

Review for Today

- **Why consider a career development award?**
- **What are the resources available within NIH?**
- **What is a career development award?**
- **Which CDA is right for me?**

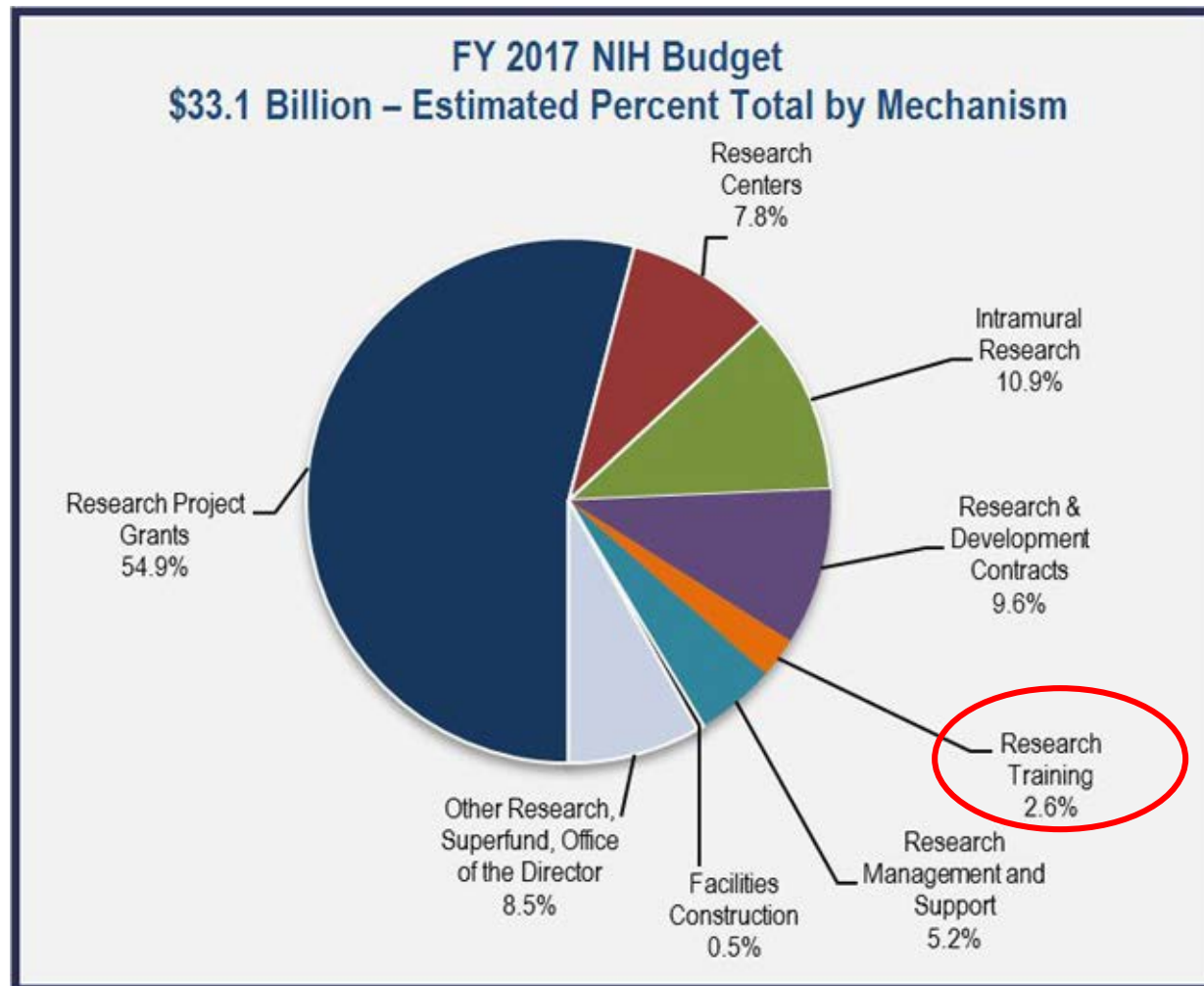
Next time:

- **Developing your application**
- **Writing a career development plan**
- **How to select mentors**
- **Tips and advice**

Why a Career Development Award?

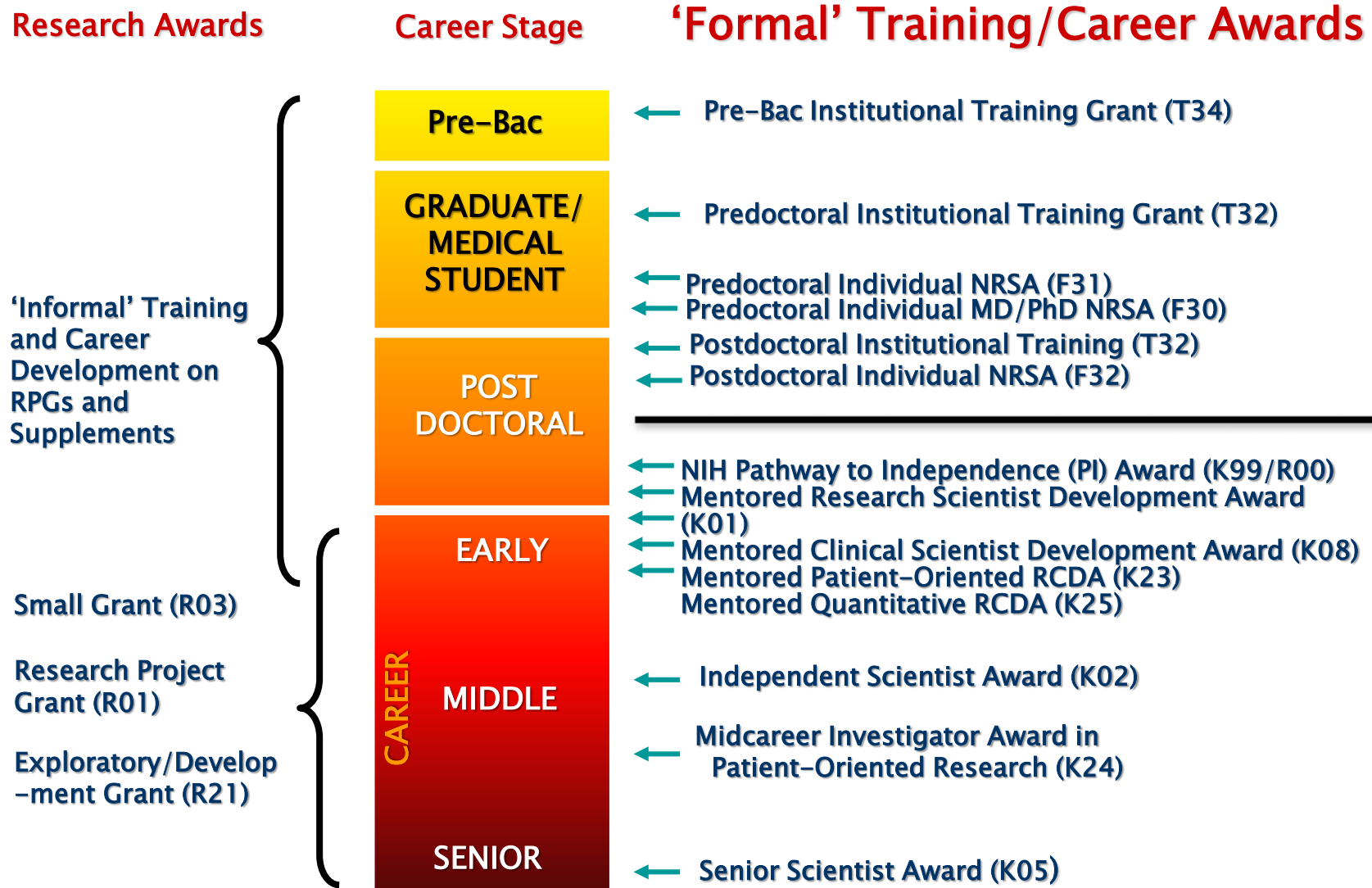
- *To provide protected time for individuals to further develop their research expertise*
- *Because the odds of funding are higher*
- *About 75-80 at OHSU; 25 awarded last year*
- *About 65% move successfully to the next funding stage*

FY 2017 NIH Budget ~\$33B



\$857K for training
Similar for career

Research Training and Career Development Timeframe



Common Features of K awards

- **75% protected time for research**
- **Other 25% for clinical, teaching, admin**
- **Must have faculty appointment**
- **US Citizen or non-citizen US nationals (except K99)**
- **Must have mentor team**
- **3 to 5 years duration**
- **Career development plus research goals**
- **Cannot have had NIH RPG except R03, R21**

Common Features: Eligibility

- **Eligibility—Who can Apply?**
 - **Doctoral Degree (generally)**
 - Some (K08, K23, K24) require clinical degree
 - **US Citizen, Non-Citizen National, Permanent Resident (except K99/R00); Citizenship requirement met at time of award, not application**
 - **Previous NIH PD/PI may be Ineligible**
 - Usually PD/PI on R03 or R21 is OK (except K99/R00)
 - PD/PI on R01 or subproject PD/PI on a P01 is NOT OK
 - **For K99/R00:**
 - Eligibility changed to target investigators who have no more than 4 years of postdoctoral research experience (*previously 5 years*)
 - If applicant achieves independence prior to initiating the K99, neither K99 or R00 phases will be awarded

Read the Eligibility Section of the Funding Opportunity Announcements (FOAs) carefully!

Common Features: Duration

- Duration: three, four, or five years
 - Extensions in time – award terms remain in effect; e.g. minimum effort requirement must be maintained during the extension period
- Entry level awards require a mentor, multiple mentors are OK
- Mentored Ks encouraged to apply for independent support during K
- K99 phase of the K99/R00 minimum 12 months; generally no more than 2 years
- Brand new: Up to 8 total years of K-level training is allowed for clinicians at NHLBI, maybe NCI (K12 or KL2 plus K23, K08)

Common Features: Appointment & Effort

- **Appointment:**
 - For K eligibility purposes, individual must have a full-time appointment at applicant organization (*organization defines “full-time”*)
- **Level of Effort:**
 - Mentored awards require full-time effort (defined as at least 9 person months (i.e.75%) on research and the rest on other career development related activities)
- At the time of application and initial award, all candidates must meet the full-time appointment requirement as well as the minimum 75% effort requirement.
- Note, some K programs permit 50% effort for clinical specialties

Career Development Awards = 'K' Awards

- **Individual Awards:**

- Mentored
- Independent
- Depending on the award, for early, mid-, or senior career levels
- Depending on the award, all doctorates or restricted to clinical doctorates

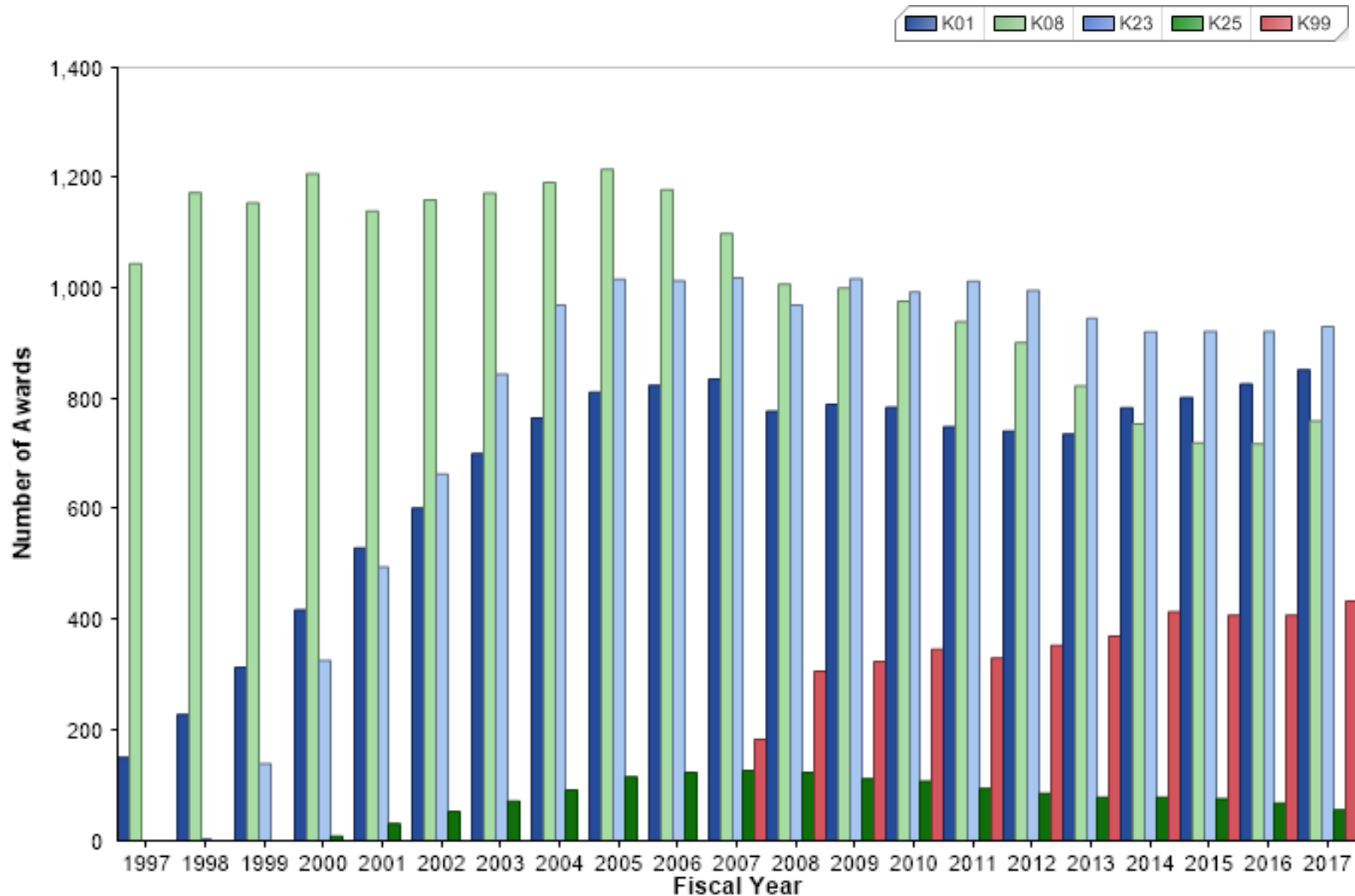
- **Institutional Awards (Mentored):**

- Institution, not the individual, applies for the award
- Curriculum/Program Development

Mentored K Awards

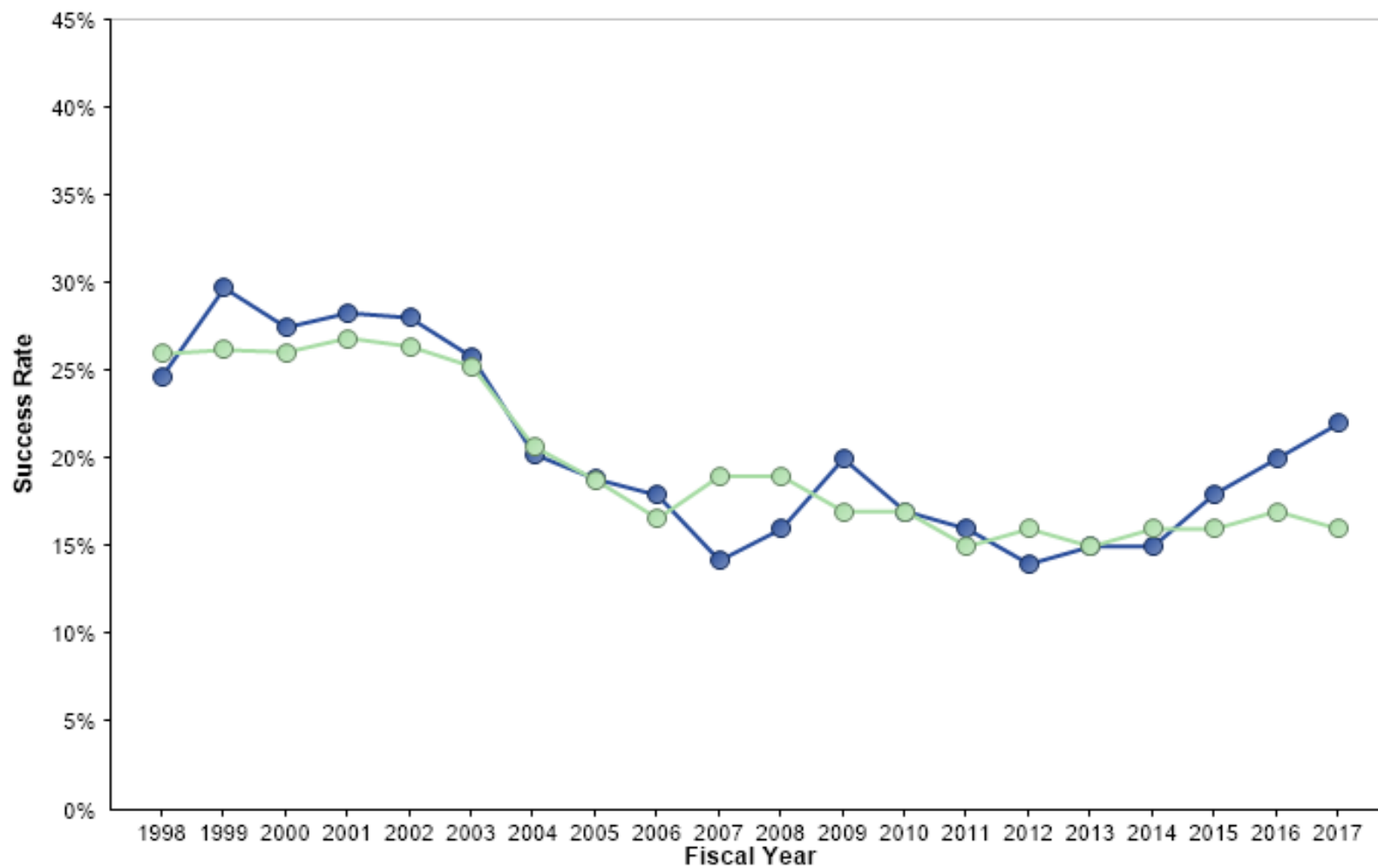
- **K01: Mentored Research Scientist Development Award**
- **K07: Cancer Prevention, Control, Behavioral Sciences, and Population Sciences Career Development Award**
- **K08: Mentored Clinical Scientist Development Award for Laboratory Research**
- **K22: Research Career Award for Transition to Independence**
- **K23: Mentored Patient-Oriented Research Development Award**
- **K25: Mentored Quantitative Research Development Award**
- **K99/R00: NIH Pathway to Independence Award**
- **K12: *Institutional* Mentored Research Scientist Development Program**

Research Career Development Awards Number of entry-level awards



Research Project Grants
Success rates of new (type 1) competing applications for targeted and untargeted research

Targeted Untargeted



K01- Mentored Research Scientist Development Award

- Support for intensive, supervised career development in biomedical, behavioral, or clinical sciences leading to research independence.
- 75% FT effort, usually fixed salary
- Define the need for 3-5 years of additional supervised research, can be in *new area for applicant or one that substantially adds to research capability* of applicant
- Ideal candidate varies by institute
- Specific focus, under-represented in research, disabled, disadvantaged background, interruption of research career

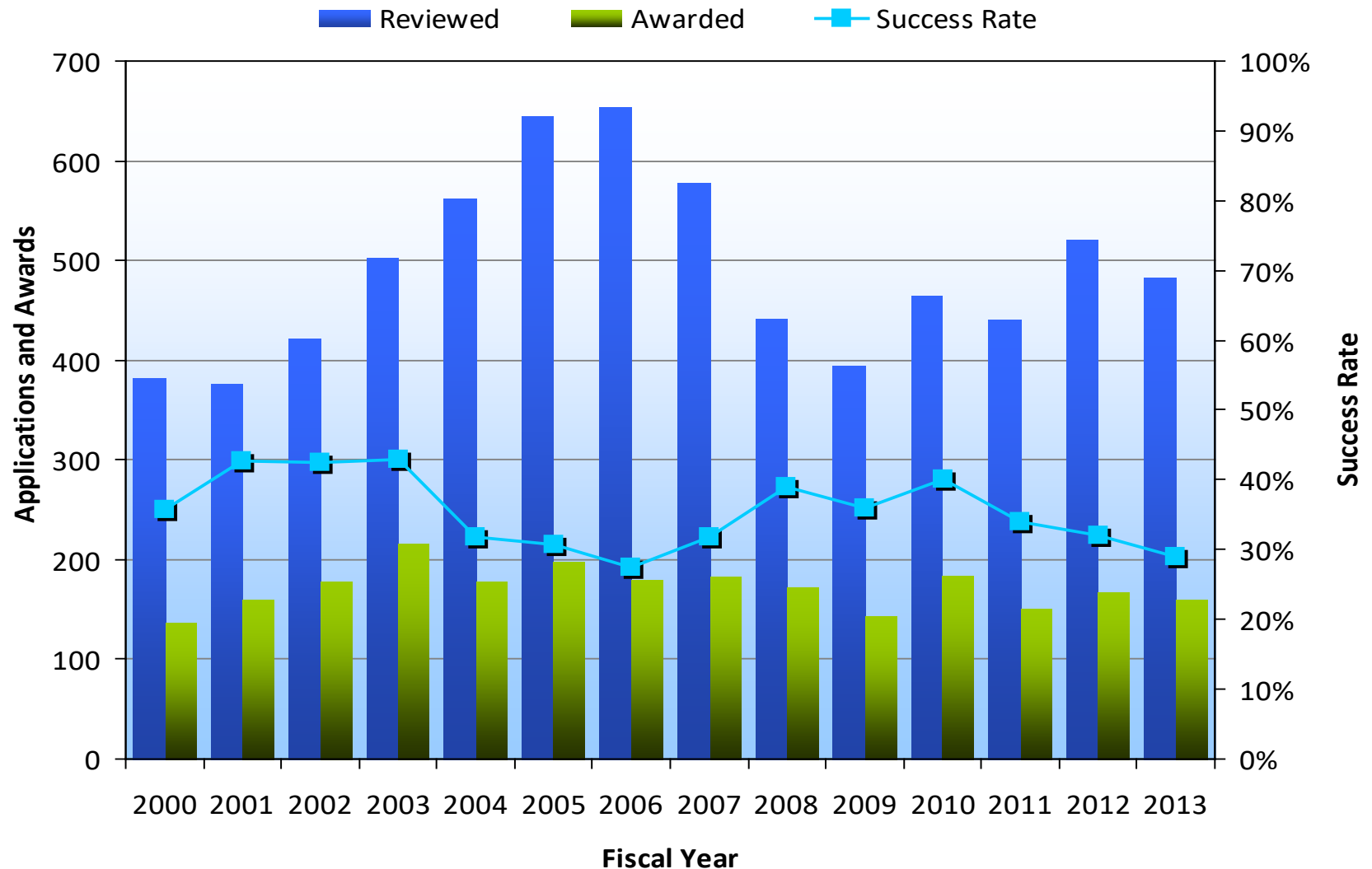
K01-International Research Scientist Development Award

- **Awarded thru Fogarty International Center**
- **Must work with low to middle income countries, as defined by World Bank**
- **Goal is to provide training in health issues of developing countries, build collaboration**
- **\$75K to PI, \$20K for travel, research; 3-5yr**
- **Must have US and LMIC mentors**
- **Must spend at least 50% time abroad**

K01s vary by IC

NIDDK	2 to 7 years postdoc req	\$90K, \$25 res
NHLBI	Diversity, disadvantaged, or disability OR epidemiology, biostats, outcomes, implementation	\$75K, \$30K res
NHGRI	Ethical and social issues in genome science, some genome science res	No \$ limit for salary, \$40K res
NIA	Parent FOA	\$75K, \$20K res
NIAMS	Parent FOA	\$75K, \$25K res
NICHD	<ol style="list-style-type: none"> 1. Medical rehabilitation 2. Child abuse and neglect 3. Population research, demography 4. Change in discipline 	\$75K, \$25K res
NIDA	Parent FOA	\$90K, \$50K res
NIMH	<6 yrs postdoc, 4 years support only	\$90K, \$50K res

Success Rate of K01 Awards



2016	FY Total		3,208	998	31.1%	\$172,826,147
2017	K01	NCI	22	7	31.8%	\$984,001
2017	K01	NHLBI	63	22	34.9%	\$3,547,254
2017	K01	NIDCR	3	2	66.7%	\$286,703
2017	K01	NIDDK	111	32	28.8%	\$4,318,658
2017	K01	NINDS	15	6	40.0%	\$1,288,578
2017	K01	NIAID	29	4	13.8%	\$492,377
2017	K01	NICHD	15	5	33.3%	\$658,683
2017	K01	NIEHS	28	0	0.0%	\$0
2017	K01	NIA	65	26	40.0%	\$3,307,125
2017	K01	NIAMS	39	12	30.8%	\$1,516,248
2017	K01	NIDCD	6	1	16.7%	\$138,670
2017	K01	NIMH	81	29	35.8%	\$4,539,449
2017	K01	NIDA	68	19	27.9%	\$3,050,056
2017	K01	NIAAA	29	14	48.3%	\$2,245,960
2017	K01	NINR	9	4	44.4%	\$356,328
2017	K01	NHGRI	3	0	0.0%	\$0
2017	K01	NIBIB	4	2	50.0%	\$335,329
2017	K01	NCCIH****	7	2	28.6%	\$243,833
2017	K01	FIC	18	5	27.8%	\$653,295
2017	K01	NLM	14	3	21.4%	\$502,487
2017	K01	OD Common Fund	3	3	100.0%	\$500,967
2017	K01	OD ORIP-SEPA†	13	5	38.5%	\$1,326,371
2017	K01	Activity Total	645	203	31.5%	\$30,292,372

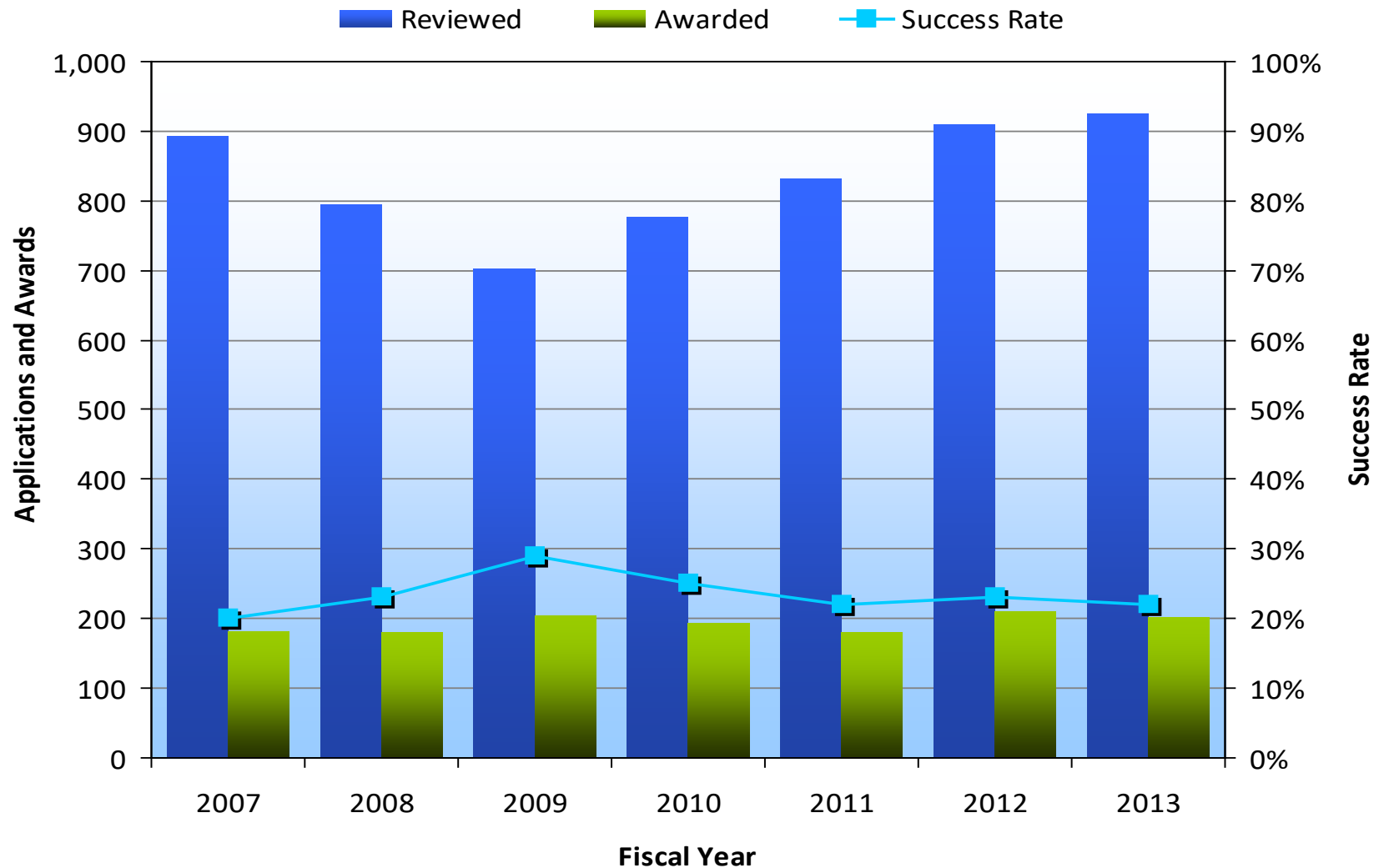
NIH Pathway to Independence (PI) Award: K99 / R00

- **Eligibility:**
 - Intramural or extramural postdocs with 1-4 years of experience
 - US Citizens and non-US Citizens
 - Cannot have held a faculty position
 - No more than 4 years of postdoc research training when submitted
 - Cannot have been PI on R01, P01, etc (except R03, R21)
- **Mentored Phase (K99): 2 yrs or less**
 - Costs: Salary \$ 50,000 + Fringe + \$ 20,000 Research Expenses
 - Total Costs < \$ 90,000 /yr
 - 0.75 FTE, Time to complete research, publish results
- **Independent Investigator Phase (R00): 3 yrs or less**
 - Costs: Salary + Fringe + \$ 50,000 Research Expenses
 - Total Costs < \$ 249,000 /yr

NIH Pathway to Independence (PI) Award K99 / R00

- **Phase 1, 1-2 years of mentored support**
- **Phase 2, 3 years of independent support**
- **Phase 2 contingent on securing independent research position, evaluation of research plan, positive career development**
- **Initial application must have proposal for research project as independent investigator in Phase 2**

Success Rate of K99 Awards

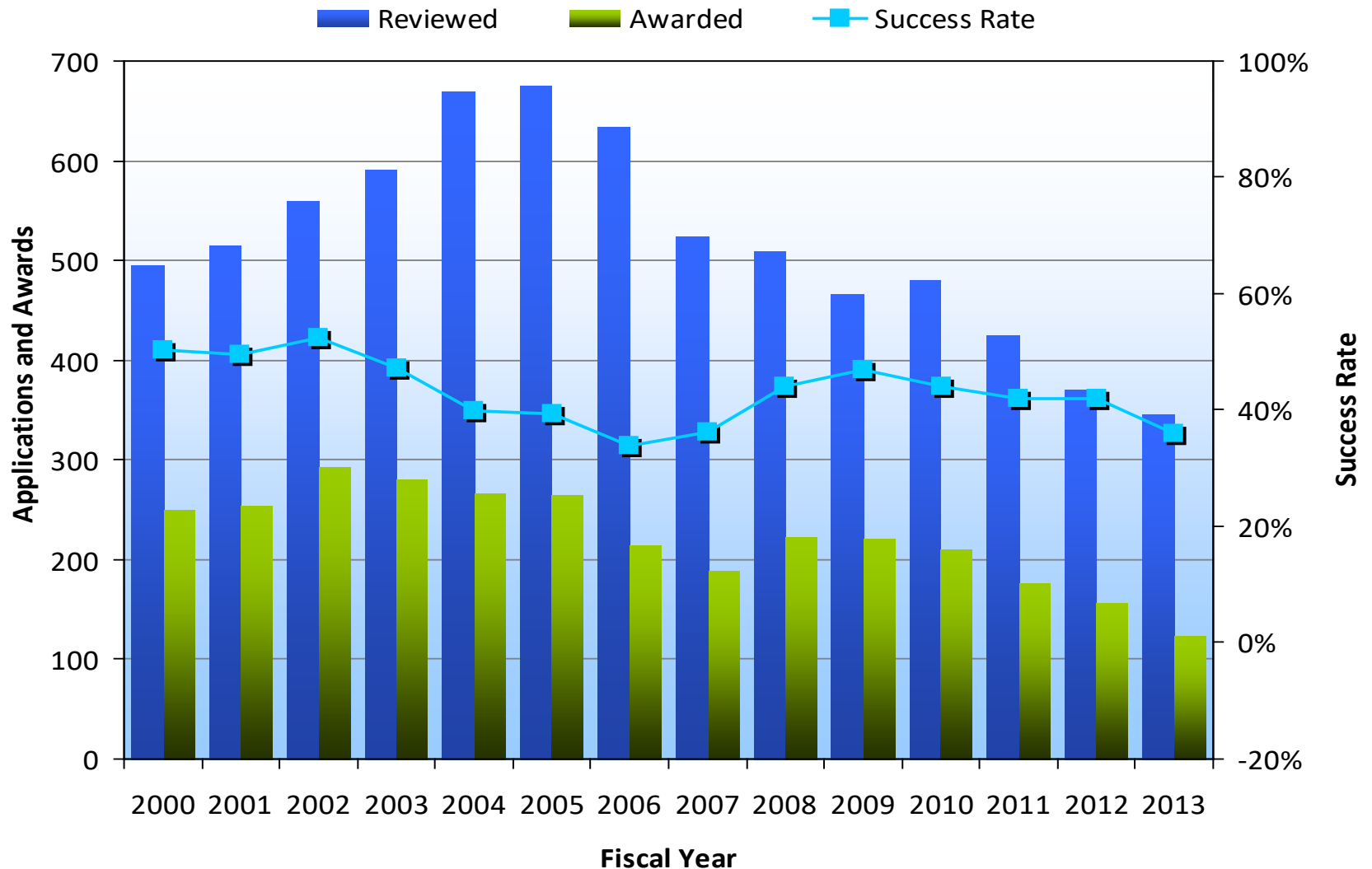


2017	K76	Activity Total	10	5	50.0%	\$1,214,211
2017	K99	NCI	160	29	18.1%	\$3,948,618
2017	K99	NHLBI	99	24	24.2%	\$3,072,290
2017	K99	NIDCR	20	8	40.0%	\$1,088,762
2017	K99	NIDDK	40	9	22.5%	\$815,663
2017	K99	NINDS	78	7	9.0%	\$626,346
2017	K99	NIAID	55	4	7.3%	\$492,090
2017	K99	NIGMS	103	20	19.4%	\$1,795,542
2017	K99	NICHD	66	23	34.8%	\$2,614,951
2017	K99	NEI	19	9	47.4%	\$888,860
2017	K99	NIEHS	30	11	36.7%	\$1,170,586
2017	K99	NIA	67	28	41.8%	\$3,207,904
2017	K99	NIAMS	22	5	22.7%	\$460,636
2017	K99	NIDCD	16	3	18.8%	\$347,921
2017	K99	NIMH	78	16	20.5%	\$1,871,170
2017	K99	NIDA	52	10	19.2%	\$1,444,042
2017	K99	NIAAA	26	11	42.3%	\$1,491,773
2017	K99	NINR	10	2	20.0%	\$181,258
2017	K99	NHGRI	19	7	36.8%	\$910,667
2017	K99	NIBIB	30	5	16.7%	\$409,857
2017	K99	NCCIH****	5	3	60.0%	\$327,599
2017	K99	NIMHD***	4	1	25.0%	\$90,386
2017	K99	NLM	5	0	0.0%	\$0
2017	K99	OD ORIP-SEPA†	1	0	0.0%	\$0
2017	K99	Activity Total	1,005	235	23.4%	\$27,256,921

K08-Mentored Clinical Scientist Development Award

- **Goal is to support development of outstanding clinician research scientist**
- **This is the equivalent of K23; go for K23 if patient-oriented except if data only**
- **Limited to clinicians (MD/DO, clinical PhD, others with terminal doctorate, clinical license)**
- **75% FT, \$25K for research**
- **Prospective candidate should propose study, research training for all years consonant with previous training and needs**

Success Rate of K08 Awards

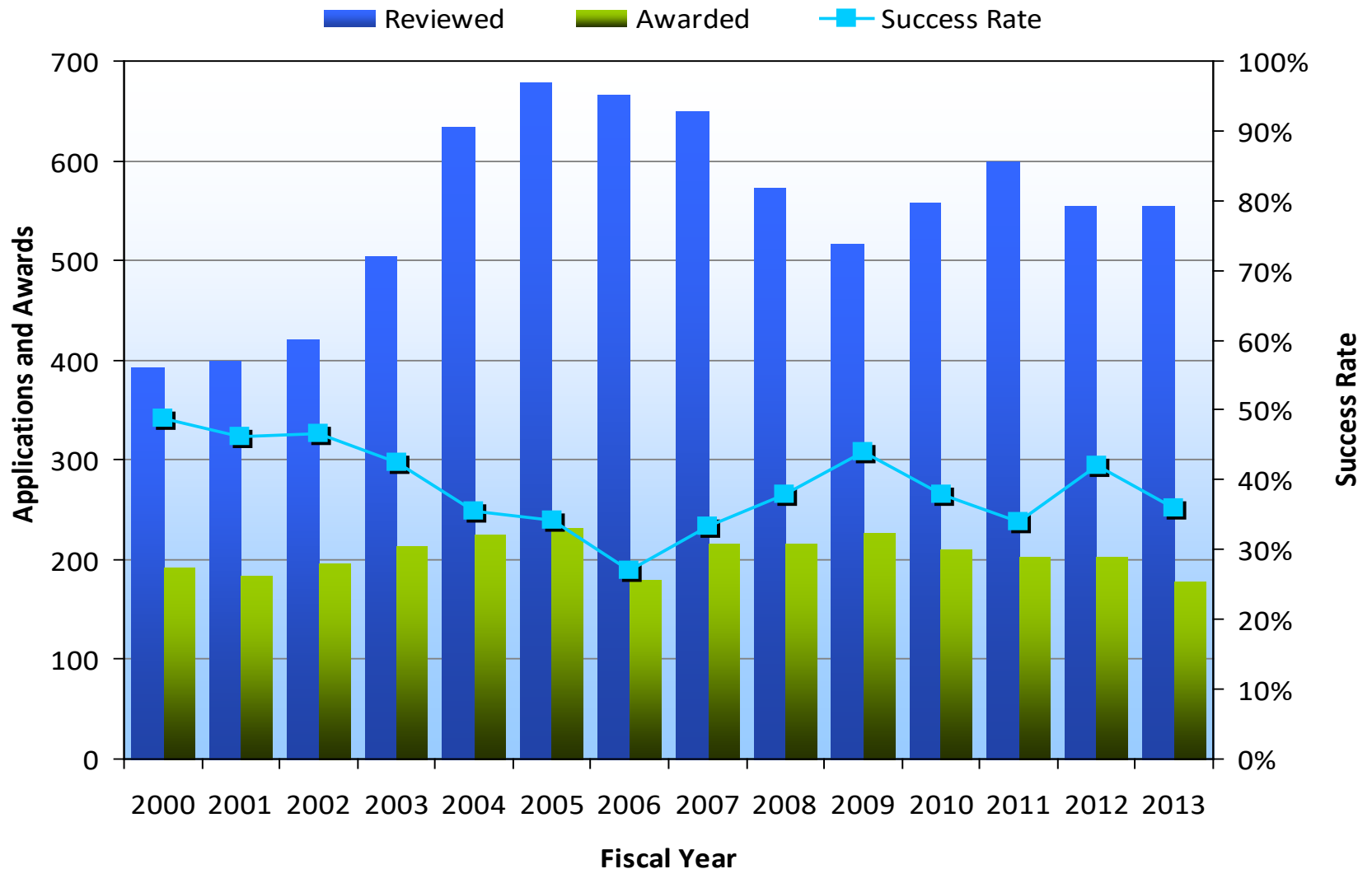


2017	K08	NCI	56	19	33.9%	\$3,184,364
2017	K08	NHLBI	107	56	52.3%	\$9,067,379
2017	K08	NIDCR	8	5	62.5%	\$717,410
2017	K08	NIDDK	56	21	37.5%	\$3,332,258
2017	K08	NINDS	59	26	44.1%	\$4,925,799
2017	K08	NIAID	52	18	34.6%	\$3,393,314
2017	K08	NIGMS	13	9	69.2%	\$1,577,211
2017	K08	NICHD	16	0	0.0%	\$0
2017	K08	NEI	19	8	42.1%	\$1,728,282
2017	K08	NIEHS	2	0	0.0%	\$0
2017	K08	NIA	7	3	42.9%	\$459,322
2017	K08	NIAMS	19	7	36.8%	\$1,208,295
2017	K08	NIDCD	1	1	100.0%	\$178,830
2017	K08	NIMH	15	10	66.7%	\$1,861,551
2017	K08	NIDA	5	3	60.0%	\$585,740
2017	K08	NIAAA	8	6	75.0%	\$1,062,237
2017	K08	NHGRI	1	1	100.0%	\$166,235
2017	K08	NIBIB	1	1	100.0%	\$184,373
2017	K08	NCCIH****	2	1	50.0%	\$195,853
2017	K08	Activity Total	447	195	43.6%	\$33,828,453

K23- Mentored Patient-Oriented Research Career

- **Clinical degree or equivalent.**
- **Must have completed clinical training, including specialty/subspecialty training, prior to receipt**
- **Must be willing to spend minimum of 75% FT professional effort on research career development and clinical research.**
- **Must be citizen, noncitizen national, or permanent resident (no temp or student visas)**
- **No prior R01, R29, SBIR, P01 or P50 subproject, K08 or equivalent. R03 or R21 OK.**

Success Rate of K23 Awards



2017	K23	NCI	21	3	14.3%	\$527,652
2017	K23	NHLBI	138	52	37.7%	\$9,311,596
2017	K23	NIDCR	4	1	25.0%	\$138,634
2017	K23	NIDDK	68	19	27.9%	\$3,577,122
2017	K23	NINDS	57	23	40.4%	\$4,412,723
2017	K23	NIAID	53	12	22.6%	\$2,234,311
2017	K23	NIGMS	4	2	50.0%	\$392,180
2017	K23	NICHD	69	21	30.4%	\$3,368,805
2017	K23	NEI	15	5	33.3%	\$1,078,561
2017	K23	NIEHS	1	1	100.0%	\$201,525
2017	K23	NIA	28	12	42.9%	\$2,217,597
2017	K23	NIAMS	21	7	33.3%	\$1,215,862
2017	K23	NIDCD	8	3	37.5%	\$545,821
2017	K23	NIMH	99	34	34.3%	\$6,369,327
2017	K23	NIDA	36	18	50.0%	\$3,421,780
2017	K23	NIAAA	8	2	25.0%	\$373,230
2017	K23	NINR	7	2	28.6%	\$292,128
2017	K23	NCCIH****	4	1	25.0%	\$163,890
2017	K23	Activity Total	641	218	34.0%	\$39,842,744

K25- Mentored Quantitative Research Development Award

- **For statisticians, chemists, engineers, physicists, computer scientists**
- **May be faculty-level scientists with little training in biology, medicine**
- **Must be willing to spend minimum of 75% FT professional effort on research career development and clinical research.**
- **Must be citizen, noncitizen national, or permanent resident (no temp or student visas)**
- **3-5 years of study, seminars, observation, mentored research**
- **NHLBI, NIA, NIAA, NIAID, NIGMS, NIDA, NIEHS, NIDCD, NIDDK, NICHD**

2017	K25	NCI	9	1	11.1%	\$157,167
2017	K25	NHLBI	10	7	70.0%	\$1,108,731
2017	K25	NIDCR	3	0	0.0%	\$0
2017	K25	NIDDK	3	0	0.0%	\$0
2017	K25	NIAID	4	1	25.0%	\$99,587
2017	K25	NIGMS	4	0	0.0%	\$0
2017	K25	NICHD	1	0	0.0%	\$0
2017	K25	NIEHS	2	1	50.0%	\$154,170
2017	K25	NIA	5	1	20.0%	\$150,676
2017	K25	NIDCD	1	0	0.0%	\$0
2017	K25	NIDA	1	0	0.0%	\$0
2017	K25	NIAAA	1	0	0.0%	\$0
2017	K25	NIBIB	7	1	14.3%	\$173,504
2017	K25	Activity Total	51	12	23.5%	\$1,843,835

What has been achieved?

- **Reduced time to R01? Sadly, no**
- **Gender equity. Yes, differentiated by application rates**
- **Increased odds of subsequent NIH funding? Yes**
- **Publication? Yes, K awardees have more pubs than non-awardees at same stage**
- **More involved in the scientific community? Yes, K awardees are highly engaged in scientific enterprise.**

Funding Outcomes

The aggregate success rates over all years to receive at least one grant were 44.4% for K08 PIs, 42.3% for K23 PIs, and 65.3% for K99 PIs.

Other K awards

- **K07 Academic Career Development Award.**

May be curriculum development, development of teacher scientist. Also related to research ethics. NIA only.

- **K22 Career Transition Award.**

Often intramural, but includes NIAID, NCI. Usually 2-3 years.

- **K76 Paul Beeson Emerging Leaders Career Development Award in Aging**

Like a K23 but better!

- **R50 NCI Research Specialist.**

Support to non-PI; stable research specialist, essential to lab operation such as core director, data scientist.

K12 awards at OHSU

- **OCTRI KL2**
- **BIRCWH K12 (Building interdisciplinary research careers in women's health)**
- **PCOR K12 (Patient-centered outcomes research)**
- **Learning health systems K12 (New!)**
- **Emergency medicine K12**
- **Women's reproductive health research K12**
- **Ophthalmology K12**

Institutional K12

- **Scholars selected by institution, program leadership**
- **Awards 2, 3, or 5 years of research training**
- **Could be considered a pre-K award**
- **Otherwise, fairly typical compared to individual K awards**
- **What follows a K12? Usually another K award (K01, K23, K08) but could be RPG**
- **Irregular application cycles. Watch blogs or talk with program directors or OCTRI**

Other CDA to consider

- **VA CDA1 and CDA2**
 - Somewhat more generous research costs
 - Helps one to get established within VA
- **NSF**
 - Faculty Early Career Development Program (CAREER)
 - Must be Asst Prof
 - No citizenship requirements
 - Minimum \$400K over 5 years; \$500K for biology, engineering, or polar research

Foundations, professional organizations

American Heart Association

- Up to Asst Professor (inclusive)
- ≤ 4 years since doctoral degree
- Can submit as a postdoc
- Citizenship includes many different visas

American Cancer Society

- Phasing out research scholar grants, now emphasizing clinical scientist development

American Diabetes Association

- Junior Faculty Development
- \$138K total, \$75K PI salary
- Up to Assistant Professor (inclusive)
- ≤ 10 years after terminal degree

Local Foundations

Medical Research Foundation of Oregon

- **These are often the first grants for new faculty**
- **Funding begets funding.....**

New Investigator Awards

- \$40K, can include some salary
- Should be at the beginning of an independent career

Early Career Investigator

- \$20K, can include some salary
- Postdoc or clinical fellows are eligible
- Must be clinical or translational research

And one more thing

Early Stage Investigator

- **This is for RPGs and not K awards**
- **NIH gives a score bonus on payline for early stage investigators who qualify**
- **Must have received the terminal research degree or have finished postdoc clinical training within 10 years**
- **Not every IC uses this policy**

Loan Repayment Program (LRP)