Ensuring A Healthy NIST For The Future

The People Perspective: A Presentation of Demographics and Workforce Issues

Overview

- Share current workforce demographics
  - Federal staff only
- Facilitate a discussion on workforce issues
  - Pose Specific Questions for Discussion
    - Relevant workforce data
    - Current HR flexibilities and challenges
- Our questions for today focus on capacity building
  - Compensation
  - Leadership Development
  - Balance in Skills

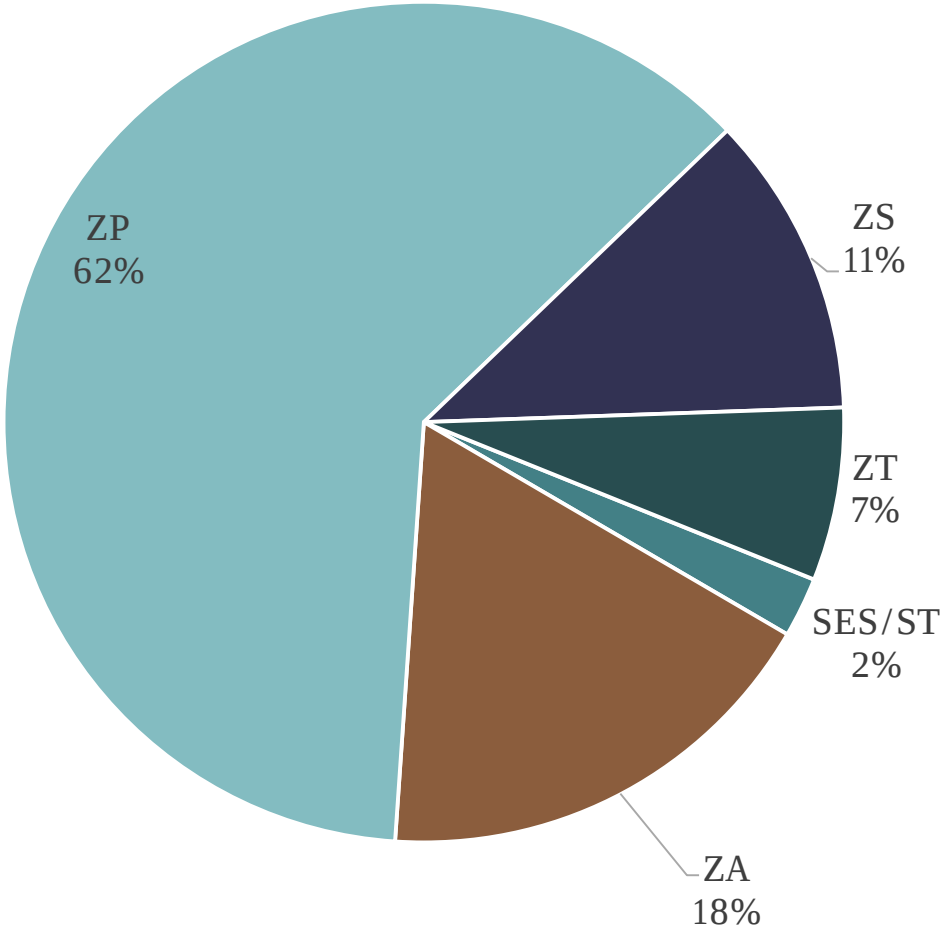
Our Questions

1. Is NIST still competitive for talent in terms of compensation?

2. How does NIST ensure we can recruit/develop the necessary talent to fill key management and leadership positions at NIST?

3. How does NIST ensure the right balance in skills to meet its core metrology mission and emerging national priorities?

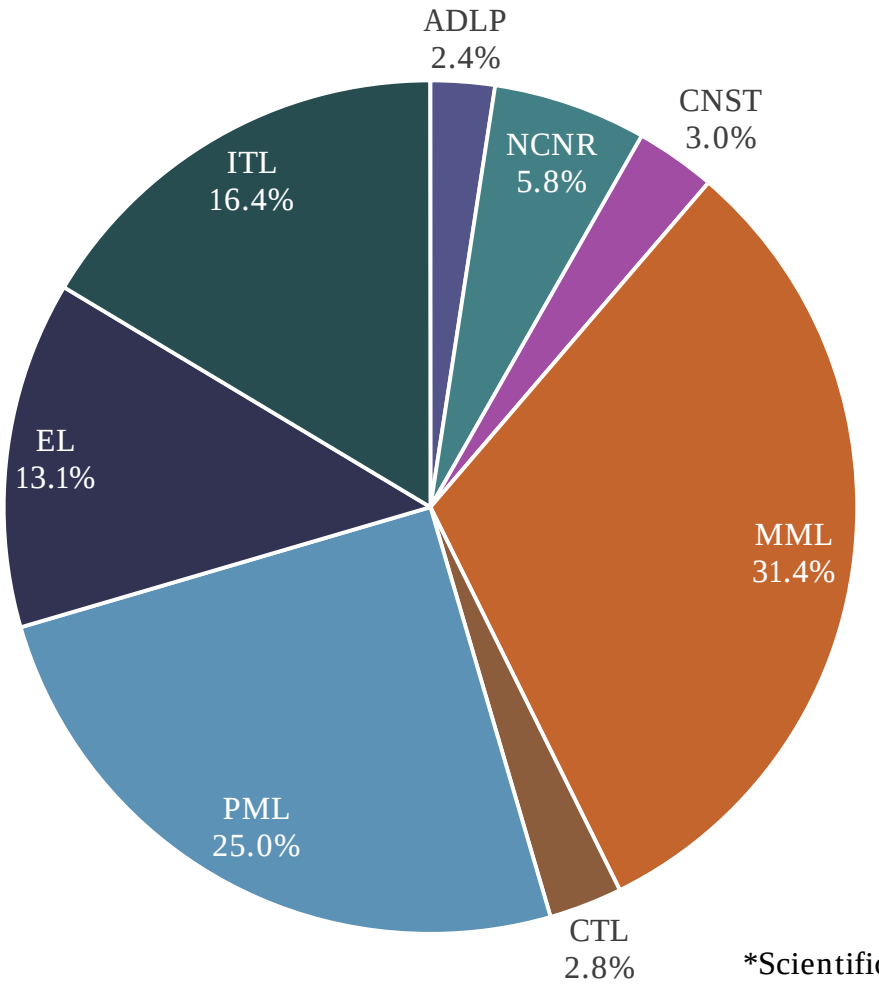
Federal NIST Workforce Today



ZP = Scientific and Engineering Professional
ZA = Administrative Professional
ZS = Administrative Support
ZT = Technical Support
SES/ST = Executive and Senior Technical Staff

*Excludes ~300 employees (Wage Grade, GS, Experts and Consultants)

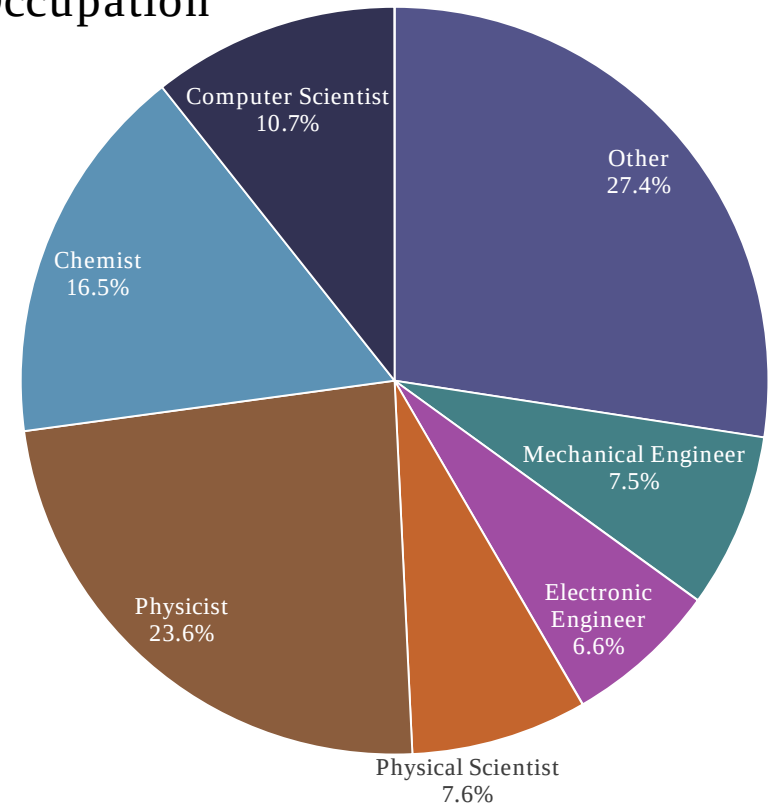
Technical Staff* by Laboratory



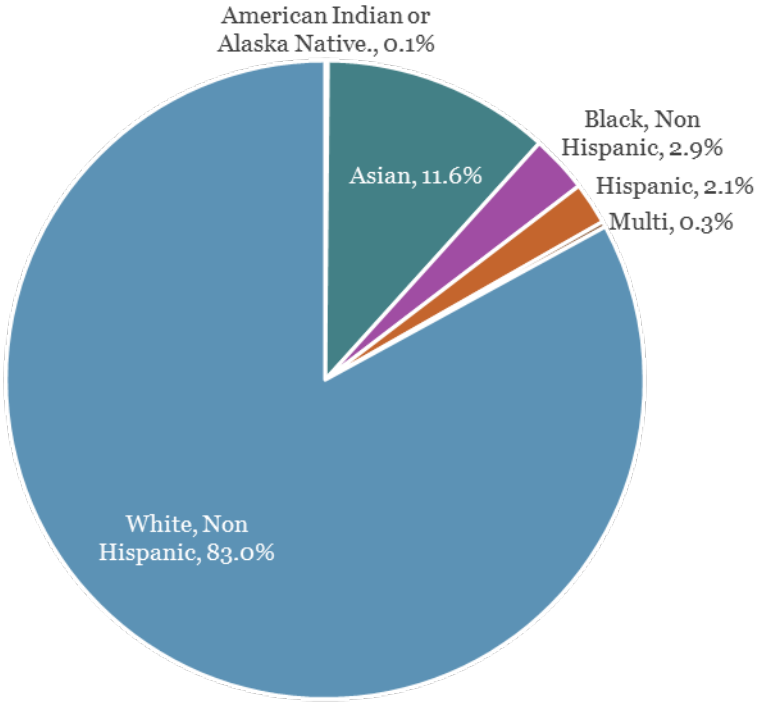
*Scientific and Engineering Professionals in Laboratory Programs
~1400 staff

Federal NIST Technical Staff

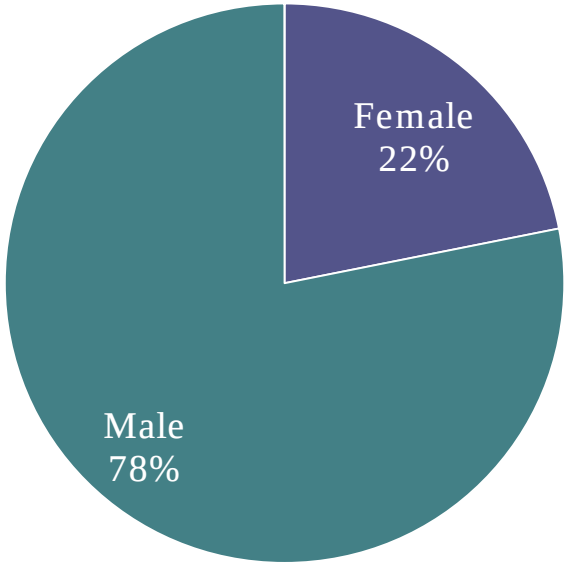
By Occupation



By Race and National Origin

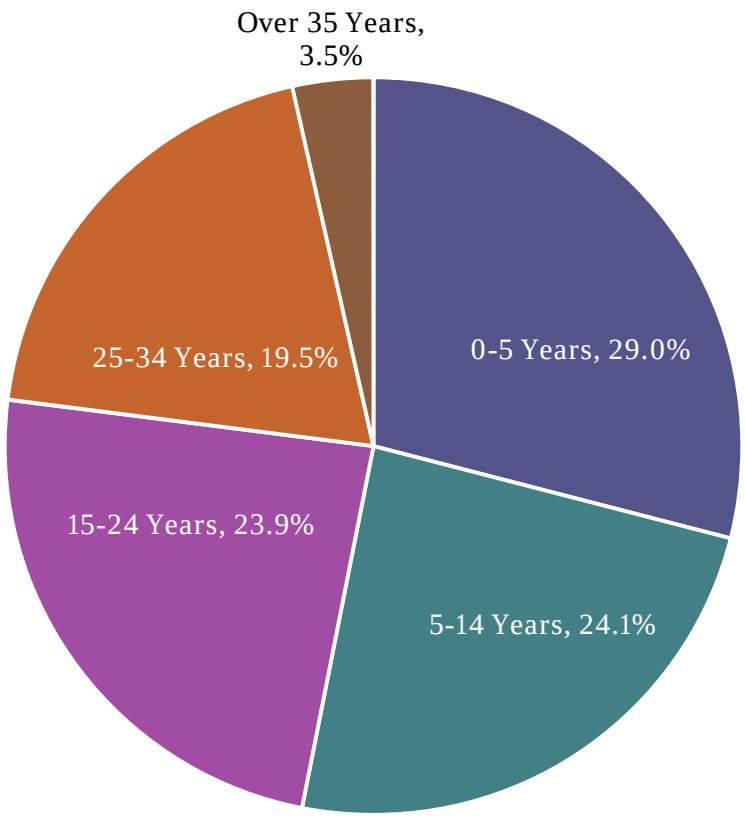


By Gender

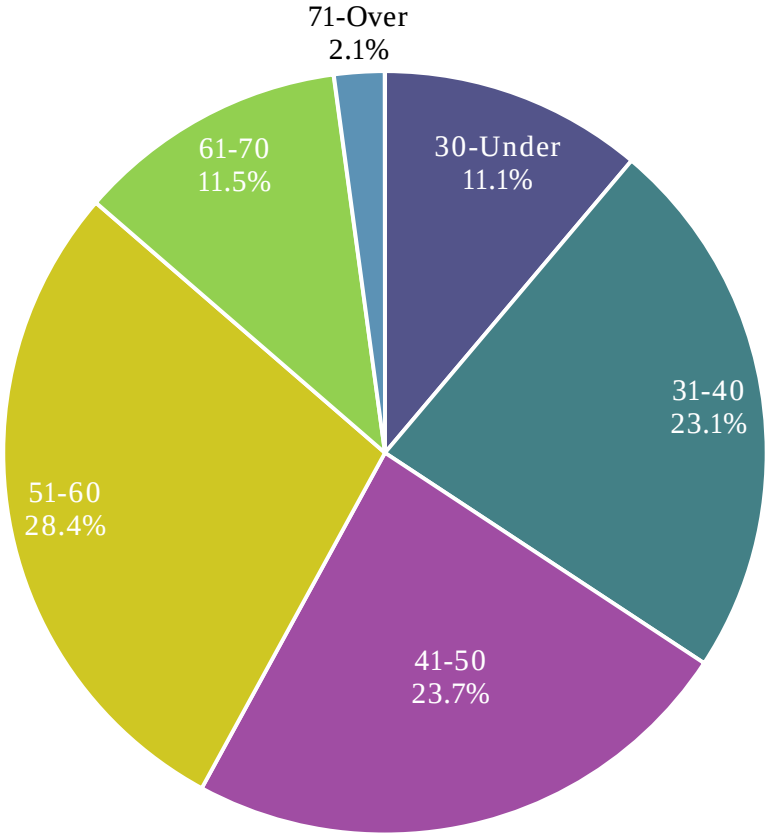


Federal NIST Technical Staff

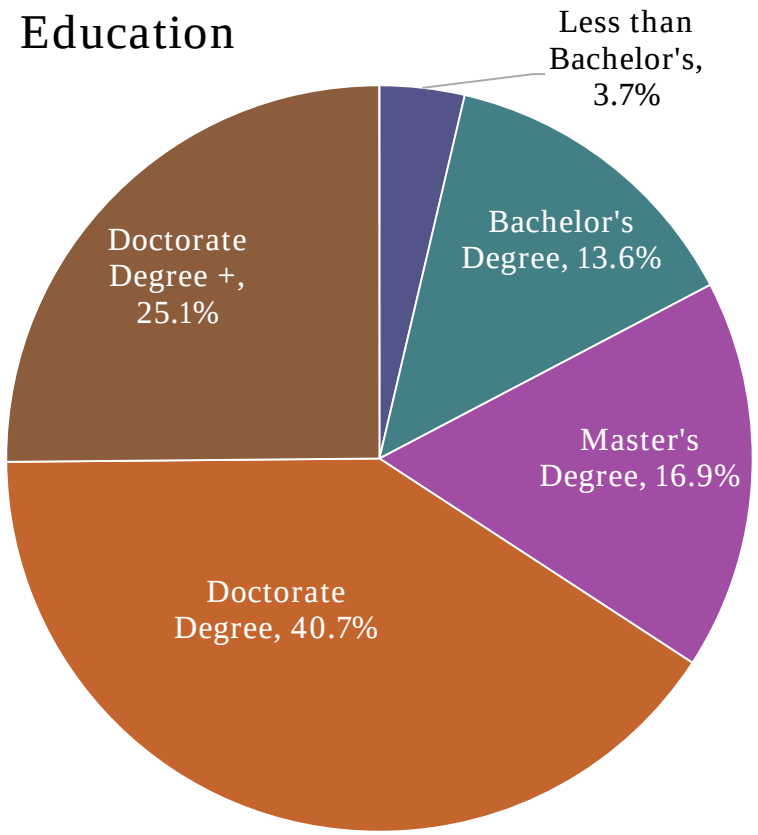
Duration of Federal Service

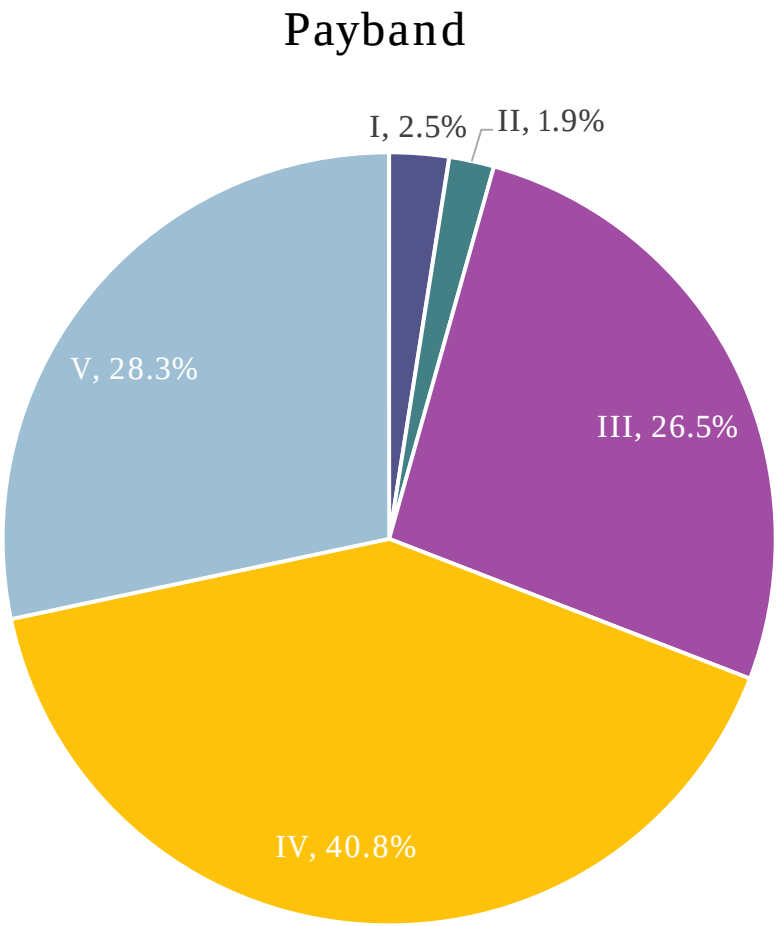


Age



Federal NIST Technical Staff





<u>Doctorate and beyond:</u>
Physicist = 90.6%
Chemist = 85.3%
Physical Scientist = 51.8%
Mechanical Engineer = 50.5%
Biologist = 48.5%
Electronics Engineer = 36.5%
Computer Scientist = 30.5%

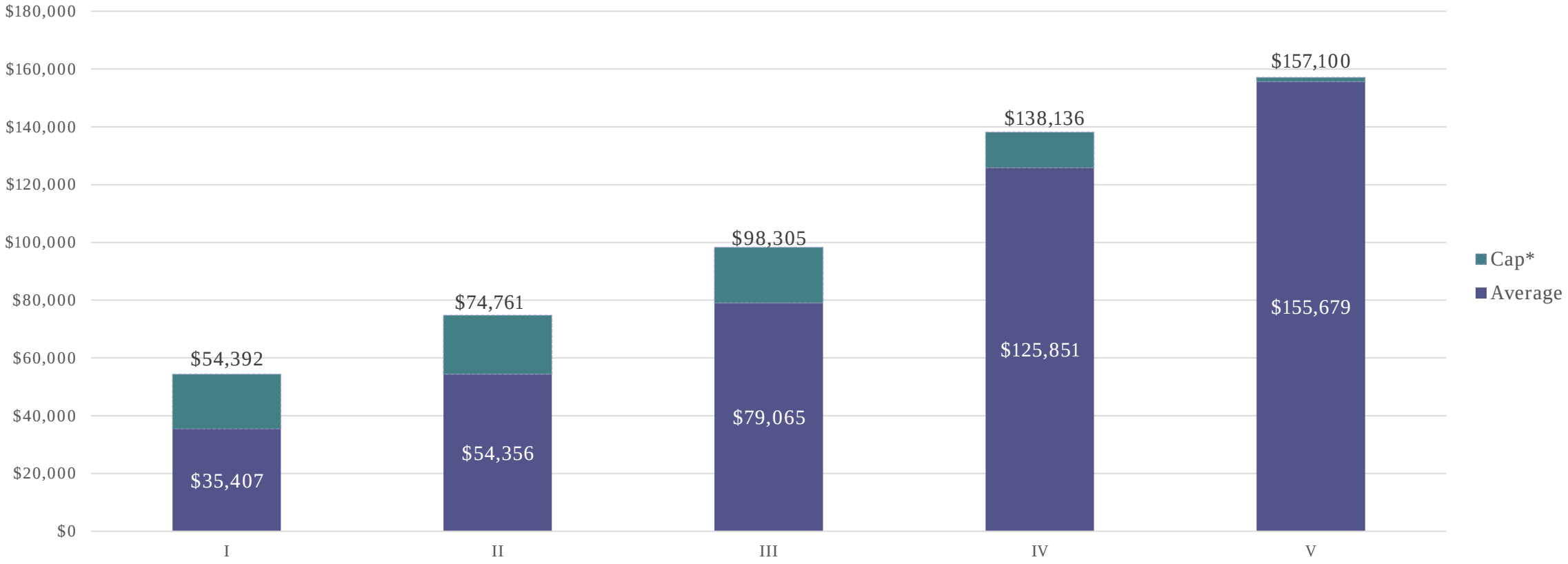
Initial Questions to Consider for the Future Health of the NIST Technical Staff

Question 1: Is NIST still competitive for talent in terms of Compensation?

Comparative Salary Information

- NIST has not conducted a rigorous compensation assessment in recent years
- Challenging to find salary data for similar positions and qualifications
- NIST salary structure suffers from compression at the top
- We have specific experiences where we know we are not competitive
  - Executive recruitment
  - Individual technical experts in some labs
    - Declined offers
    - Separations due to offers from industry or academia

Limited Room for Salary Growth



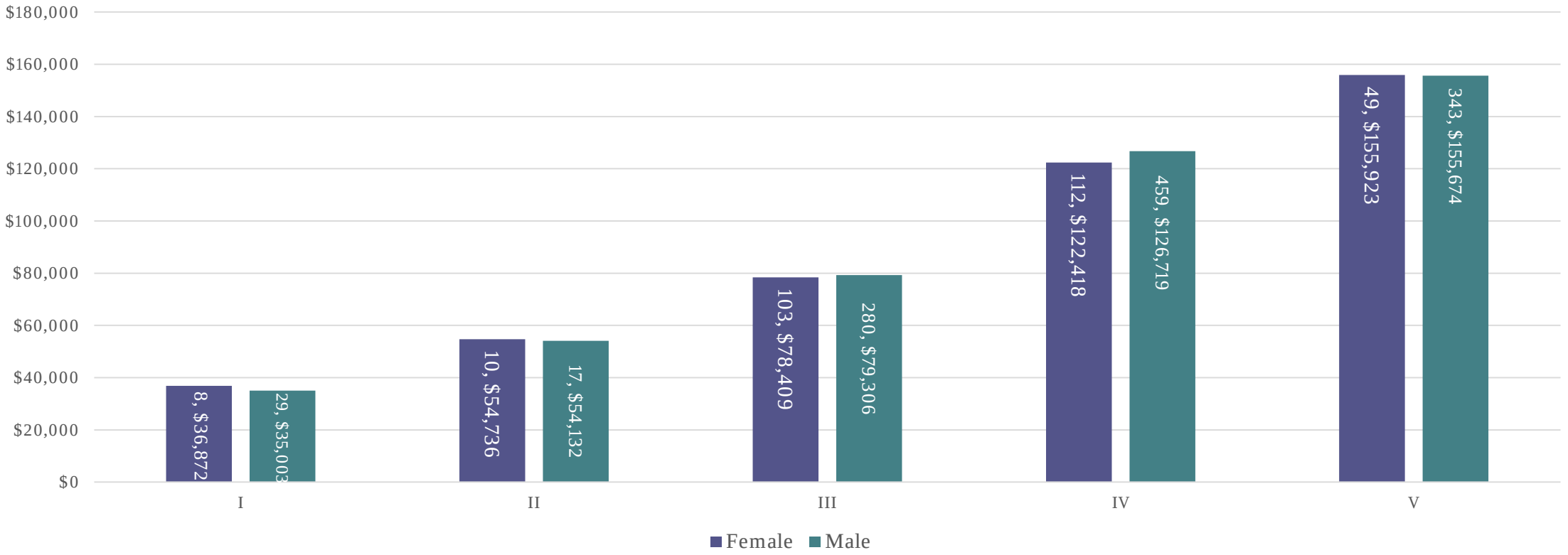
330 (80.7% of all Pay Band V's) are capped.
213 (36.3% of all Pay Band IV's) are capped. An additional 20 receive supervisory differential above the cap.

*Cap set for Gaithersburg Pay Scale

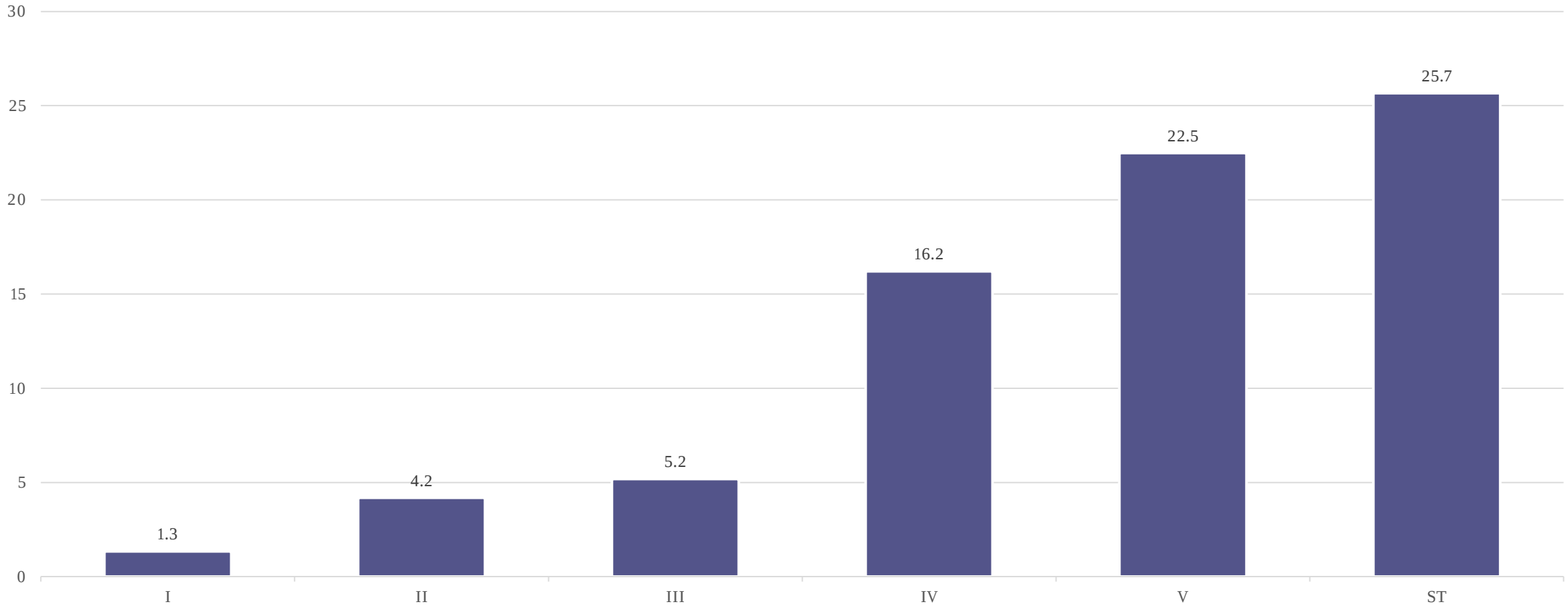
Table 57-2. Median annual salaries of full-time employed doctoral scientists and engineers, by field of doctorate and primary work activity: 2013
(Dollars)

Field	All full-time employed		Computer applications		Management, sales, or administration[a]		Professional services		Any R&D[b]		Teaching		Other work activity[c]	
	Median salary	SE	Median salary	SE	Median salary	SE	Median salary	SE	Median salary	SE	Median salary	SE	Median salary	SE
All fields	100,000	500	117,000	3,500	125,000	1,000	105,000	2,000	105,000	500	74,000	1,500	96,000	2,500
Science	98,000	1,000	115,000	3,500	120,000	500	104,000	2,000	100,000	1,000	71,000	1,500	90,000	2,000
Biological/ agricultural/ environmental life sciences	95,000	1,000	89,000	6,500	119,000	2,000	149,000	2,000	91,000	1,500	70,000	1,500	85,000	3,500
Agricultural/ food sciences	94,000	2,000	D	D	116,000	5,000	99,000	10,000	94,000	4,500	71,000	2,500	73,000	3,500
Biochemistry/ biophysics	101,000	3,000	78,000	6,500	130,000	5,500	157,000	12,500	100,000	3,000	73,000	2,500	88,000	6,000
Cell/ molecular biology	90,000	2,000	104,000	15,500	117,000	4,500	173,000	17,000	80,000	3,000	64,000	2,000	81,000	8,000
Environmental life sciences	84,000	2,000	D	D	104,000	6,500	D	D	84,000	3,000	71,000	4,000	98,000	11,000
Microbiology	98,000	2,500	D	D	117,000	8,000	178,000	22,500	99,000	3,500	69,000	4,500	84,000	9,000
Zoology	89,000	4,000	D	D	106,000	5,500	129,000	50,000	91,000	7,000	64,000	2,500	62,000	28,500
Other biological sciences	94,000	2,000	88,000	8,500	119,000	2,500	139,000	8,000	90,000	1,500	69,000	2,000	85,000	6,000
Computer/ information sciences	120,000	500	126,000	3,500	150,000	6,000	D	D	126,000	3,000	86,000	2,000	107,000	8,500
Mathematics/ statistics	98,000	2,500	118,000	3,500	138,000	12,000	125,000	26,000	108,000	5,500	70,000	1,500	101,000	6,500
Physical sciences	106,000	2,000	113,000	7,000	130,000	3,000	132,000	8,000	110,000	500	70,000	2,000	91,000	6,500
Astronomy/ astrophysics	93,000	6,000	116,000	30,500	117,000	10,000	D	D	99,000	6,500	69,000	4,500	D	D
Chemistry, except biochemistry	106,000	2,000	105,000	8,500	127,000	3,500	132,000	9,000	110,000	1,500	67,000	2,000	85,000	8,000
Earth/ atmospheric/ ocean sciences[d]	100,000	2,500	107,000	11,500	115,000	6,000	103,000	28,500	104,000	2,000	75,000	5,000	90,000	13,000
Physics	111,000	3,000	120,000	4,500	144,000	6,000	185,000	13,500	111,000	3,000	72,000	3,500	108,000	9,500
Psychology	90,000	500	107,000	4,000	103,000	3,000	92,000	1,500	93,000	3,000	70,000	1,000	90,000	9,500
Social sciences	91,000	1,500	97,000	8,000	119,000	3,000	119,000	6,500	103,000	2,000	74,000	1,500	86,000	6,000
Economics	120,000	3,500	108,000	12,000	153,000	6,000	154,000	23,500	129,000	4,000	90,000	2,500	102,000	8,000
Political sciences	88,000	2,500	D	D	114,000	10,500	111,000	16,500	100,000	4,000	71,000	2,500	85,000	9,000
Sociology	83,000	2,500	D	D	108,000	5,500	105,000	42,500	94,000	2,500	70,000	1,500	97,000	18,500
Other social sciences	80,000	1,500	89,000	7,500	99,000	4,000	80,000	9,500	88,000	3,000	69,000	1,500	62,000	8,500
Engineering	120,000	500	120,000	2,000	144,000	3,000	133,000	12,000	115,000	2,000	90,000	1,500	109,000	6,500
Aerospace/ aeronautical/ astronautical engineering	129,000	5,500	122,000	29,000	158,000	11,000	D	D	118,000	5,000	D	D	D	D
Chemical engineering	121,000	3,000	111,000	16,000	149,000	4,500	119,000	25,500	115,000	5,500	83,000	9,000	112,000	11,500
Civil engineering	104,000	3,500	134,000	27,000	133,000	9,000	123,000	21,500	99,000	2,500	92,000	5,500	99,000	2,000
Electrical/ computer engineering	128,000	2,500	124,000	5,000	150,000	6,500	212,000	34,000	125,000	3,000	93,000	6,000	110,000	15,000
Materials/ metallurgical engineering	119,000	2,500	108,000	11,000	143,000	8,500	D	D	110,000	4,000	68,000	9,500	125,000	17,000
Mechanical engineering	110,000	3,000	100,000	5,500	135,000	5,000	118,000	12,500	109,000	2,000	83,000	7,000	102,000	8,500
Other engineering	110,000	1,500	109,000	10,500	130,000	2,500	121,000	12,500	107,000	2,500	92,000	4,000	104,000	2,000
Health	97,000	2,500	81,000	11,000	119,000	2,500	99,000	4,000	100,000	2,500	78,000	2,000	111,000	17,000

ZP Average Salary by Pay Band and Gender

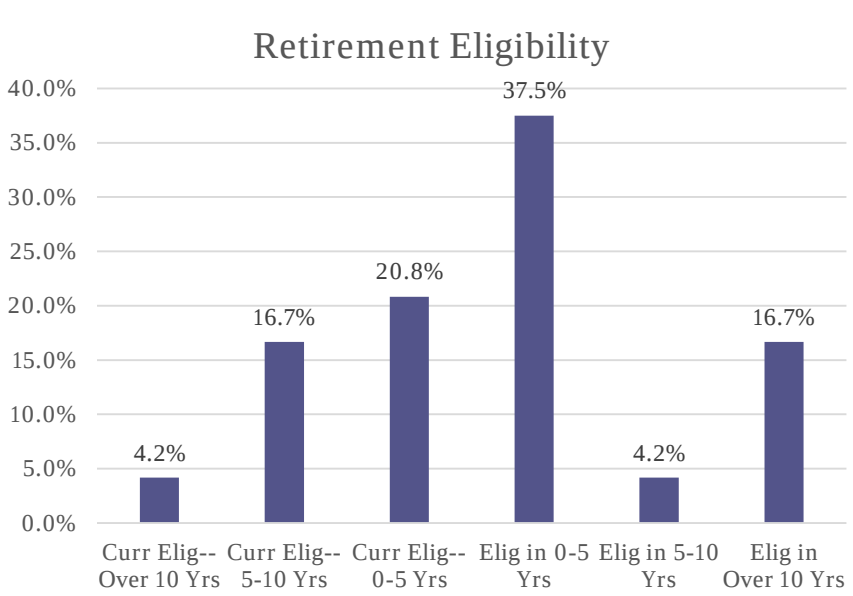


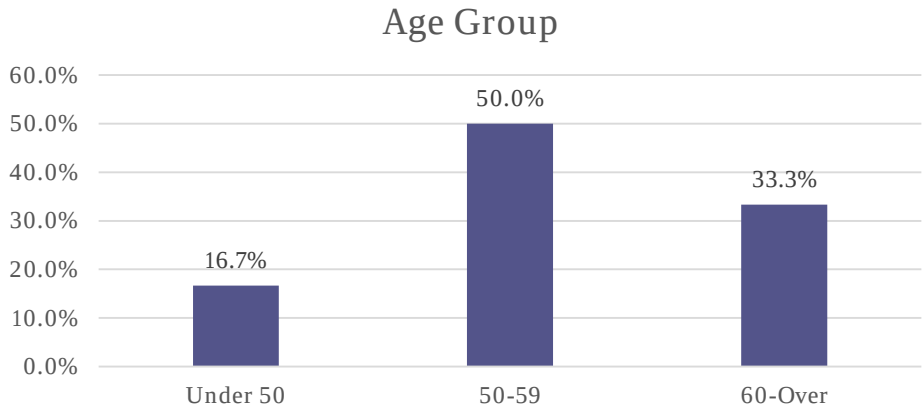
Average Federal Career Duration

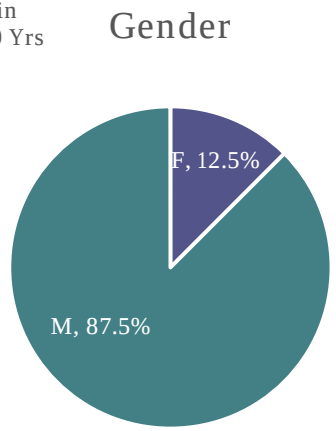


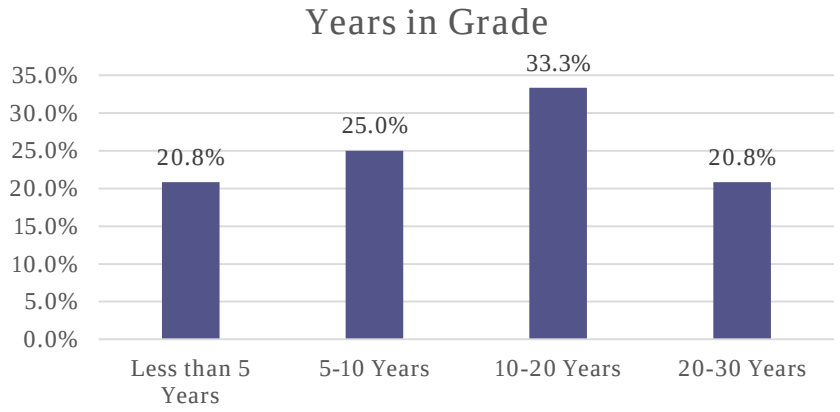
Question 2: How does NIST ensure we can recruit/develop the necessary talent to fill key management and leadership positions?

Division Chief Demographics

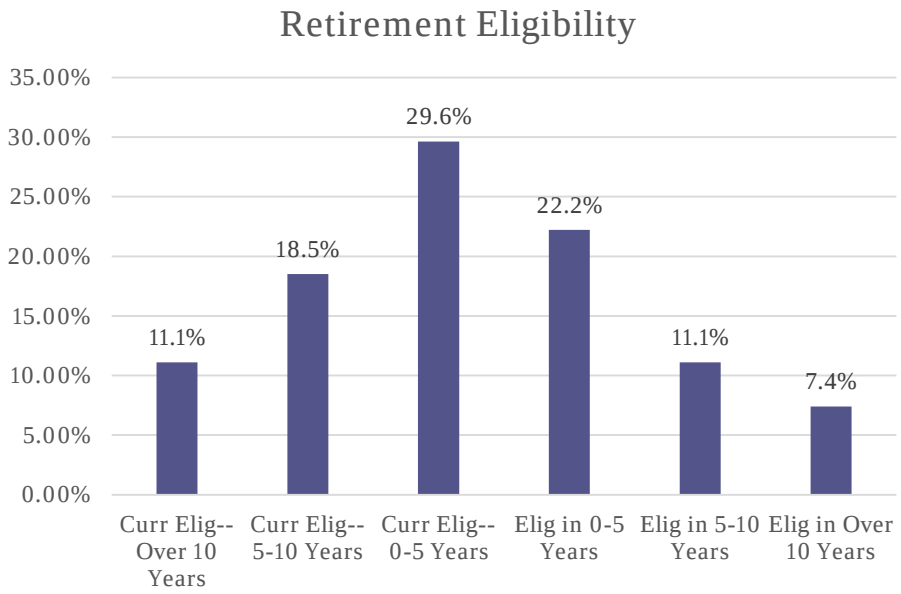


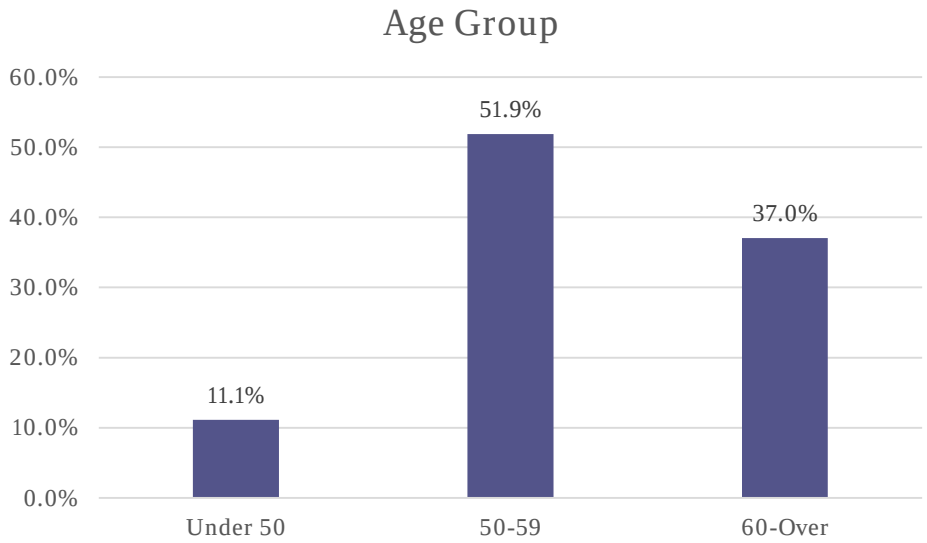


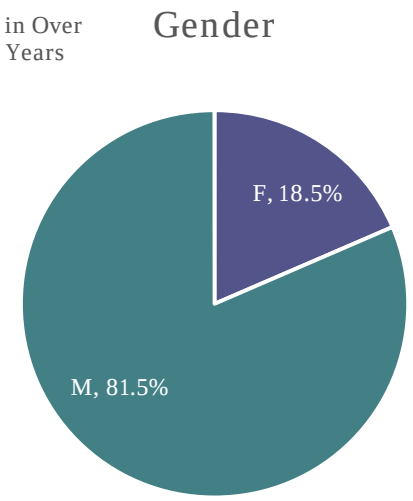


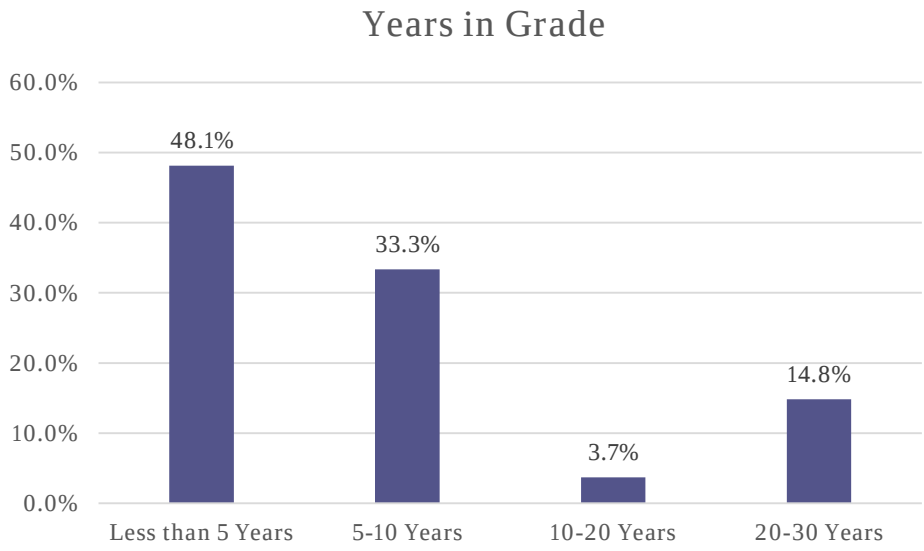


SES Demographics









In the last 4 years, 8/10 SES selections were internal candidates

Leadership Development Programs

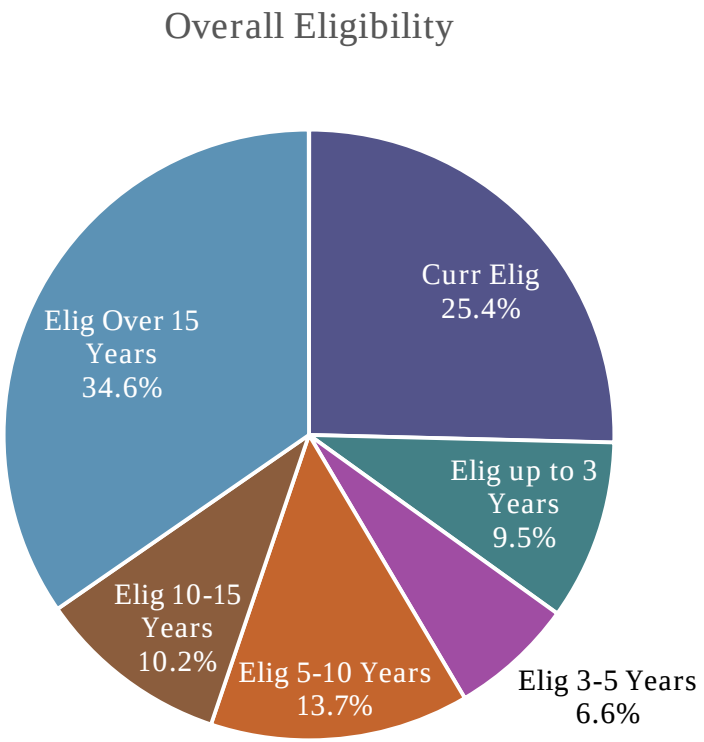
- NIST has two primary internal programs
  - Foundations of Leadership Program
    - Early to Mid-Career Aspiring Leaders
  - New Leader Program
    - New Supervisors
- Program graduates in management positions
  - 23% of current division chiefs graduated from these programs
  - 7.4% of current executives graduated from these programs

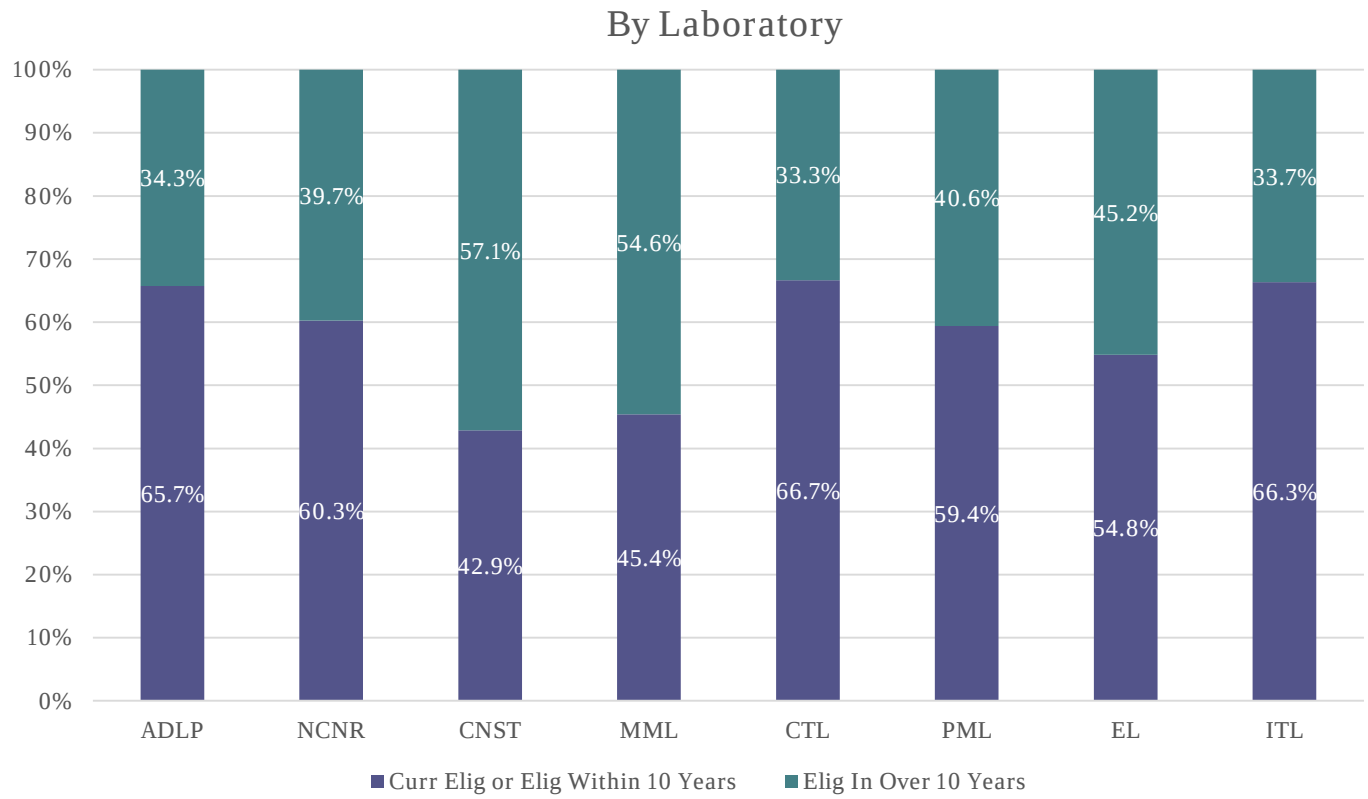
Question 3: How does NIST ensure the right balance in skills to meet its core metrology mission and emerging national priorities?

Direct Hire Recruitment

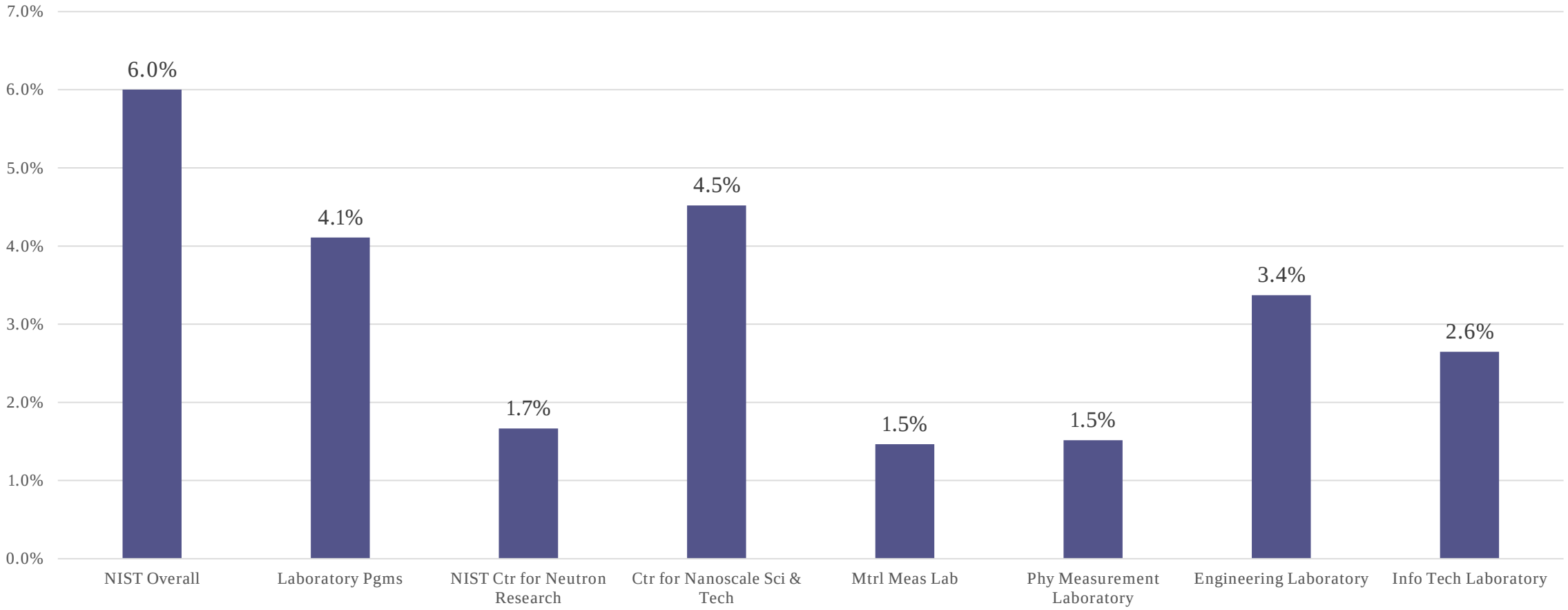
	FY 11	FY 12	FY 13
# Direct Hire Actions	34 (62%)	54 (93%)	101 (80%)
Average Time to Offer	26.7 Days	28.8 Days	31.0 Days
Average Time to Hire	36.8 Days	52.9 Days	53.0 Days
Hiring Manager Satisfaction with Process	Not available	8.5/10	8.3/10

Retirement Eligibility

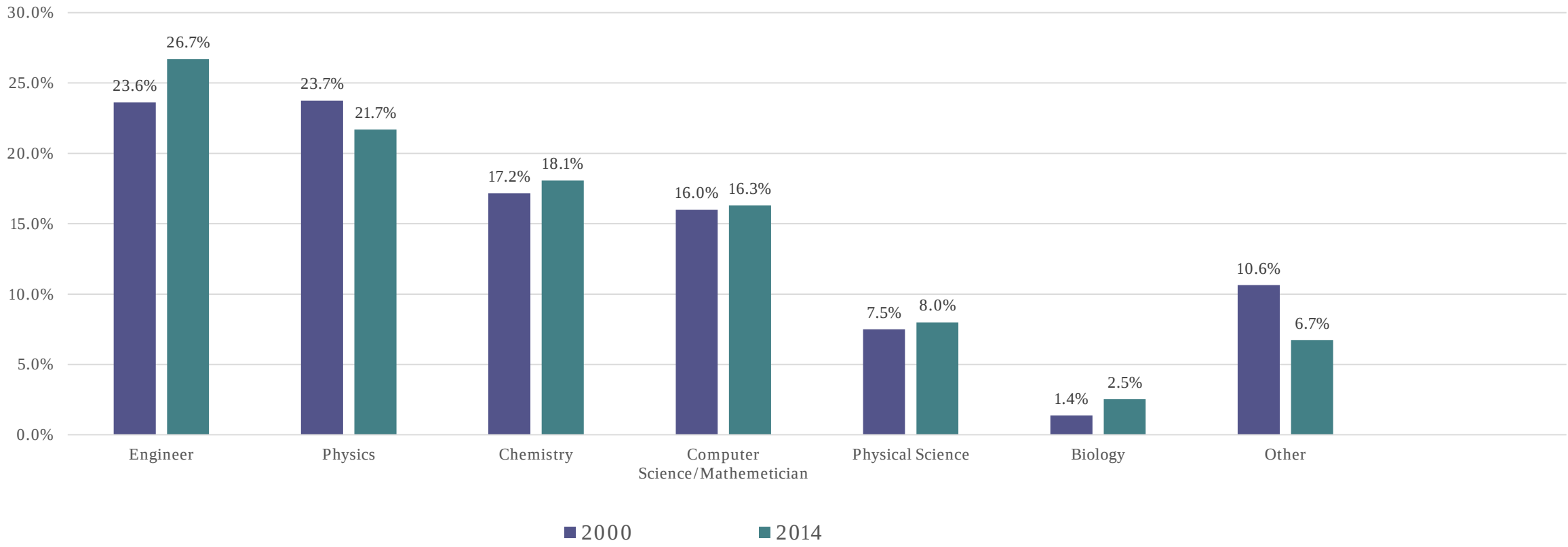




Average Voluntary Attrition Rates by Laboratory FY 11-FY 13



NIST Staff by Technical Discipline- 2000 and 2014



Thank You

Background and Additional Slides

BLS data and NIST data

	NIST Alternative Personnel Management System (APMS) ZP Pay Plan Ranges (for Gaithersburg, MD)				
	ZP I	**ZP II**	**ZP III**	**ZP IV**	**ZP V**
Min	$22,336	$42,631	$63,091	$89,924	$124,995
Max	$54,392	$74,761	$98,305	$138,136	$157,100
	Industry Percentiles				
	10%	**25%**	**50% (Median)**	**75%**	**90%**
Physicist	$55,150	$80,460	$110,110	$142,880	$181,840
Chemist	$41,350	$52,850	$72,350	$97,100	$122,830
Electronics Engineer	$60,600	$74,590	$94,250	$117,040	$144,760
Mechanical Engineer	$52,550	$65,370	$82,100	$102,770	$123,340
Computer and Information Research Scientist	$61,300	$83,210	$106,290	$129,750	$158,800

2014 Alternative Personnel Management System

Washington-Baltimore-Northern Virginia, DC-MD-PA-VA-WV

CAREER PATH

SCIENTIFIC AND ENGINEERING — PAY PLAN: ZP

Pay Band	Minimum	Maximum	Supervisory pay ceiling	Corresponding GS Grades
I	$22,336	$54,392	$57,705	1–6
II	$42,631	$74,761	$79,314	7–10
III	$63,091	$98,305	$104,292	11–12
IV	$89,924	$138,136	$146,548	13–14
V	$124,995	$157,100	$157,100	15

SCIENTIFIC AND ENGINEERING TECHNICIAN — PAY PLAN: ZT

Pay Band	Minimum	Maximum	Supervisory pay ceiling	Corresponding GS Grades
I	$22,336	$39,984	$42,420	1–4
II	$34,415	$61,377	$65,115	5–8
III	$52,146	$74,654	$79,201	9–10
IV	$63,091	$98,305	$104,292	11–12
V	$89,924	$116,901	$124,020	13

ADMINISTRATIVE — PAY PLAN: ZA

Pay Band	Minimum	Maximum	Supervisory pay ceiling	Corresponding GS Grades
I	$22,336	$49,867	$52,904	1–6
II	$42,631	$74,654	$79,201	7–10
III	$63,091	$98,305	$104,292	11–12
IV	$89,924	$138,136	$146,548	13–14
V	$124,995	$157,100	$157,100	15

ADMINISTRATIVE SUPPORT — PAY PLAN: ZS

Pay Band	Minimum	Maximum	Supervisory pay ceiling	Corresponding GS Grades
I	$22,336	$31,600	$33,524	1–2
II	$27,400	$39,984	$42,420	3–4
III	$34,415	$49,867	$52,904	5–6
IV	$42,631	$61,377	$65,115	7–8
V	$52,146	$74,654	$79,201	9–10

Corresponding GS Grade: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Footnotes:

Supervisory pay ceiling for each pay band shown is in upper right-hand corner.

ZP and ZA, Pay Band V, pay ceiling for supervisors below Division Chief, $157,100 , Division Chiefs' pay ceiling $157,100

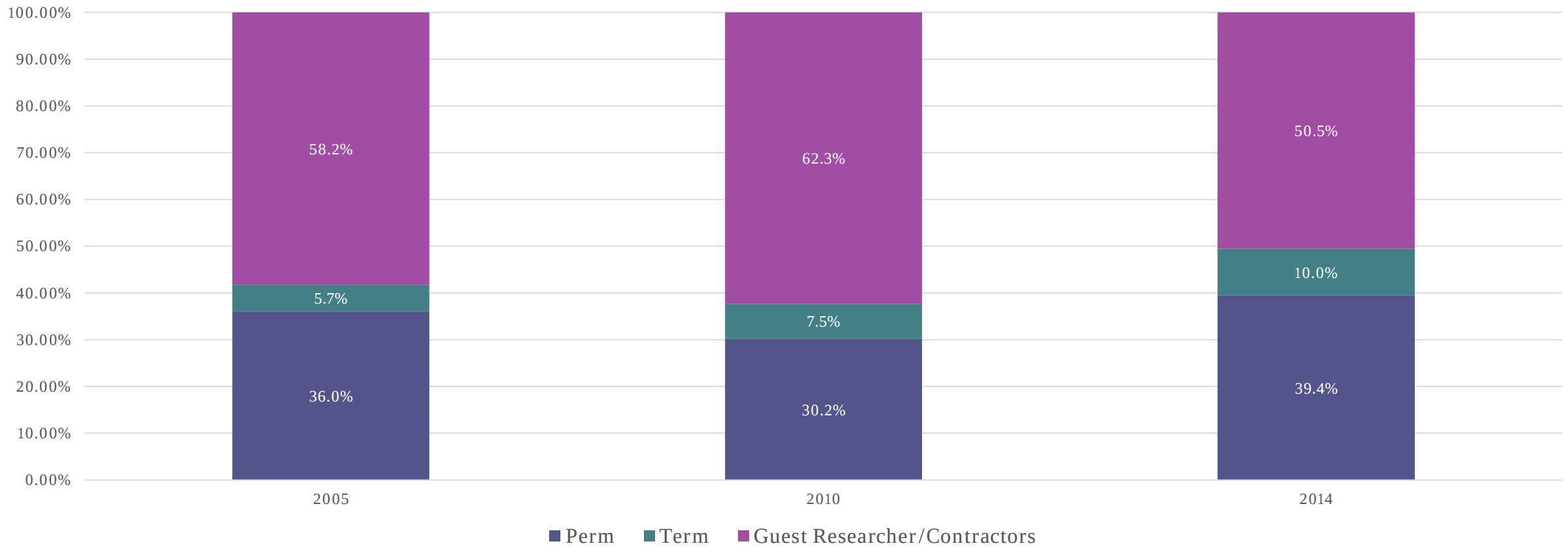
The GS-15, step 10, biweekly gross maximum pay limitation for 2014 is $ 6022.40

2013 rate	2014 rate	NIST Locality Increase Differential
24.22	24.22	1.2422 / 1.2422 = 1

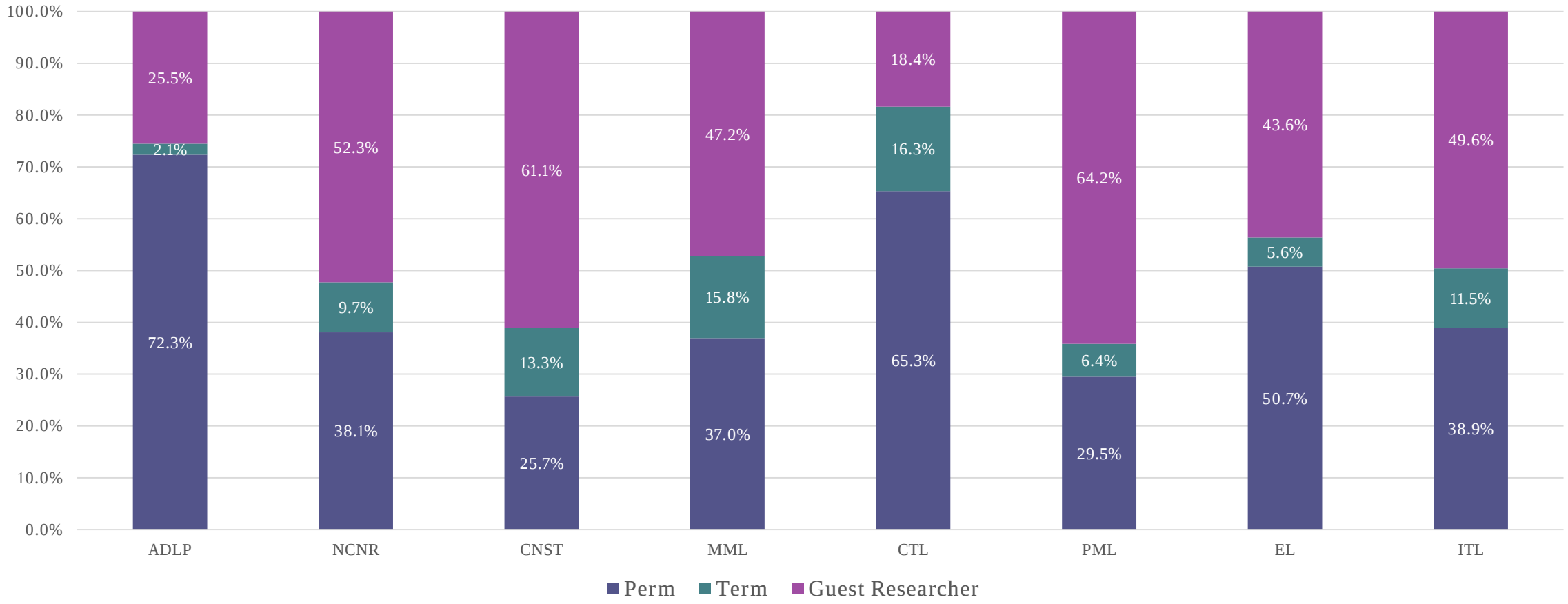
Attrition Rates by Laboratory

	2011	2012	2013
NIST Ctr for Neutron Research	2.5%	0.0%	2.5%
Ctr for Nanoscale Sci & Tech	7.5%	6.1%	0.0%
Mtrl Meas Lab	1.8%	0.5%	2.1%
Phy Measurement Laboratory	1.6%	1.6%	1.4%
Engineering Laboratory	2.6%	3.9%	3.6%
Info Tech Laboratory	2.4%	3.1%	2.5%

NIST Composite Workforce



Composite Workforce by Laboratory



Average Salary by Career Path