



# Highlights of Membership Data FY 2016-2017

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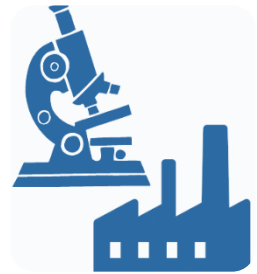
# Membership Report Data

- 2016-2017 Data
  - Type of members
  - Multiple center members
- Membership Trends Over Time
  - Overview of factors affecting Membership
    - Total membership trends
      - By member type
    - Net Gain/Loss
    - Turnover

# Take Home Message

- Tracking “membership” is important because it may be the most important measure of success for centers and the IUCRC program
- But...
  - We need to be very careful in interpreting changes in membership overtime

# FY17 Member Fast Facts



1214 Memberships  
190 new and 206 terminated memberships



\$53M Provided by Members  
58% of total IUCRC program funding



~17 Members per Center



Membership fee leveraging  
ratio 1:33



# Membership Summary

	<b>Count</b>	<b>Percent</b>
<b>Total memberships</b>	<i>1214</i>	<i>100%</i>
Industry: large firms (500 + employees)	629	52%
Industry: small firms (< 500 employees)	324	27%
US Government: Federal	144	12%
US Government: State or local	50	4%
Other	67	5%
<b># of organizations with memberships<sup>1</sup></b>	<b>798</b>	<b>--</b>

1. Many firms and agencies maintain more than 1 membership in the I/UCRC program. This count considers a firm or agency with multiple memberships as a single member. For example, the Army holds 20 memberships but is considered a single organization in this count.



# Unique Members and Total Memberships Over Time



# Membership: Organizations with the Most Memberships

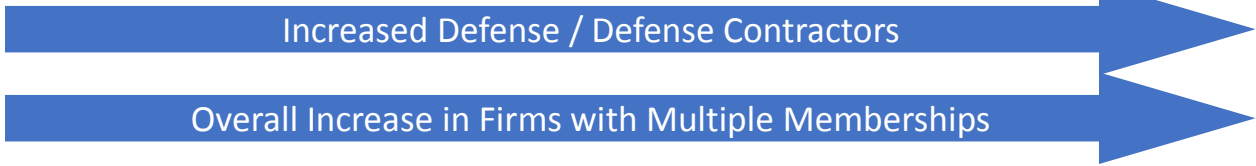
N Memberships	Organizations
23	Army
20	Air Force, NASA
15	DoE, Raytheon
13	Intel Corporation
12	DoD, Lockheed Martin
10	Huawei, Navy
8	Cisco Systems Inc, Corning Inc., DHS, Honda,
7	ERPI, IBM, NSA, Samsung, *Weyerhaeuser
5-6	*Boeing, Ford Motor Company, *Hancock Forest Management, Hewlett-Packard, *Merck, Northrop Grumman, QualComm, Bayer, *Campbell Global, *Dell, DuPont, *L3, *Rayonier, *Toyota

- Since 2016, a significant increase in N of organizations with 5+ memberships from 27 to 33 organizations!
- 24% of All memberships from these organizations
- \*New to this list

# Organizations with the Most Memberships Over Time

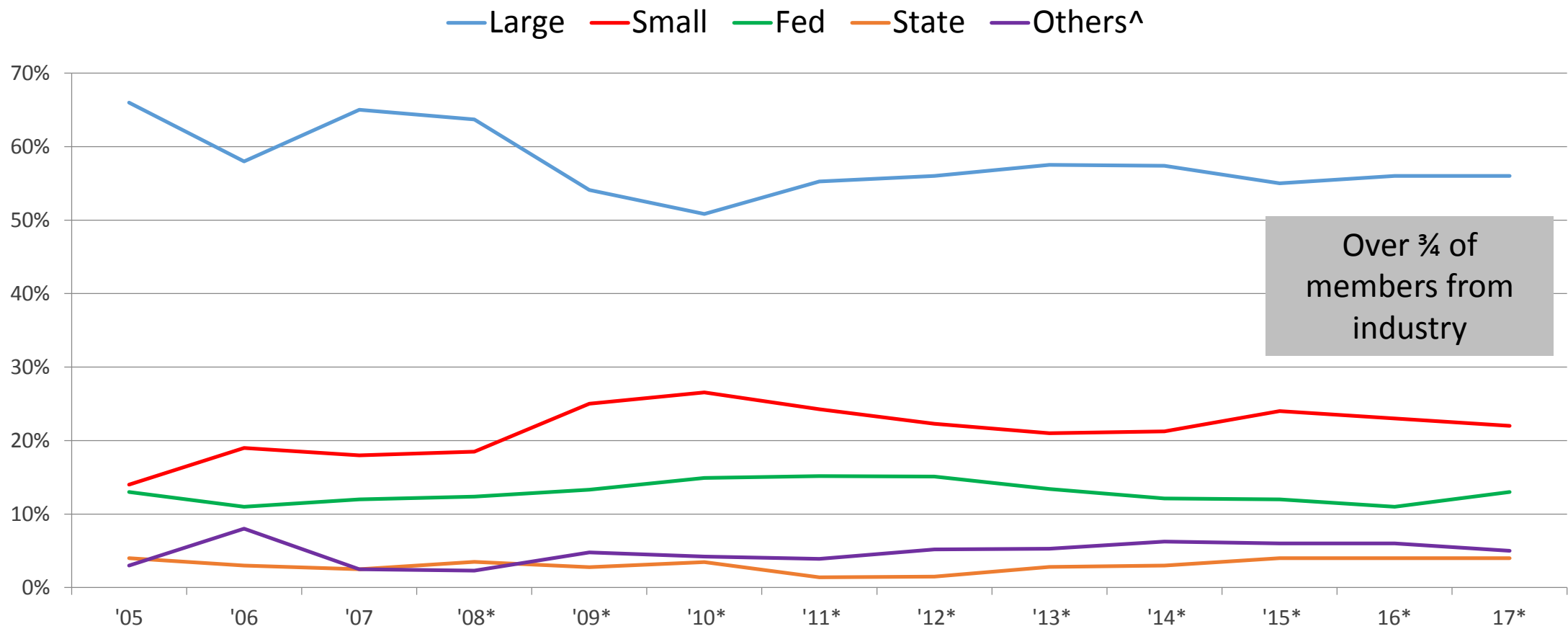


1995		2000		2005		2010		2017	
N	Name	N	Name	N	Name	N	Name	N	Name
10	Dow Chem.	10	Motorola	17	DoE	26	<b>Army</b>	23	<b>Army</b>
9	DuPont	9	<b>Army</b>	13	<b>Army</b>	18	DoE	20	<b>Air Force, NASA</b>
8	3M, Motorola, Ford	8	Lucent Tech., DoE	10	<b>Boeing</b>	15	<b>Lockheed Martin</b>	15	DoE, <b>Raytheon</b>
7	GM	7	<b>Boeing, IBM, Honeywell</b>	8	Intel, <b>Air Force</b>	13	<b>Boeing, NASA</b>	13	Intel
6	Amoco, <b>Boeing</b> , Texas Inst.	6	Daimler Chrysler	7	<b>Raytheon, HRL, DoD</b>	11	<b>Air Force</b>	12	<b>DoD, Lockheed Martin</b>
		5	Ford	6	<b>Honeywell, Navy</b>	10	GM, IBM	10	Huawei, <b>Navy</b>
				5	Dow Chem., Siemens	7	Intel, <b>Raytheon</b>	8	Cisco, Corning, <b>DHS</b> , Honda
						5	<b>DoD, Navy</b>	7	ERPI, IBM, <b>NSA</b> , Samsung, Weyerhaeuser
								5-6	<b>Boeing</b> , Ford Motor Company, Hancock Forest Management, Hewlett-Packard, Merck, <b>Northrop Grumman</b> , Qualcomm, Bayer, Campbell Global, Dell, DuPont, <b>L3</b> , Rayonier, Toyota
Dropped		<i>Dow Chem., DuPont, 3M, GM, Amoco, Texas Inst., EPA, Navy</i>		<i>Motorola, LucentTech., IBM, Daimler Chrysler, Ford</i>		<i>HRL, Honeywell, Dow Chem., Siemens</i>		<i>GM</i>	
New		<i>Lucent Tech., IBM, Honeywell, Daimler Chrysler, DoD</i>		<i>Intel, Air Force, Raytheon, HRL Labs, Dow Chem., Siemens, Navy</i>		<i>Lockheed Martin, NASA, GM, IBM</i>		<i>Huawei, Cisco, Corning, Honda, DHS, ERPI, NSA, Samsung, Weyerhaeuser, Ford, Hancock Forest Mgmt., HP, Merck, North.Grumm., Qualcomm, Bayer, DuPont, Campbell Global, Dell, L3, Rayonier, Toyota</i>	





# Member Composition 2005-2017\*



Over 3/4 of members from industry

\*Years Advanced Forestry excluded as a small business outlier: '08=36, '09=49, '10=57, '11=66, '12=71, '13=77, '14=86, '15=71, '16=70, '17 = 91.

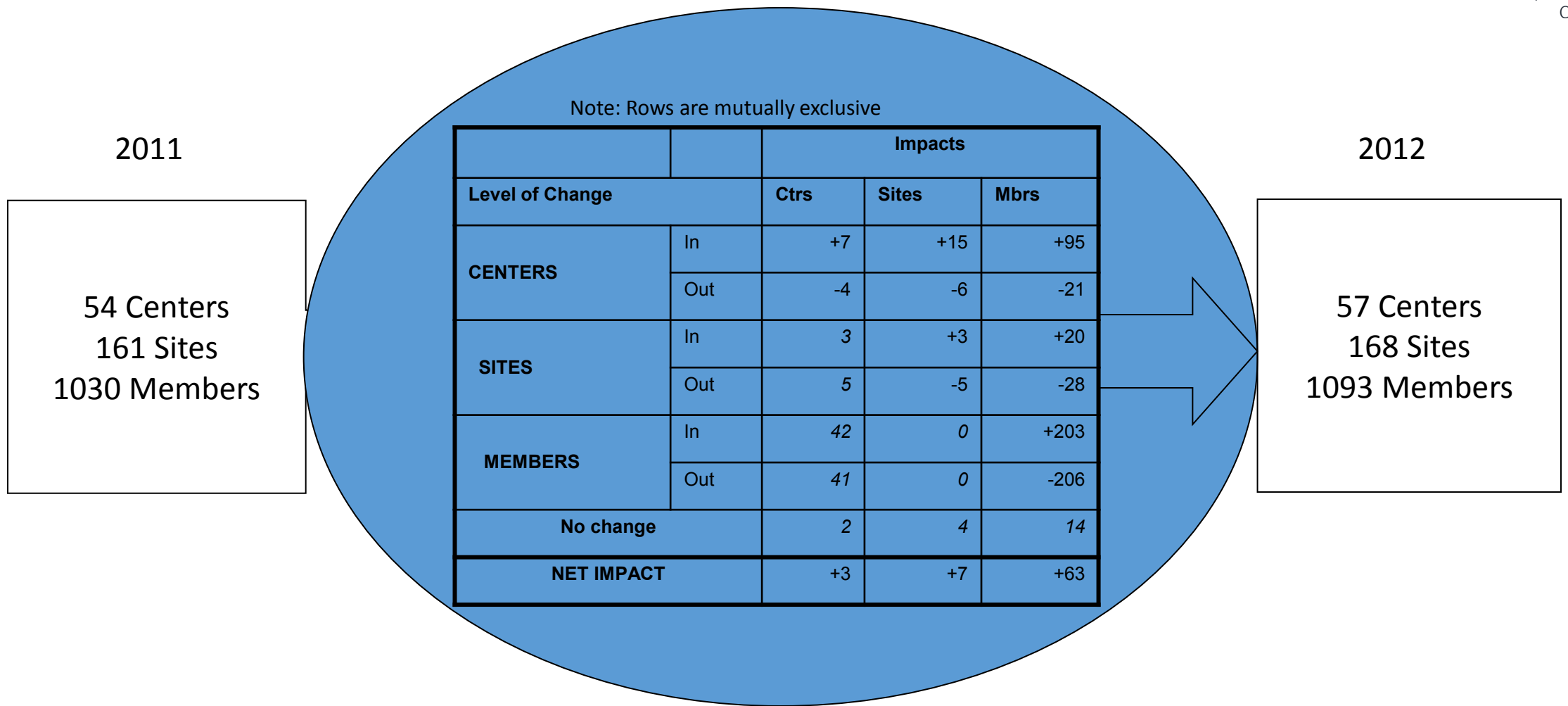
^ Categories comprising Others include: non-profit, non-US gov't, and other org.  
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# Interpreting Membership Changes Over Time

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- Changes in Membership numbers over time are influenced by changes at different levels:
  - Members: Individual members will leave a center and new members will be added
  - Centers: Mature centers will graduate (and their members will be dropped) and new centers will be created (and their members added)
  - Sites: New sites (and their members) are added to existing centers
- Changes in program totals and averages per center can be due to any combination of these factors

# Example: 2012 IUCRC System Changes



2011

54 Centers  
161 Sites  
1030 Members

2012

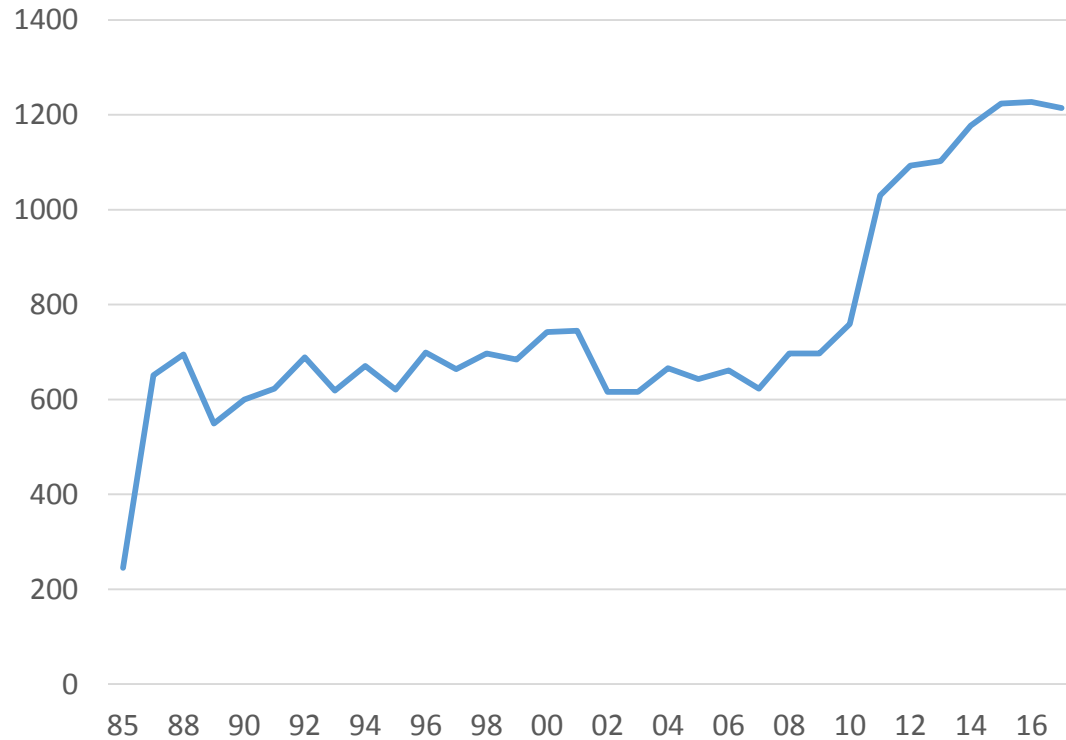
57 Centers  
168 Sites  
1093 Members

# Membership Turnover Variables and Indicators

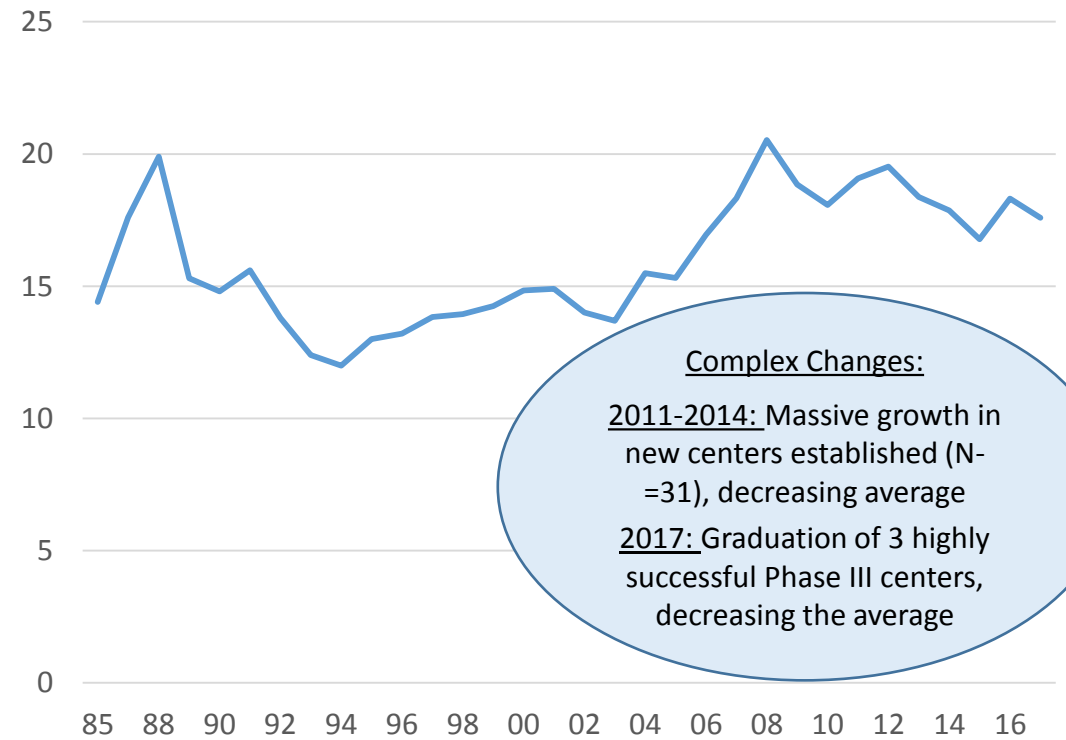
- **Members added:** number of members center reports adding during past year (may include new individual members or members from added site)
  - Does not include addition of new centers
- **Members left:** number of members a center reports leaving the center during past year (would only include site-level loss if site left center)
- **Member Net Gain/Loss:** the relative gain or loss of members (members added – members left) centers experience during each calendar year
- **Member Turnover:** percentage of a center's members from year  $x$  that leave the center the following year (year  $x + 1$ )
- **Aside:** Other membership indicators we've looked at:
  - Dwell time, turnover by center fidelity to IUCRC model, membership for single vs. multi-site centers, private vs public sector membership, fortune ranking of members, defense membership, phase based growth and retention, firms with multiple memberships, Chinese firm membership

# Total Members and Average Memberships per Center by Year

*Total Number of Memberships*

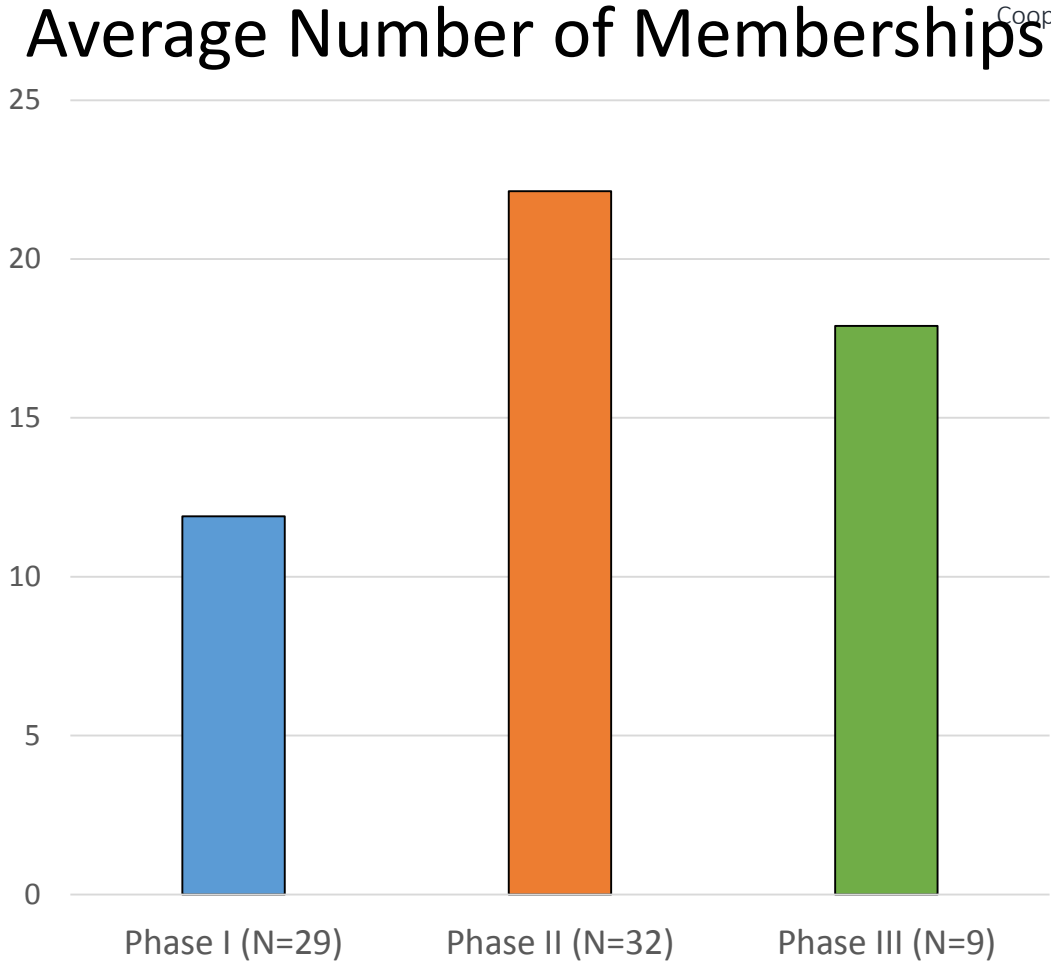
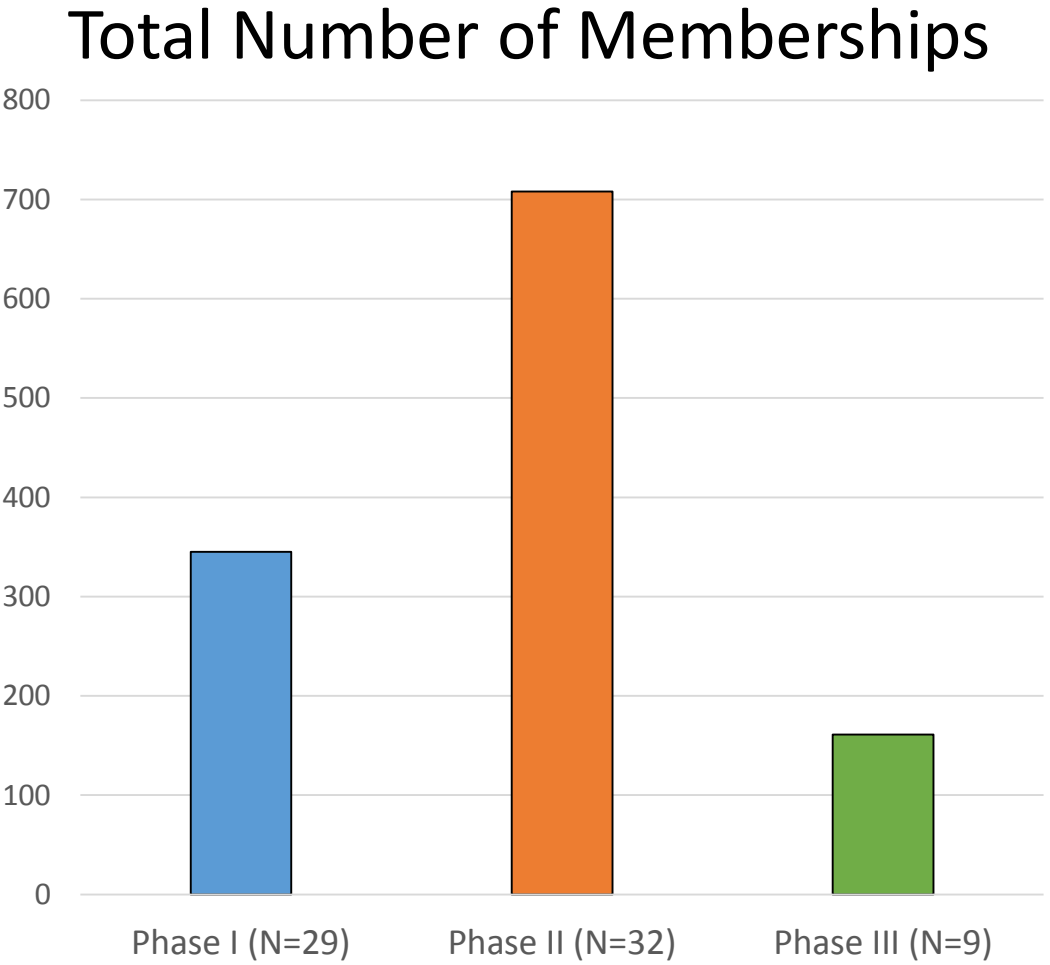


*Avg. Number of Memberships per Center*

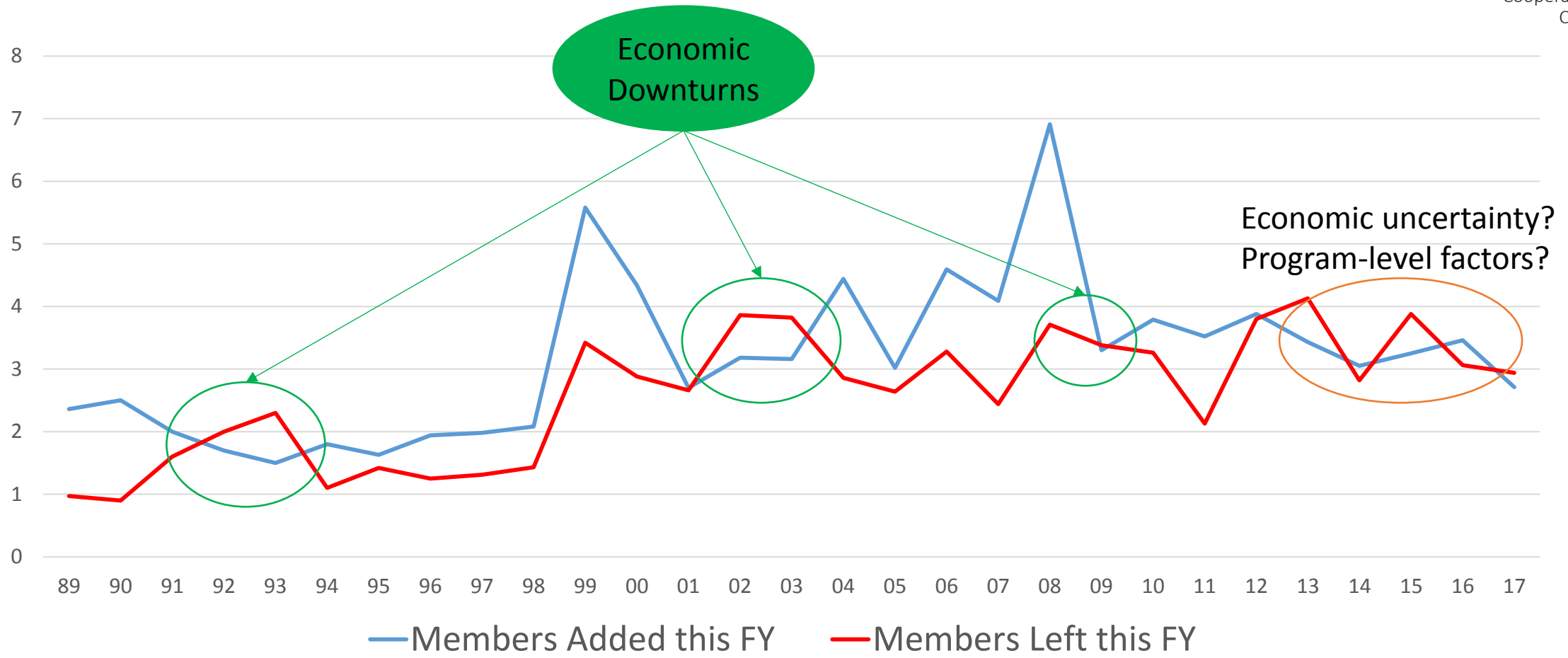


**Complex Changes:**  
2011-2014: Massive growth in new centers established (N=31), decreasing average  
2017: Graduation of 3 highly successful Phase III centers, decreasing the average

# Industrial Memberships by Center Phase

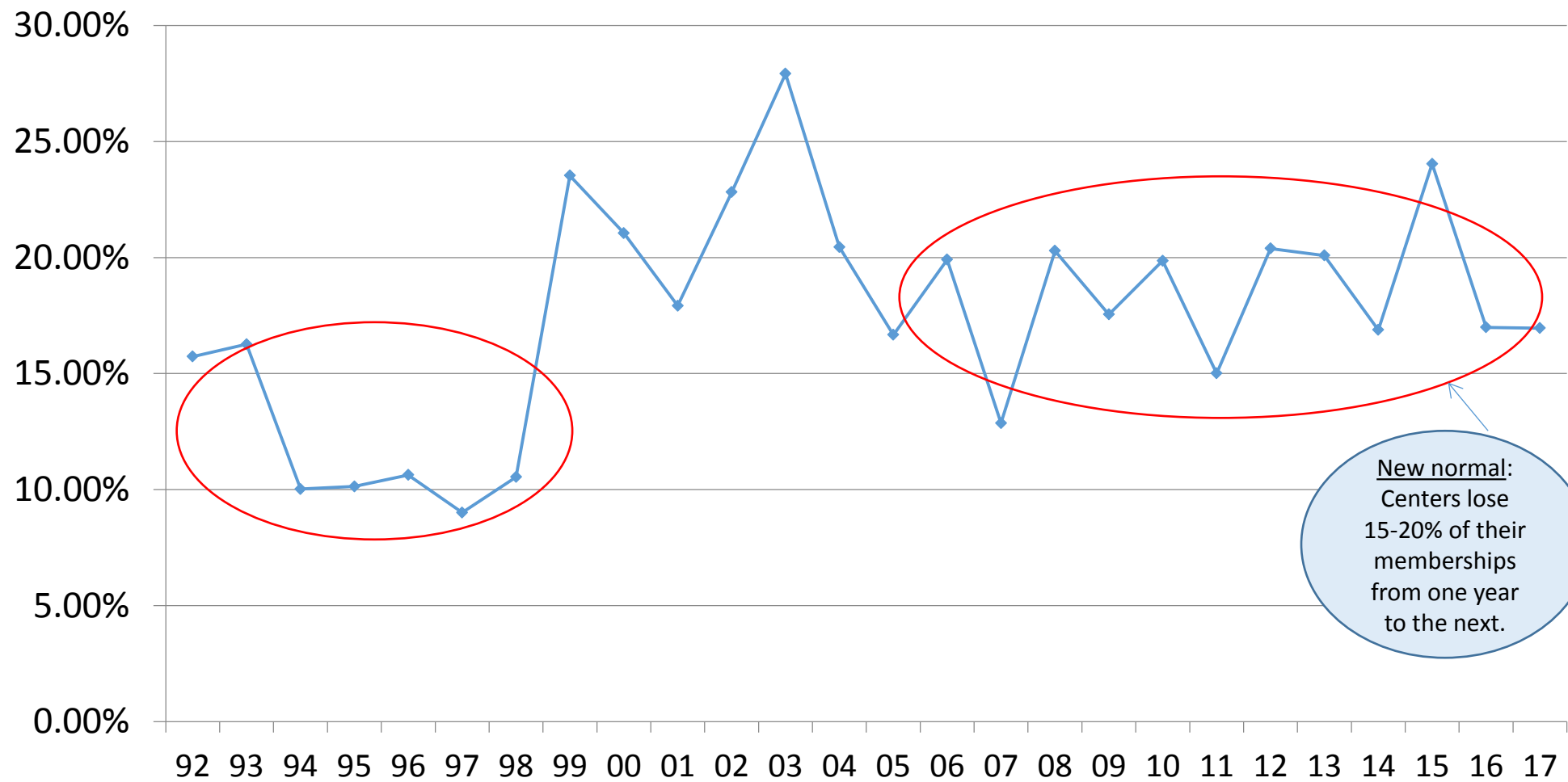


# Average Membership Gain/Loss





# Membership Turnover Rate



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

# Conclusions: Turnover

- **Membership growth and stability**
  - Average number of members has been relatively stable, decreasing slightly, over the last 5 years; ~18 members/center
    - Closer to ~15 members/center if you exclude Advanced Forestry as an outlier with 148 members
  - Member turnover rate is at a new normal of 15-20% over the last 10+ years
  - Significant increase in organizations with 5+ memberships
- **Membership is dynamic**
  - Program level picture positive based on continuous growth in new centers and sites
  - Most fluctuations attributable to initiation of Phase 3 funding opportunity and graduation of Phase 3 mega-centers
  - Membership picture is volatile
    - Causal factors are hard to pin down
    - Explanations may reside with center level variables like leadership, technology salience, as well as structural issues like the churn of old and new centers, site transitions, etc.
    - Useful both as a measure of overall program health and to benchmark center performance relative to program level norms