

PHYSICAL ACTIVITY RESEARCH: PORTFOLIO ANALYSIS

Physical Activity Workshop: How do we get more people moving more?

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National Institutes of Health



Office of Disease Prevention
National Institutes of Health

Purpose for PA Portfolio Analysis

3

- To provide a preliminary, high-level overview of NIH's physical activity funding portfolio

- To identify distribution of funding portfolio
 - ▣ Over time
 - ▣ Across ICs
 - ▣ Across different categories

PA Portfolio Analysis: Overview

4

- 1. Search with QVR (Query/View/Report)
- 2. Develop validation rubric
- 3. Manually sort and validate grants
- 4. Identify challenges and limitations to understand boundaries of the analysis
- 5. Analyze data

PA Portfolio Analysis: Step 1

5

- Search with QVR (Query, View, and Report)
 - ▣ Limited search to RCDC category “Prevention”
 - ▣ Searched FY2008-FY2011
 - ▣ Funded and Awarded NIH grants
 - ▣ Broad keyword search terms in title and abstracts of grant applications: “Exercise” or “Physical Activity”

Portfolio Analysis Process: Step 2

6

- Validation Rubric: Used titles and abstracts
 - Did not include: Animal studies, tertiary prevention, meditation
 - Did include:
 - If “physical activity” or “exercise” was mentioned in the title or abstract
 - if PA was measured or included in questionnaire
 - physical inactivity/sedentary behavior
 - Large trials or studies that incorporated PA (Look AHEAD, Mr. OS)
 - Did not group grants into further categories

Portfolio Analysis Process: Results

7

- After manual validation...

Fiscal Year	Number of entries	Valid entries	% Valid entries
2011	1285	787	61%
2010	1537	876	57%
2009	1617	932	58%
2008	1314	817	62%
2008-2011	5753	3412	59%

Challenges and Limitations

8

- RCDC coding: Computerized reporting process
- Tracking multi-year projects
- Does not accurately reflect budget
- Does not capture detailed information

Challenges and Limitations, pt. 2

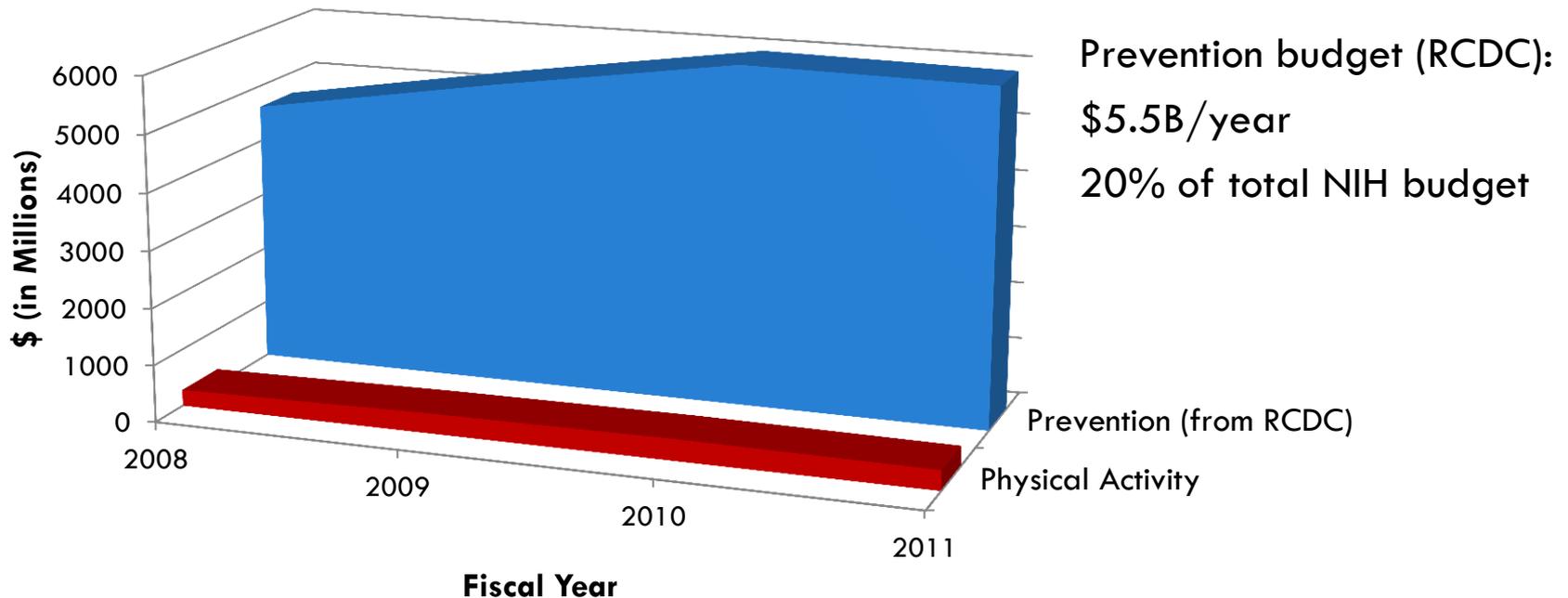
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- Implications for data analysis results:
 - ▣ Very rough overview of physical activity portfolio
 - ▣ Unknown sensitivity, high specificity
 - ▣ Qualitative rather than quantitative

Budget

10

NIH Prevention and Physical Activity Research Budget



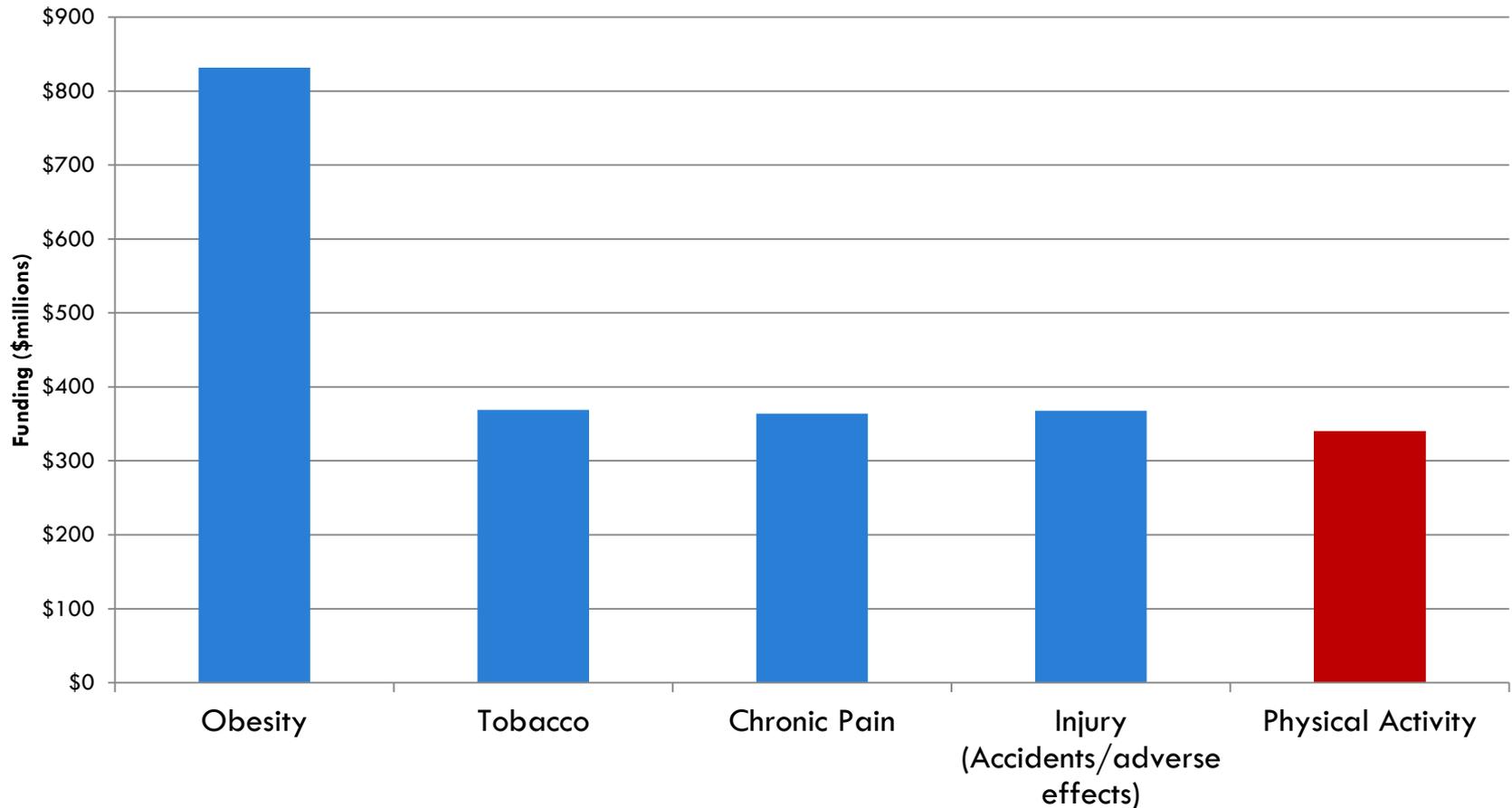
Prevention budget (RCDC):
\$5.5B/year
20% of total NIH budget

PA budget (on average): \$340M/year
6% of Prevention budget

PA Budget vs. RCDC Categories

11

Average Funding Per Year (FY2008-11)



Data Visualization Programs

12

- NIH Topic Maps: Cluster-based visualization using CSR Integrated Review Groups
- IN-SPIRE: Text-mining and data visualization tool
- NIH Portfolio Visualization Tool (Pviz)

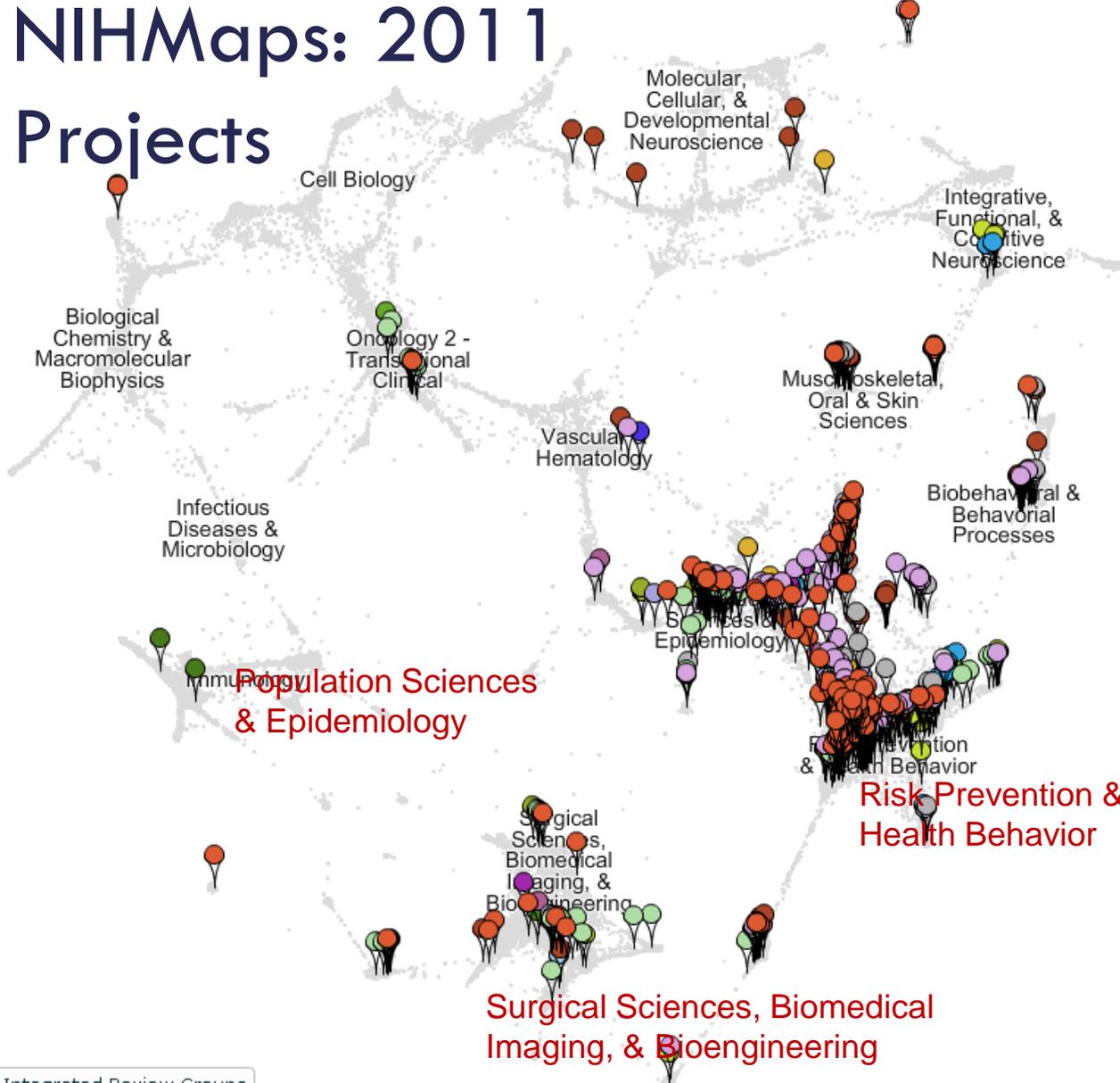
2011 ? add del 1 NIH Concept Keywords
 Hide Search add del 2 RCDC Categories

Physical activity
 Prevention

Search Advanced Clear Search Show Similar

NIHMaps: 2011 Projects

Map navigation controls: Home, Pan, Zoom In, Zoom Out, Full Screen, Share



Base Map Markers Topics

Markers

NIH Institute	# Grants
NIDDK	10
NHLBI	10
NCI	10
NICHD	10
NIA	10
NCMHD	10
NINR	10
NIAMS	10
NIMH	10
NIDA	10
NCRR	10
NIEHS	10
NINDS	10
NCCAM	10
NIGMS	10
NHGRI	10
NIAAA	10
FIC	10
NIAID	10
NEI	10
NIDCR	10
NLM	10
NIDCD	10

Grants (958)

NIH Inst	Grant
NINR	7R01NR011295-03 Culturally and Linguistically Adapted Physical Activity Intervention for Latinas PI: MARCU HYA
NIDDK	1R34DK090695-01 Reduce Risk of Diabetes: Healthy Lifestyle for Chinese Immigrants PI: WYLIE-ROSETT, J
NCI	4R01CA132941-03 School Worksite Gain Prevention Intervention Study PI: LEMON, STEPHENIE C. (contact): F LORI

Settings
 Markers
 Base Map
 Labels
 Default

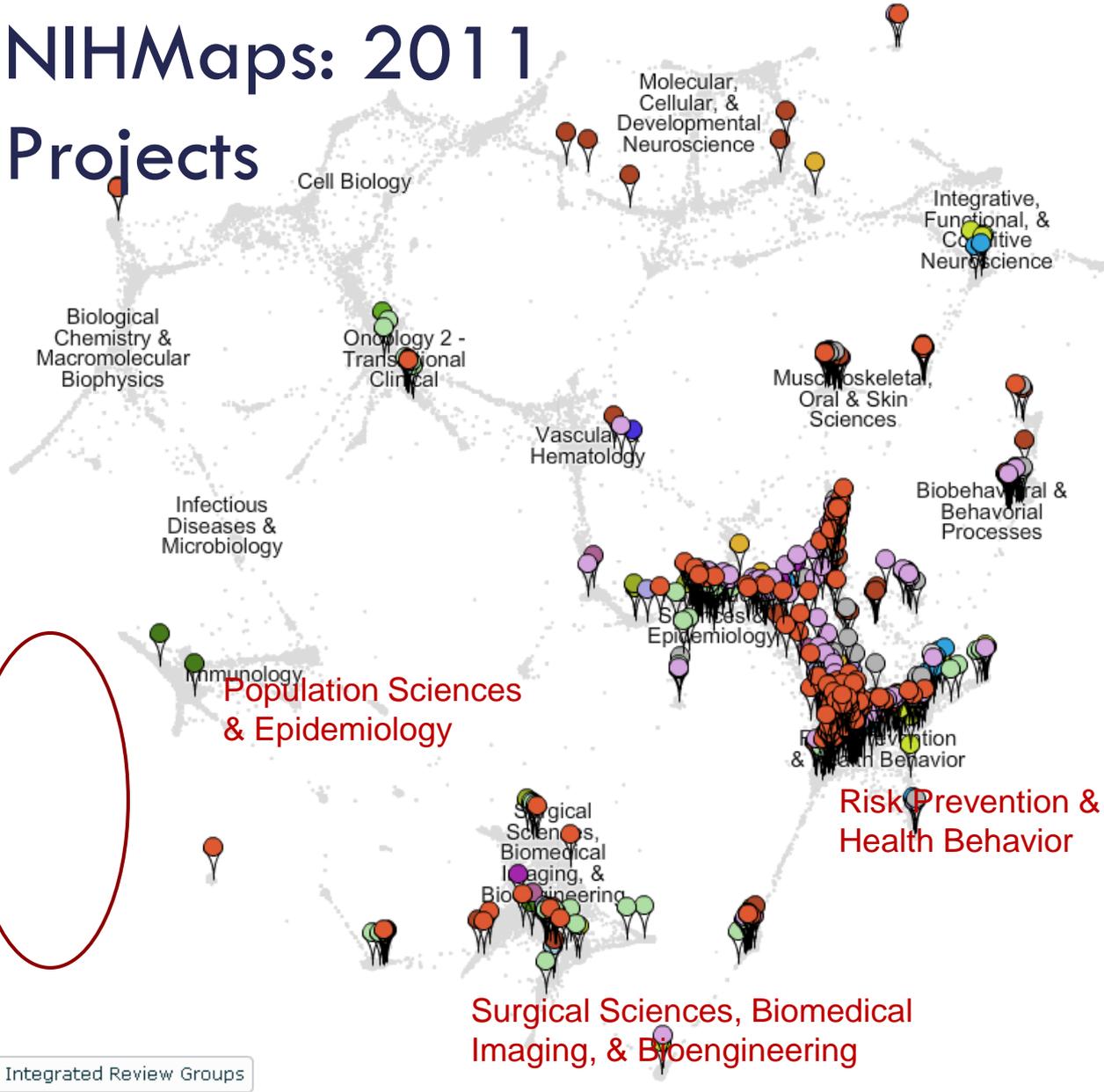
Labels: NIH Integrated Review Groups

NIHMaps: 2011 Projects

Map navigation controls: Home, Back, Forward, Refresh, Zoom In (+), Zoom Out (-), Pan, Share, Print, Location pin.

Settings: Markers, Base Map, Labels, Default

Labels: NIH Integrated Review Groups



Markers

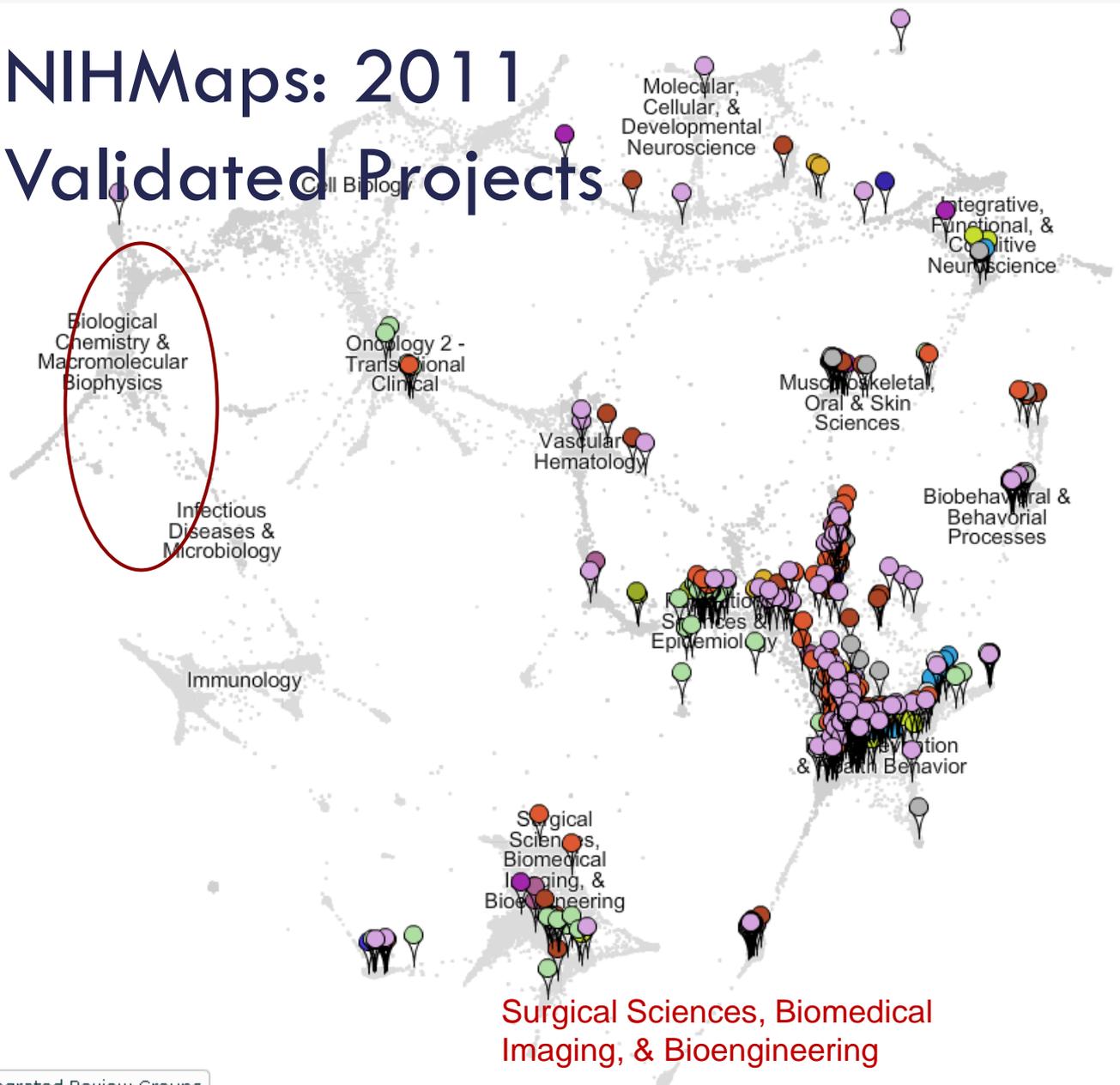
NIH Institute	# Grants
NIDDK	10
NHLBI	10
NCI	10
NICHD	10
NIA	10
NCMHD	10
NINR	10
NIAMS	10
NIMH	10
NIDA	10
NCRR	10
NIEHS	10
NINDS	10
NCCAM	10
NIGMS	10
NHGRI	10
NIAAA	10
FIC	10
NIAID	10
NEI	10
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NIHMaps: 2011 Validated Projects

Map navigation controls including zoom in (+), zoom out (-), pan, and a search icon.



Base Map Markers Topics G

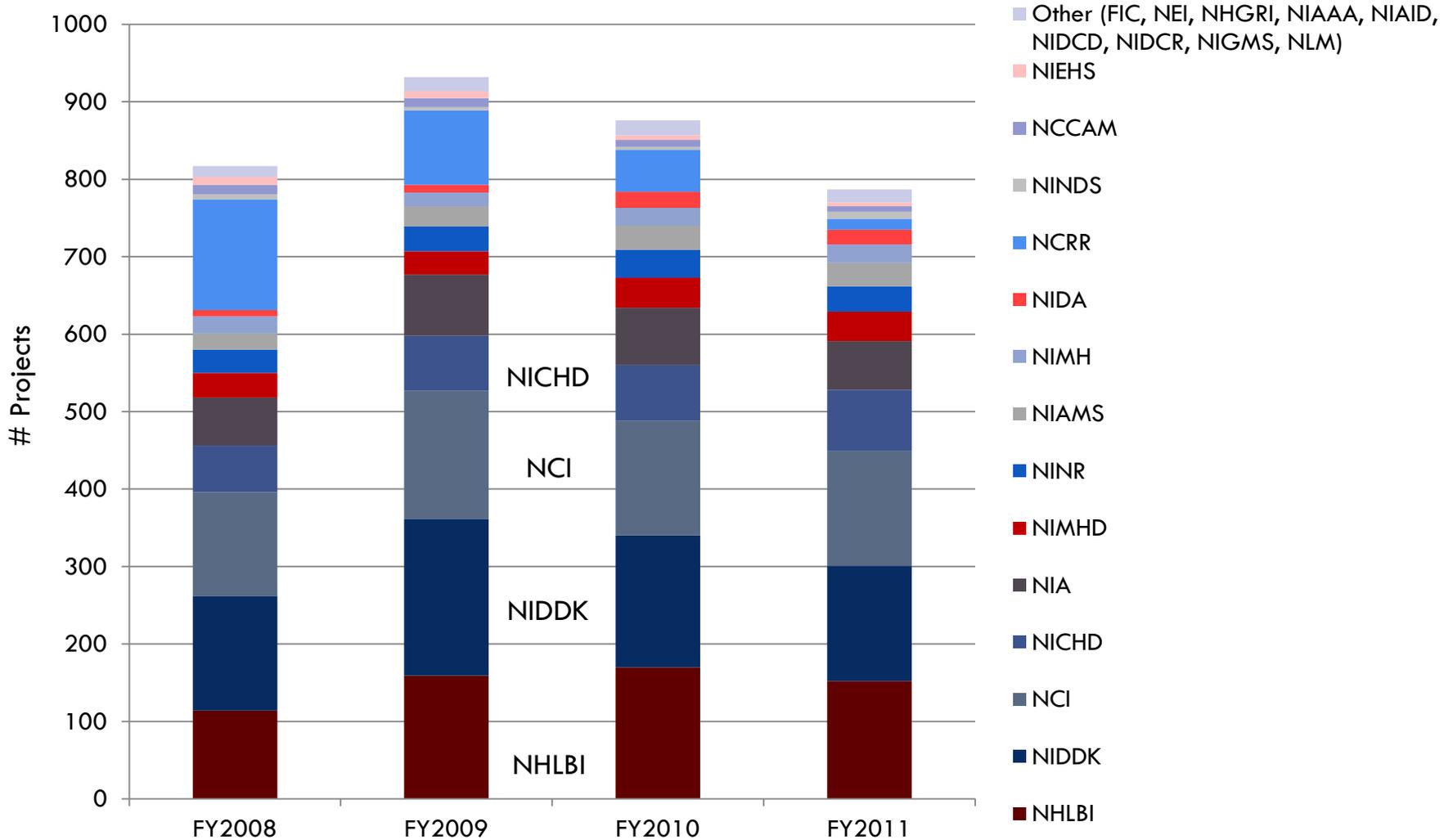
Markers

NIH Institute	# Grants
NHLBI	[Bar]
NIDDK	[Bar]
NCI	[Bar]
NICHD	[Bar]
NIA	[Bar]
NCMHD	[Bar]
NINR	[Bar]
NIAMS	[Bar]
NIMH	[Bar]
NIDA	[Bar]
NCRR	[Bar]
NINDS	[Bar]
NCCAM	[Bar]
NIHES	[Bar]
NIDCD	[Bar]
NIAAA	[Bar]
NIGMS	[Bar]
NIDCR	[Bar]
NLM	[Bar]
FIC	[Bar]
NHGRI	[Bar]
NEI	[Bar]

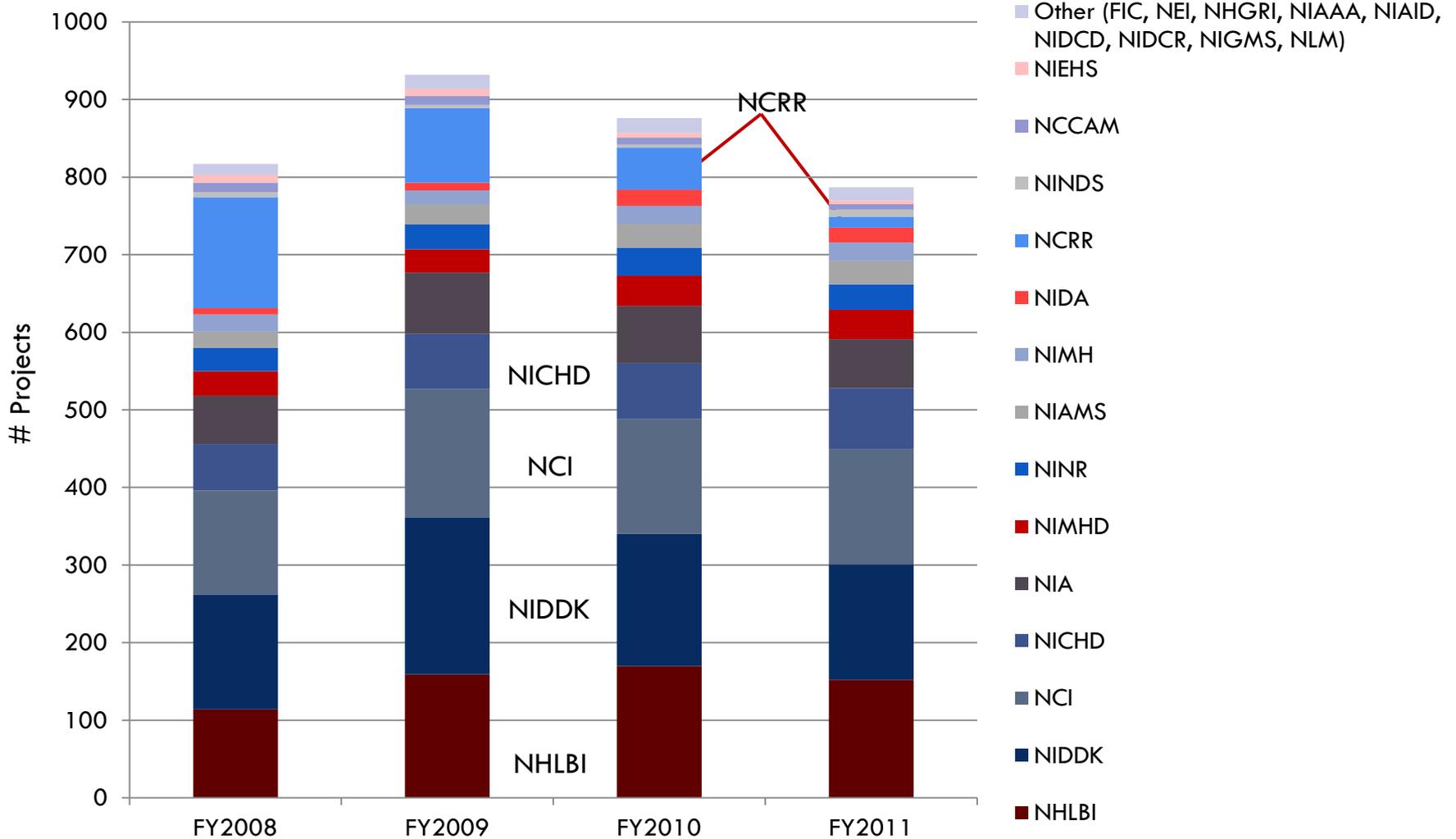
Settings Markers Base Map Labels default

Surgical Sciences, Biomedical Imaging, & Bioengineering

Projects by Year



Projects by Year



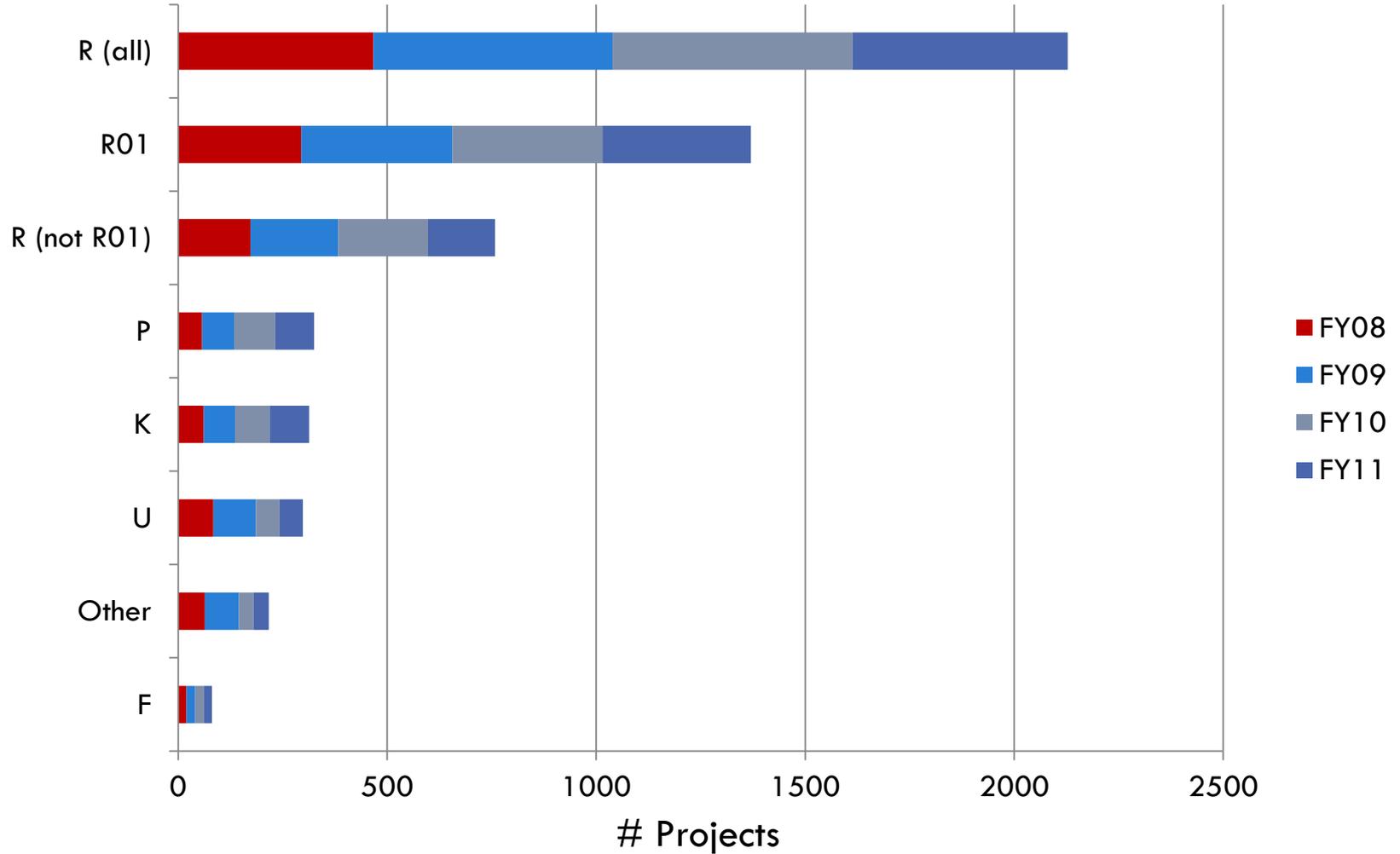
Grant Activity Codes

18

- F- Fellowship Programs
- K- Research Career Programs
- P- Research Program Projects and Centers
- R- Research Projects
- U- Cooperative Agreements

Projects by Activity

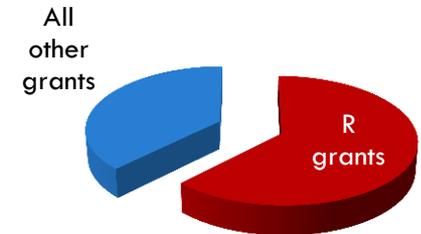
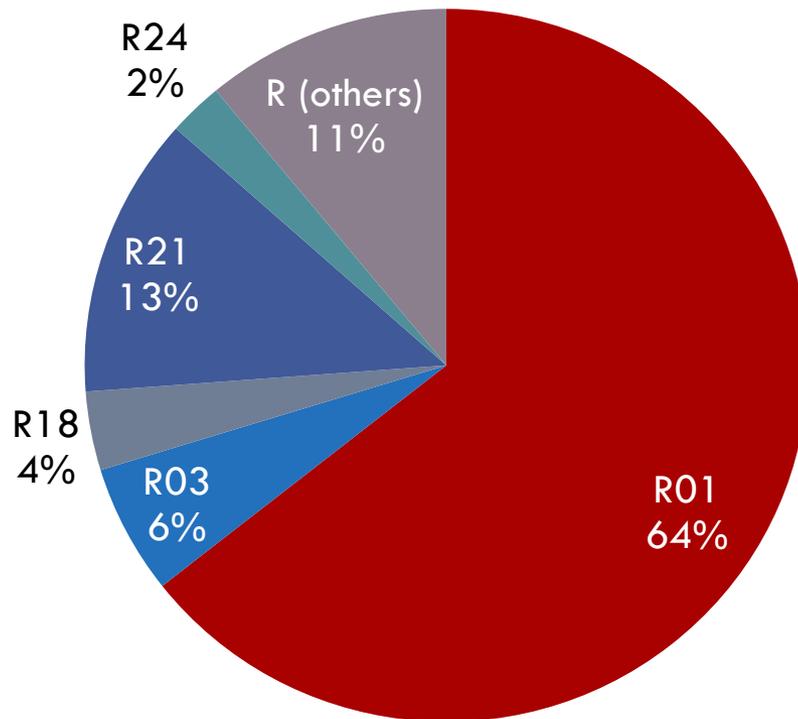
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Distribution by Funding Mechanism

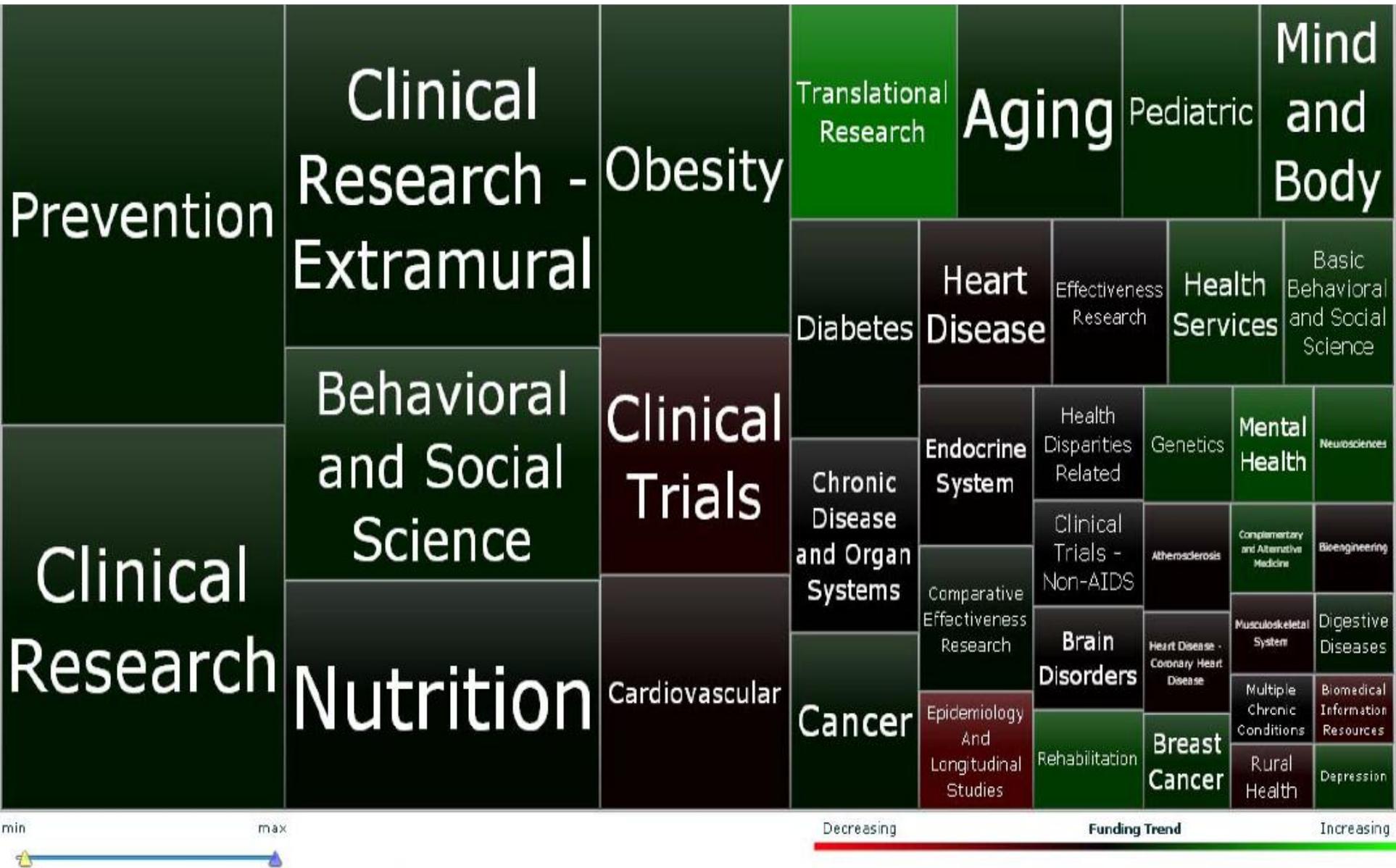
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□ R- Research Projects



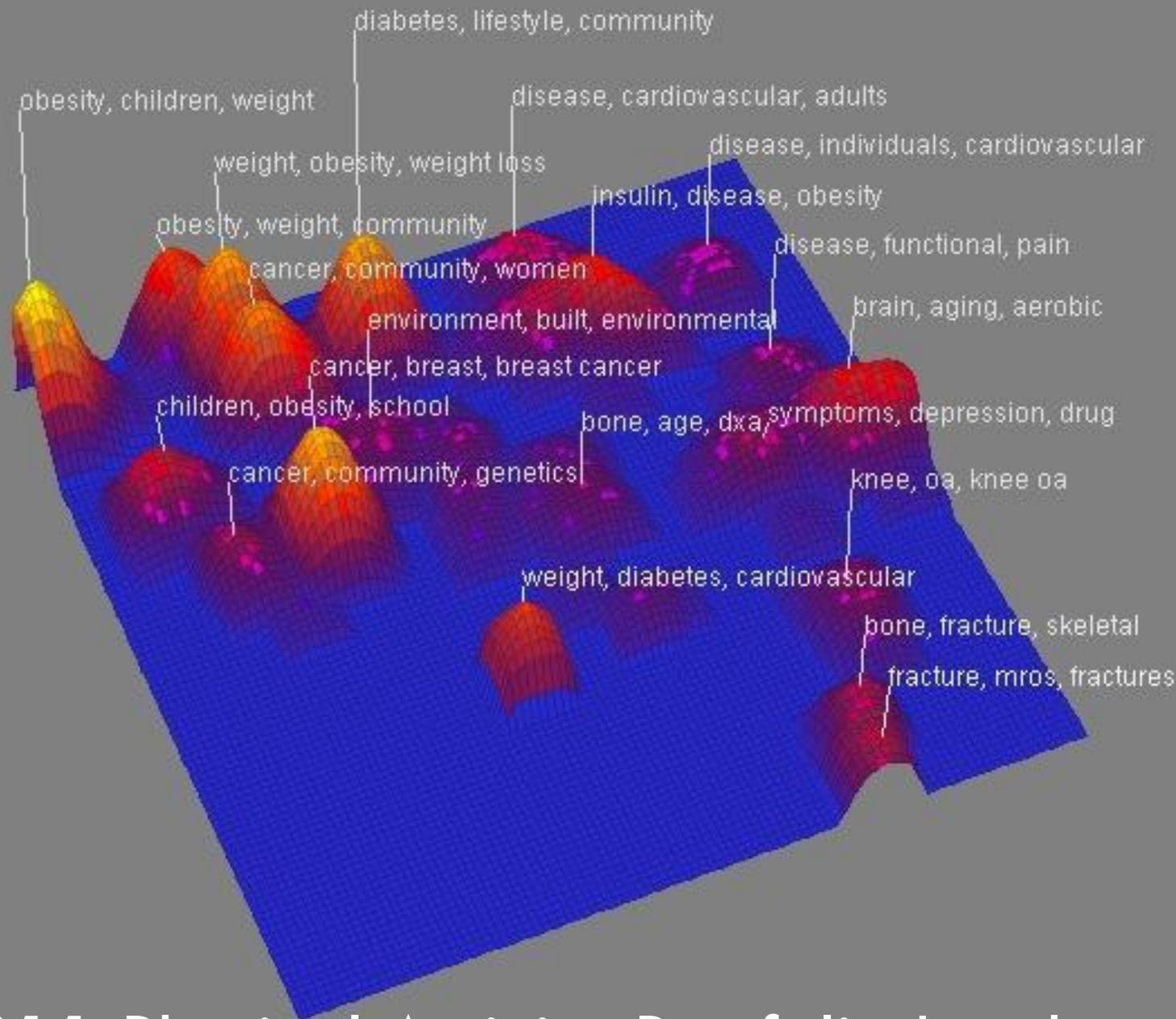
- R01:** Research Project
- R03:** Small Research Grants
- R18:** Research Demonstration and Dissemination Projects
- R21:** Exploratory/Developmental Grants
- R24:** Resource-Related Research Projects

PViz: Most Common RCDC categories



787 total selected

IN-SPIRE



FY2011 Physical Activity Portfolio Landscape

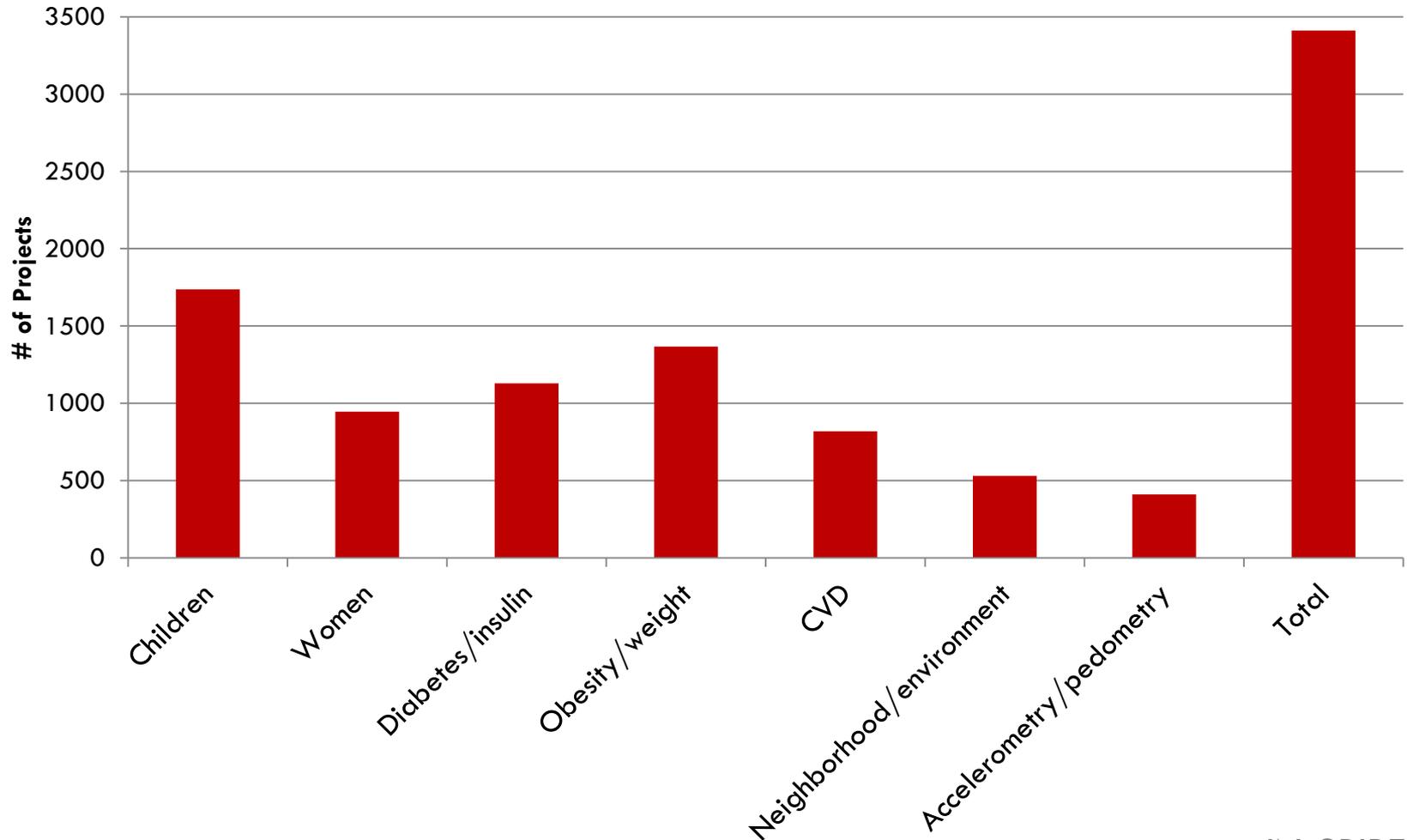
Projects by Theme

23

- From PA guidelines:
 - ▣ Population groups: women, children/youth
 - ▣ Obesity/weight
 - ▣ Diabetes
 - ▣ Cardiovascular disease
 - ▣ Environments: neighborhood, school, community
 - ▣ Accelerometry and pedometry
 - ▣ Exercise types: aerobic activity, resistance training, bone-strengthening

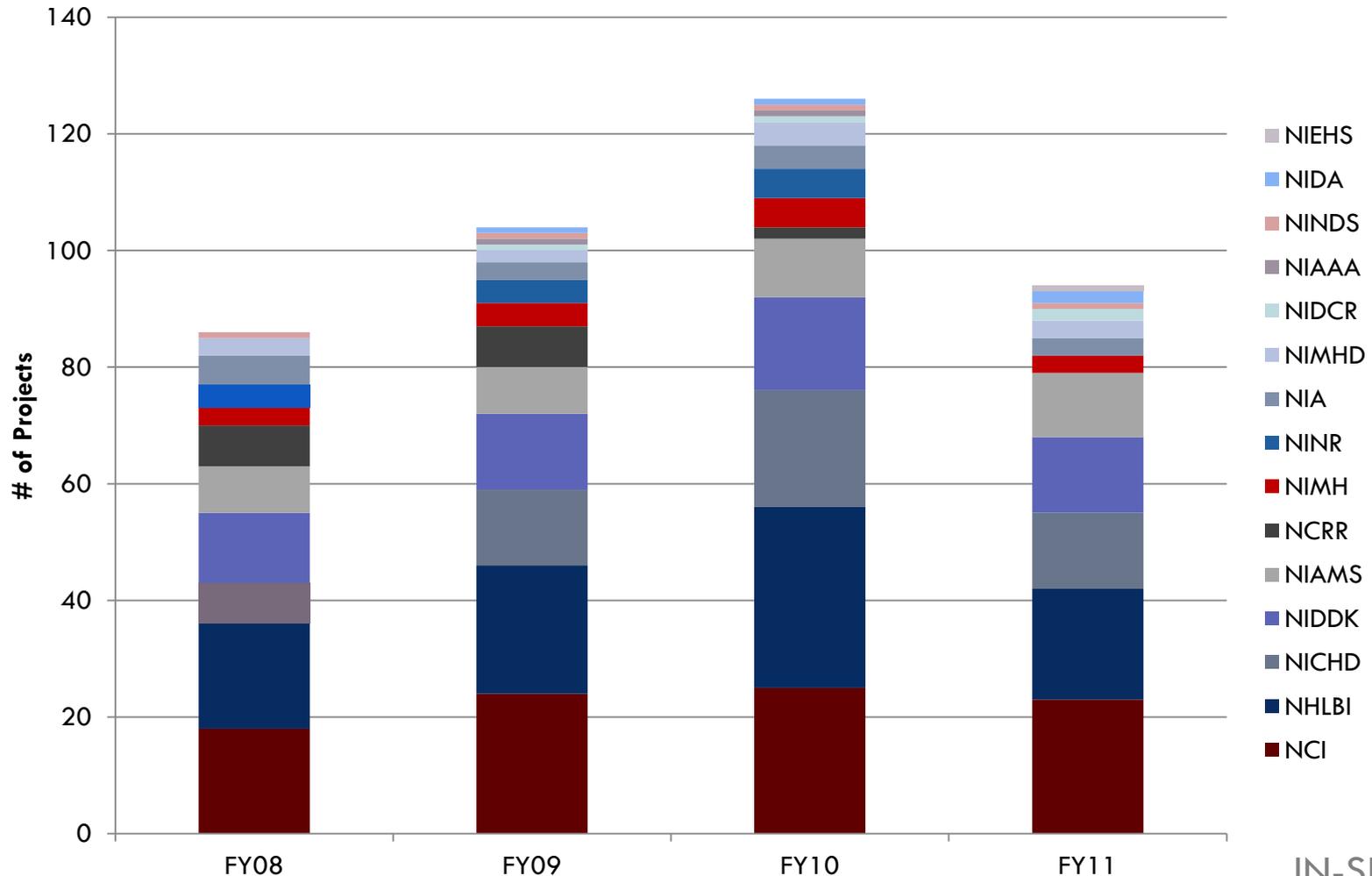
Projects by theme: FY08-FY11

24



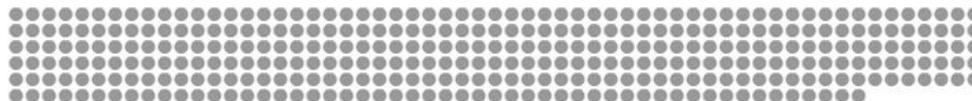
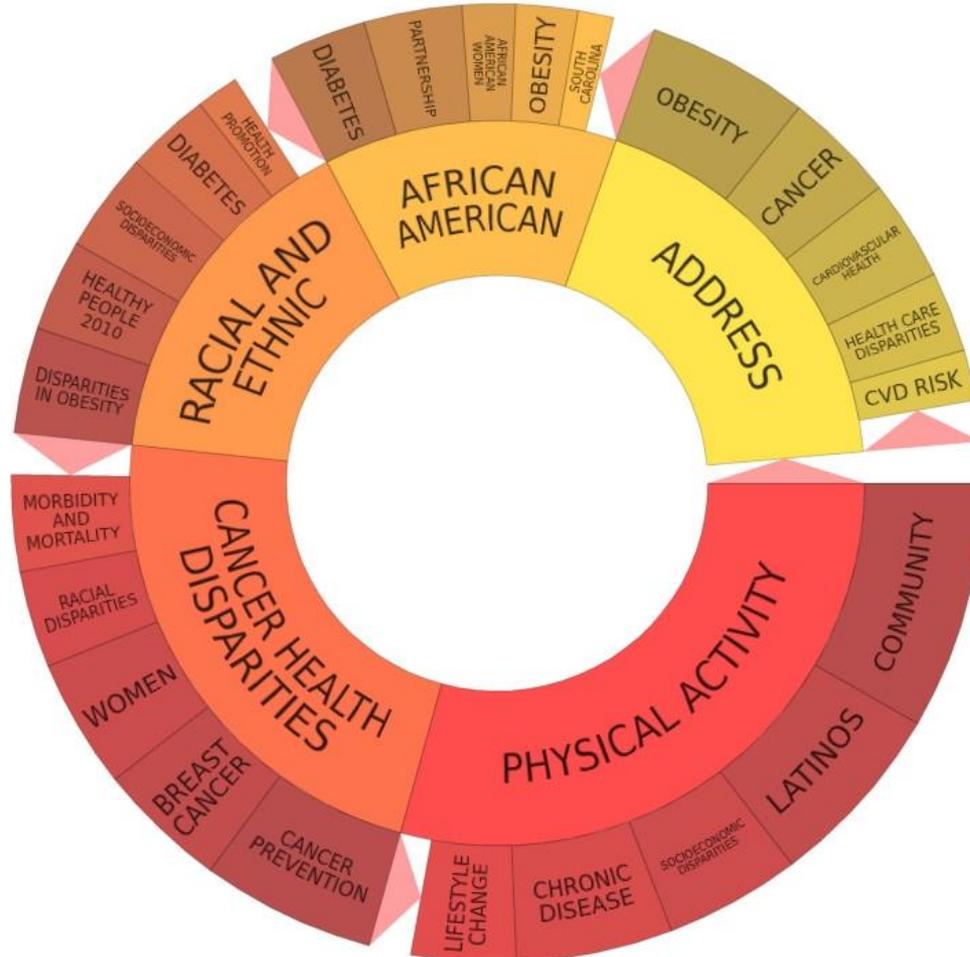
Projects by Theme: “Accelerometry” or “Pedometry”

25



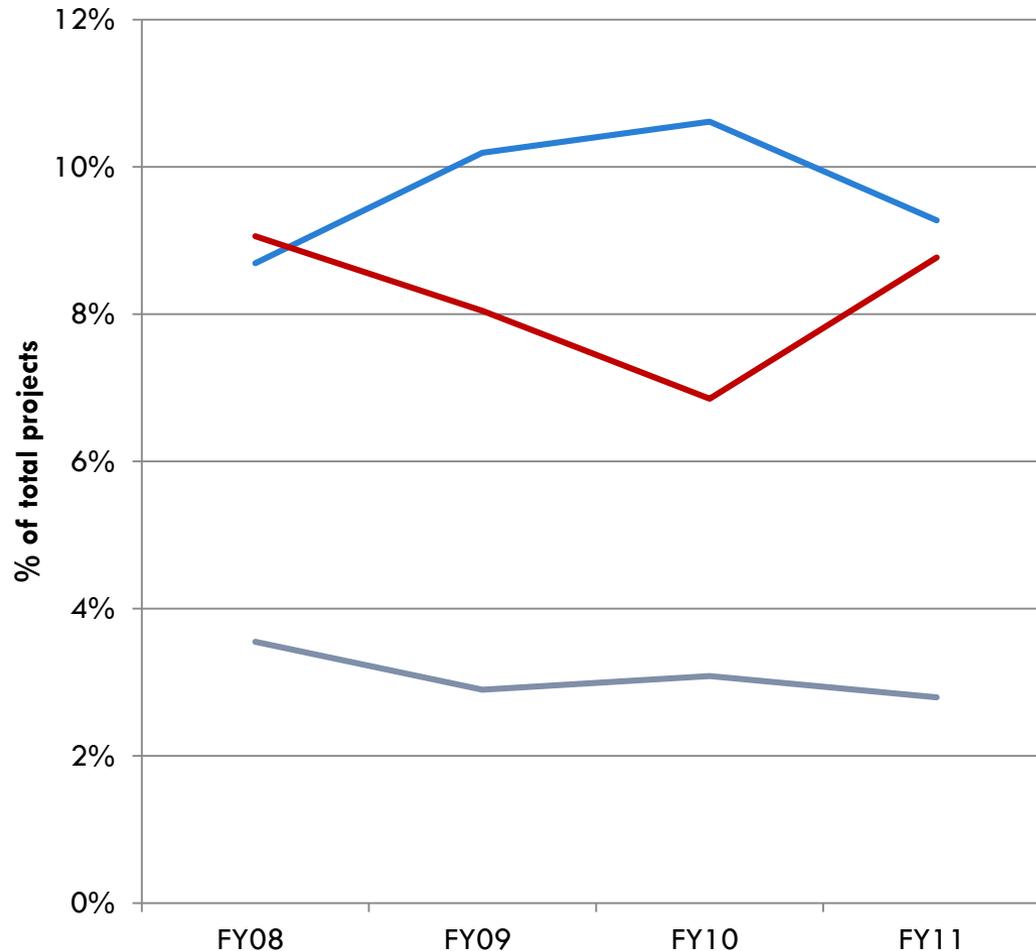
Common Themes: “Disparities”

26



Trends in Exercise Categories

27



— Bone/Fracture/skeletal
— Aerobic
— Resistance training

Top ICs

Bone: NIDDK, NIA, NIAMS

Aerobic: NHLBI, NIA, NCI, NIDDK

Resistance: NCI, NIA, NIDDK

Acknowledgements

28

- Office of Portfolio Analysis
 - ▣ George Santangelo, Director
 - ▣ Carole Christian
 - ▣ Paula Fearon

Summary Discussion

29

- **Were you surprised by any of the data – e.g. number of projects, themes of IC distribution?**
- **If you were to make a recommendation on mechanism of award (R, K, P) and the state-of-the-science in PA research, what should NIH focus on for the next five years?**
- **From information and themes depicted in the visualization, are there themes or areas of research that should receive increased emphasis, decreased emphasis?**

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Additional discussion questions

31

- Are there new approaches for strengthening the evidence base for future physical activity program and policy initiatives?
- What are the key questions related to future study designs, physical activity measurement methodology, etc.?
- What are the priority research and program needs?

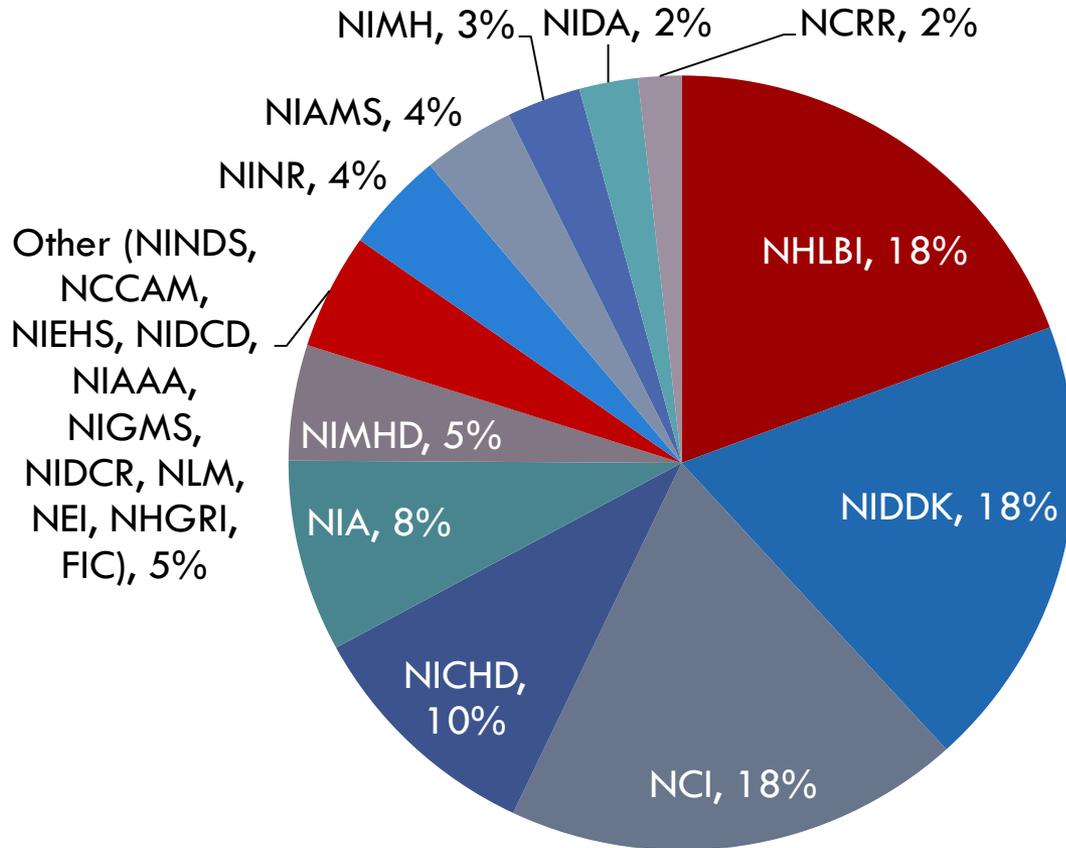
Supplemental Information

32

- The following slides contain additional materials produced from the portfolio analysis process

Projects by IC: FY2011

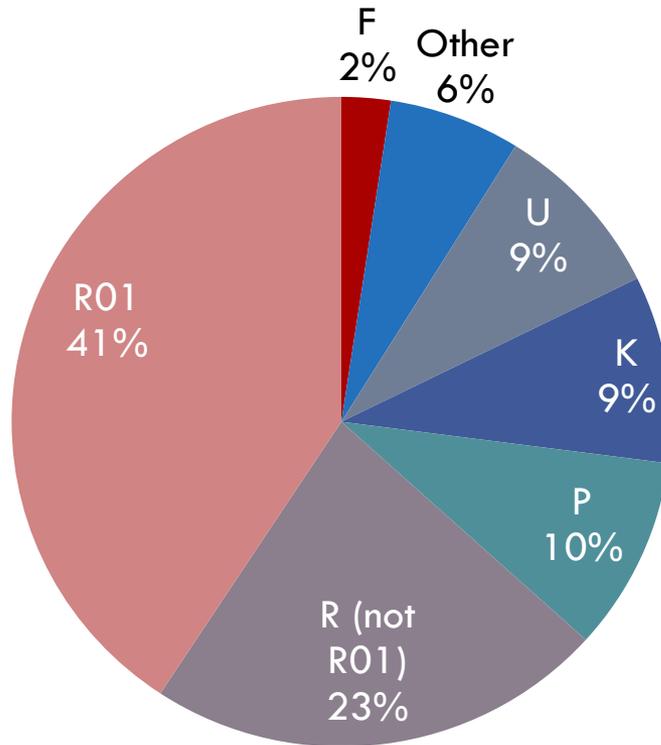
33



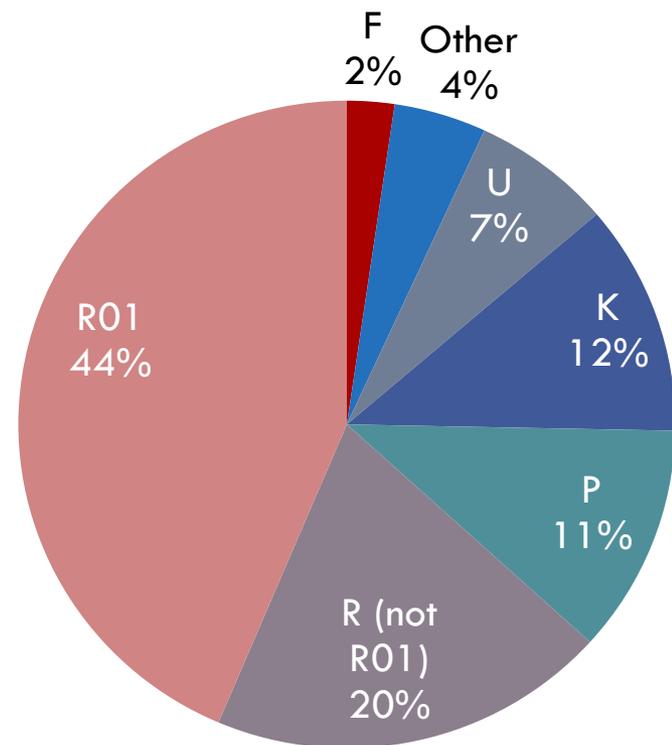
Distribution of Projects by Activity

34

Distribution of projects by activity (FY08-FY11)



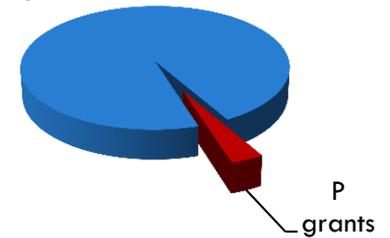
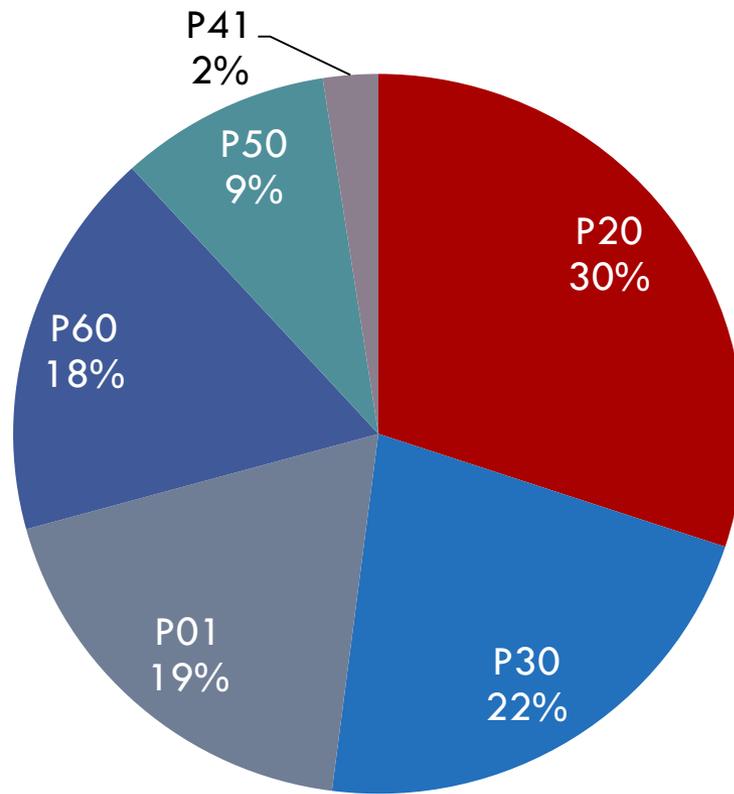
Distribution of projects by activity (FY11)



Distribution by Funding Mechanism

35

□ P- Research Program Projects and Centers



P01: Research Program Projects

P20: Exploratory Grants

P30: Center Core Grants

P41: Biotechnology Resource Grants

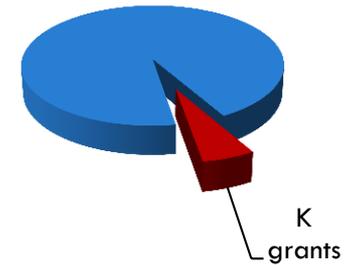
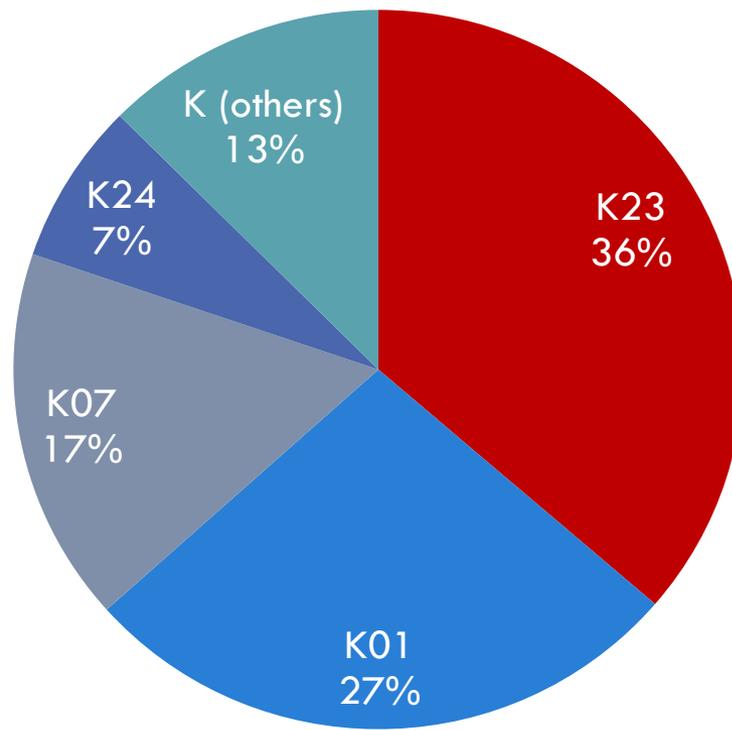
P50: Specialized Center

P60: Comprehensive Center

Distribution by Funding Mechanism

36

□ K- Research Career Programs



K01: Research Scientist Development Award

K07: Academic/Teacher Award

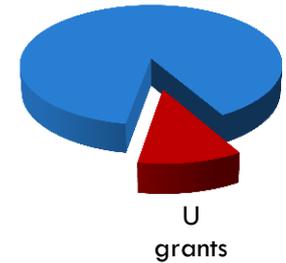
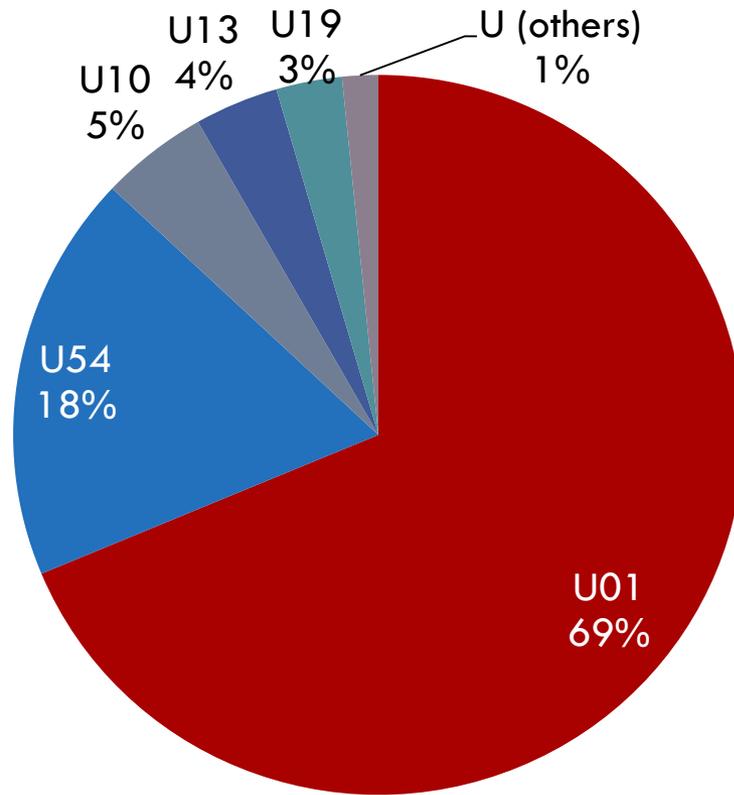
K23: Mentored Patient-Oriented Research Career Development Award

K24: Midcareer Investigator Award in Patient-Oriented Research

Distribution by Funding Mechanism

37

□ U- Cooperative Agreements



U01: Research Project

U10: Cooperative Clinical Research

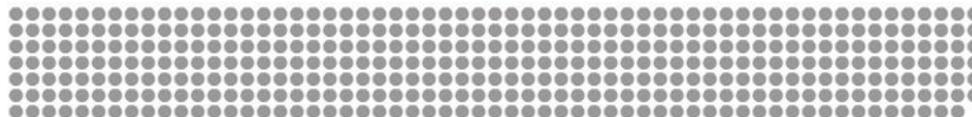
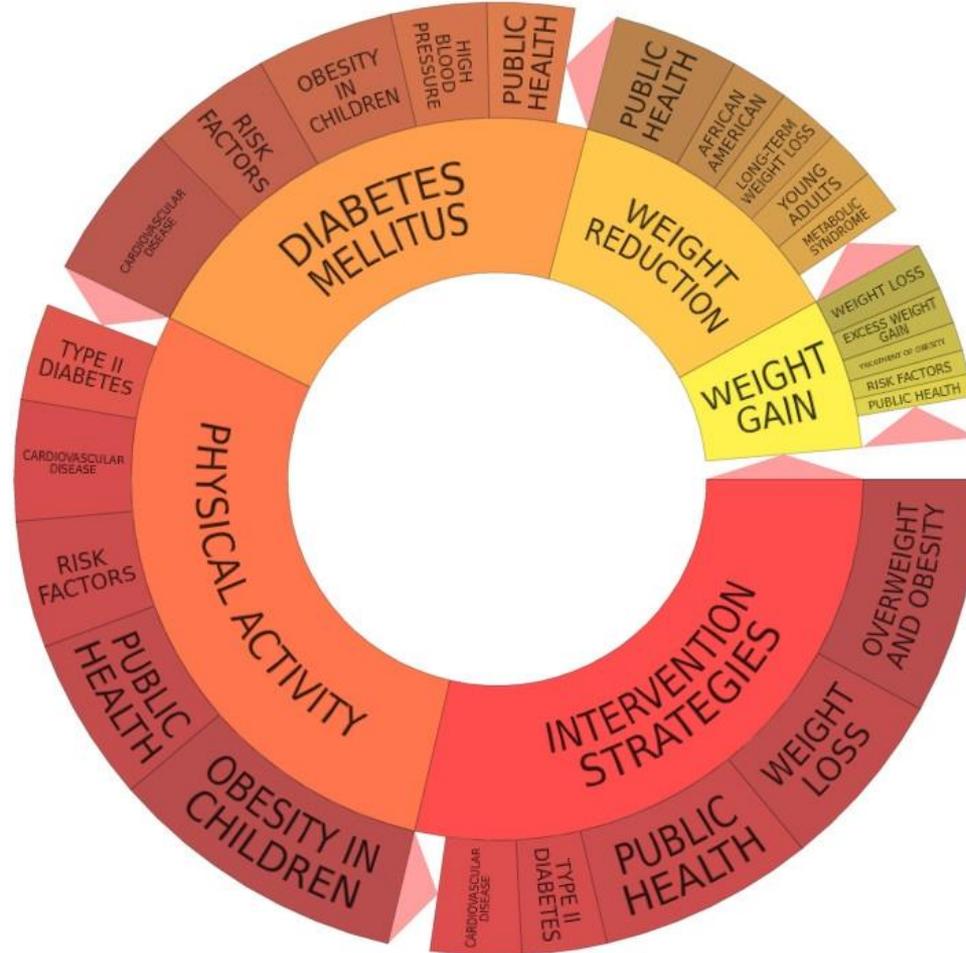
U13: Conference

U19: Research Program

U54: Specialized Center

Common Themes: “Obesity”

38



Common Themes “Women”

39

