turnover % = Members terminated in year X+1 / Total members in year X

January, 2013

NSF-I/UCRC Center Structure Database

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Member Turnover Rate – New Normal

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Working Hypotheses:
- National recessions
- 1990s vs. 2000s
- Mode of operation: project vs. consortial
- Small/SBIR

Turnover Percent
- Project-Based
- Consortial
Dwell Time Analyses
Method

Sampling & Time Period
• Centers that started between 1992 and 2001 and that had at least 9 years of NSF support (collection of data)
• Members of these centers between 1992 and 2011

Procedure
• Combine data from archival membership database (1992-2006) and the latest membership data from 2007-2011
• Assign an individual numeric code for each member
• Calculate consecutive years of membership
• Classify members into 7 categories:
  1. Large Industry (>500 employees)
  2. Small Industry (<500 employees)
  3. Government (non-US)
  4. Government (US Federal)
  5. Government (US State/Local)
  6. Non-Profit
  7. Other Organization [unidentified organizations]
Results

Descriptive

Total 2121 individual memberships were identified from which:

- Large Industry – 55%
- Small Industry – 14%
- Government (U.S. Federal) – 10%
- Government (U.S. State/Local) – 2%
- Government (non-US) – 1%
- Non-Profit – 4%
- Other Organization – 14%

Average of the consecutive years companies maintained their membership at I/UCRCs is 3.74
Member dwell time

Percent of organizations maintaining an I/UCRC membership for X number of years (Mean dwell time = 3.8)
Dwell Time (Every Other Year) by Member Starting Year (corrected for “5” in 1995)

Membership Dwell Time of groups of companies from beginning years between 1993-2008 (every other year)

- Colors: Blue (3), Red (5), Green (7), Purple (>7)

IUCRC Evaluation Project
Members by percentage of possible dwell time

Dwell time % = Total N of years as a member / Total possible N of years as a member

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NSF-I/UCRC Center Structure Database
Limitations

• Missing years in membership data – imputed data
• Maddening variations in member names to reconcile
• Sample issues: exclude centers with less than 9 years data
• Different start and end years of the NSF funding that determines data collection by the NC State evaluation team
• Disaggregated analyses (by type of member and center) still remains!
Conclusions: Turnover

• Member turnover is becoming an increasingly big challenge for IUCRCs
  – Longitudinal data on membership turnover shows increased percentage of members leaving in recent years

• Possible explanations are:
  – Internal:
    • Increasing percentage of Small Businesses leaving after receiving the SBIR support and not being able to sustain membership independently
    • More Centers opting for a project-based mode of operation
  – External:
    • Globalization or development of communication technologies create more alternatives for companies.
    • Periodic recessions making memberships unstable
Conclusions: Dwell Rate

- Multiple indicator strategy for dwell rate
  - Percentage maintaining membership steadily declines over time
  - Average Dwell Rate = 3.8 years
  - Average member stays 32% of possible years
  - No discernible pattern by year members started membership (1993-2008)

- More detailed research needs to be done to identify increased turnover rate of the members using more precise classification of the members and centers