INL/MIS-22-68761-Revision-0



# INL Workforce Projections

August 2022

Hope Marie Morrow

Changing the World's Energy Future


*INL is a U.S. Department of Energy National Laboratory operated by Battelle Energy Alliance, LLC*

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# INL Workforce Projections

**Hope Marie Morrow**

**August 2022**

**Idaho National Laboratory**
**Idaho Falls, Idaho 83415**

**http://www.inl.gov**

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**U.S. Department of Energy**
**Under DOE Idaho Operations Office**
**Contract DE-AC07-05ID14517**

July 2022

**Hope Morrow**
Lead, Workforce Development
Labor Economist

# INL Workforce Projections

## *5-Year Lab-Wide Occupation Growth and Replacement Estimates*

Battelle Energy Alliance manages INL for the
U.S. Department of Energy's Office of Nuclear Energy

Idaho National Laboratory

# Strategic growth



In order for INL to change the world's energy future,
we are taking a **strong, strategic look** at our own future.

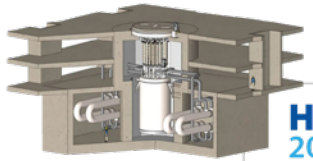
All areas of the lab are growing and with an unwaveringly tight labor market,
**proactive workforce development** is more important than ever!

# Accelerating advanced reactor demonstration & deployment

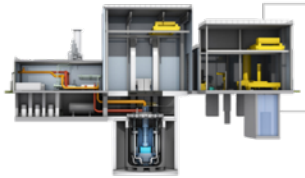
**DOME TEST BED**
2024 | NRIC

**PROJECT PELE MICROREACTOR**
2023-2024 | DOD

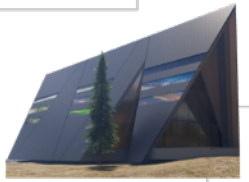
**HERMES**
2026 | KAIROS



**NATRIUM® REACTOR**
2028 | TERRAPOWER & GE

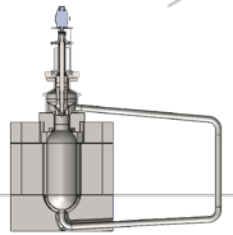


**AURORA**
2025 | OKLO

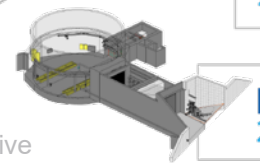


**MARVEL**
2023-2024 | DOE

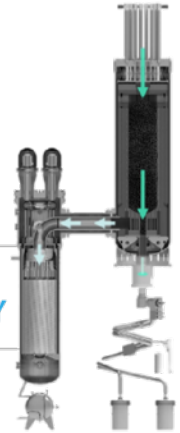
**MCRE**
2025 | SOUTHERN CO. & TERRAPOWER



**LOTUS TEST BED**
2025 | NRIC

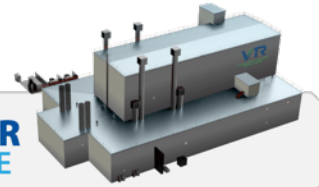


**Xe-100**
2027 | X-ENERGY



**VOYGR®**
2029 | UAMPS & NuScale

**VTR**
DOE




2023 2024 2025 2026 2027 2028 2029 2030

# INL's Research Mission Areas

## Energy & Environment S&T

- Advanced transportation
- Environmental sustainability
- Clean energy
- Advanced manufacturing
- Biomass
- Integrated Energy Systems

## National & Homeland Security S&T

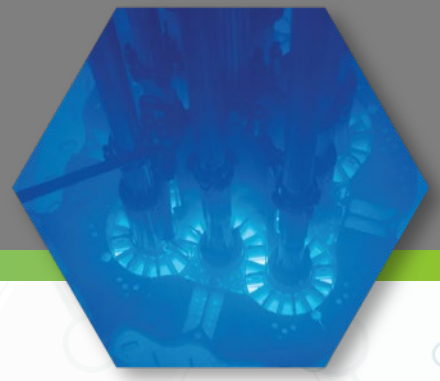
- Critical infrastructure protection and resiliency
- Nuclear nonproliferation
- Physical defense systems

## Nuclear S&T

- Nuclear fuels and materials
- Nuclear systems design and analysis
- Fuel cycle science and technology
- Nuclear safety and regulatory research
- Advanced Scientific Computing

## Materials & Fuels Complex

- Transient testing
- Analytical laboratories
- Post-irradiation examination
- Advanced characterization
- Fuel fabrication
- Space nuclear power and isotope technologies



## Advanced Test Reactor

- Steady-state neutron irradiation of materials and fuels
  - Naval Nuclear Propulsion Program
  - Industry
  - National laboratories and universities

# Enabling Areas – Operations and Success Services





## Engagement

- Government Affairs
- Communications
- National University Programs
- Industry Engagement
- K-12 STEM
- Workforce Development
- Economic Development
- Community Engagement

## Business and Human Resources

- Accounting
- Finance
- Procurement
- Benefits
- Inclusions and Diversity
- Talent Acquisition

## Environment, Safety, Health & Quality

- Occupational Health and Safety
- Medical
- Employee Assistance Program
- Cultural Resources
- Radiation Control
- Emergency Management

## Facilities and Site Services

- Maintenance
- Transportation
- Fire Department
- Electrical Grid
- Labor Support
- Design/Drafting

## Safeguards and Security

- Human Performance Improvement
- Protective Force (Guards)
- Emergency Communications
- Training
- Performance tests
- Security Systems

# Data-Driven Internal Connectivity and Understanding

## *Workforce Development Team*

### Training
- Collaborating in the cyber efforts both industrial and research focused
- Connecting foreseeable workforce demand needs with internal training professionals

### Labor Relations
- Re-examining apprenticeship programs and looking at alternative workforce development pipelines

### Human Resources
- Informing on future talent acquisition demand
- Gives a basis for demand planning across orgs, particularly between mission orgs and support orgs through the Business Partners

### Governmental Affairs
- Engaging with the Workforce Development Council, Idaho Department of Labor, Idaho Policy Institute and others to inform on regional and lab wide workforce demand.

### Organization Leadership
- Using the workforce demand data as a basis to discuss workforce development pipeline opportunities and preferences for each organization

### Regional & Community Workforce Development
- Providing workforce projections, labor market analysis, and research.
- Aligning community college programs to drive expansion pipeline across all disciplines.

### Project Management
- Providing data and insight to better educate cost estimators on market conditions, workforce demand, and the state of the economy now and future

### National University Programs
- Prioritizing universities of interest and highlighting occupations of demand to relay to student bodies
- Sharing to inform studies for student enrollment and program development with universities

### K-12 STEM
- Highlighting areas to engage K-12 students
- Aligning CTE offerings with workforce demand and highlighting shortcomings

# Understanding Demand Helps Us:

**Talent Pipeline Plan**
Collaborate with community and education leadership (K-career) to build capability through grants, programs, capacity.

**Succession Plan**
Designate a plan for retirees and new positions.

**Strategically Recruit Talent**
Focuses efforts through information on positions, head count, timing.

**Forecast and Assess**
Internal/external supply and demand; labor costs; company growth rates; and company revenue.

**Build Subcontractor and Labor Partnerships**
Insight to determine make vs buy and strategy to build regional pipelines to support internal and external staff needs.

**Capture Internal Workforce Development Opportunities**
Develop current workforce to fill key areas. Up-training priorities to navigate retention strategies and internal transferring.

**Keep Updated Metrics**
Ongoing updates determine the effectiveness of workforce planning.

# How Statistical Analysis and Qualitative Knowledge Work Together

1. Combine historical hiring and attrition data from FY16-FY20 and department financial data, provide to hiring managers for baseline.
2. Hiring managers provide estimated openings, by WDC, for both anticipated growth and attrition (voluntary leaves and retirement).
3. Data is collected, aggregated and sent out for a final adjustment phase.
4. Regression model analysis, capturing growth potential by work family, is run alongside staff plans and adjusted as needed.
5. Regression model analysis, capturing potential voluntary leaves attrition is run alongside staff plan data and adjusted if needed.
6. Age demographics analysis is run alongside data and indicators of retirement waves are specified on data presentation.

# Data Parameters

**Timeline:**

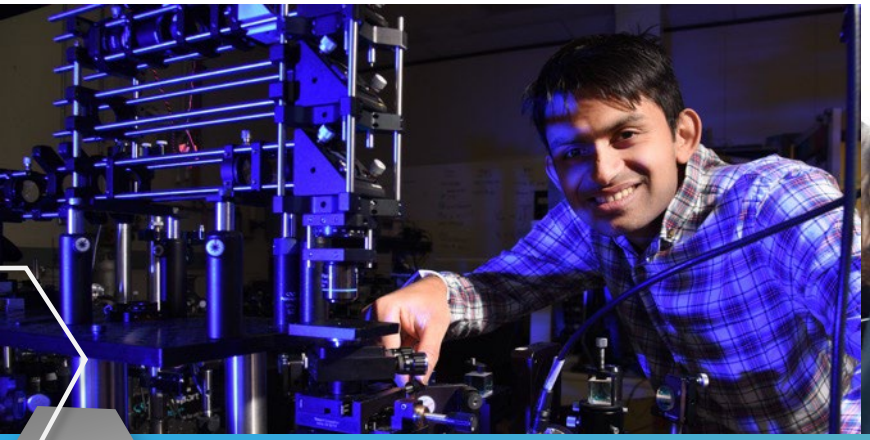
- FY2022 – FY2026

**Annual Data Collection, Aggregation and Analysis:**

- **FY** – *anticipated Fiscal Year for the position opening*
- **New Position/Replacement** – *indicate if this position is a new position or a replacement of a vacant position*
- **Funding Type and Source**
- **Job Code, Title, Organization, & Appointment Type**
- **Job Level** *(Required and Preferred)*
- **Education Requirement** *(Required and Preferred)*
- **Priority Type** –
  1. This position has secure funding and a determined position description critical to mission deployment
  2. This position has secure funding and is of benefit to mission but not critical
  3. This position has questionable or uncertain funding and the mission need is unclear in current conditions but indicated as a future need

These are full-time INL employment opportunities. Future construction positions associated with these organizations, other part-time and contracted positions are not counted here.

# Work Families



For these purposes, occupations and projected hires will be categorized generally by work discipline, ***including:***

- Facility Services / Operations
- Specialty Occupations
- Managerial
- Engineering
- Science
- Computer Engineering / Information Systems
- Business Services
- Technician
- Union Trade

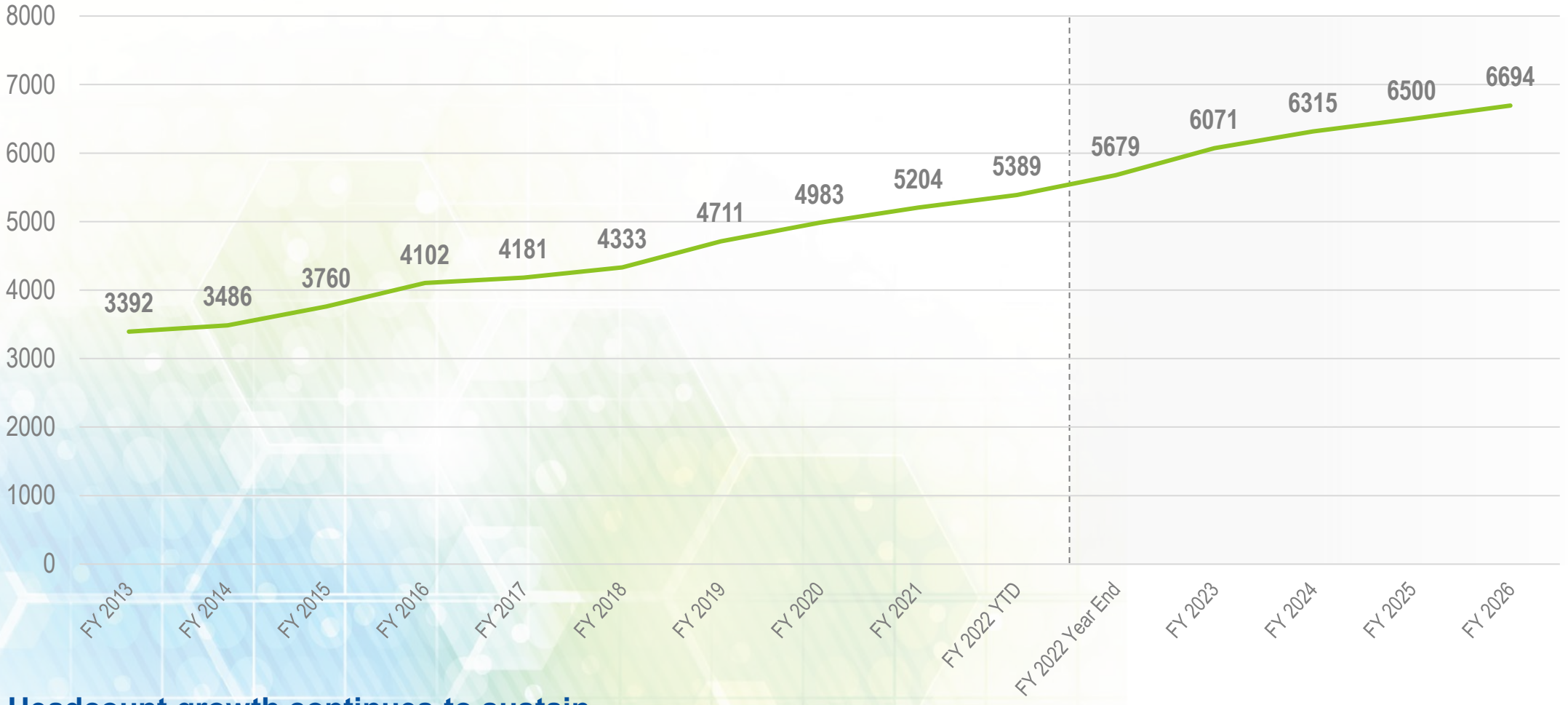
# Annual Projected Openings

## ***2,853*** *Total Anticipated Openings*

| Openings | FY22 | FY23 | FY24 | FY25 | FY26 | Grand Total |
|---|---|---|---|---|---|---|
| New Position | 456 | 377 | 239 | 183 | 189 | 1444 |
| Replacement | 441 | 269 | 270 | 256 | 173 | 1409 |
| Grand Total | 897 | 646 | 509 | 439 | 362 | 2853 |

These openings include **research** and **enablement** positions depicting workforce needs that range vastly in ***educational levels***, ***experience*** and ***background***.

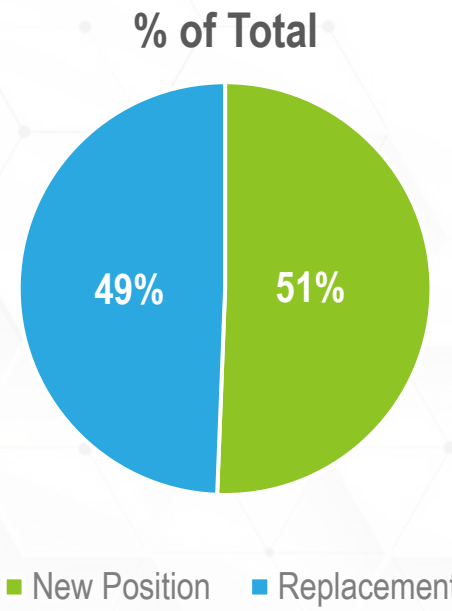
# Headcount Growth Reflects Growth of the Laboratory

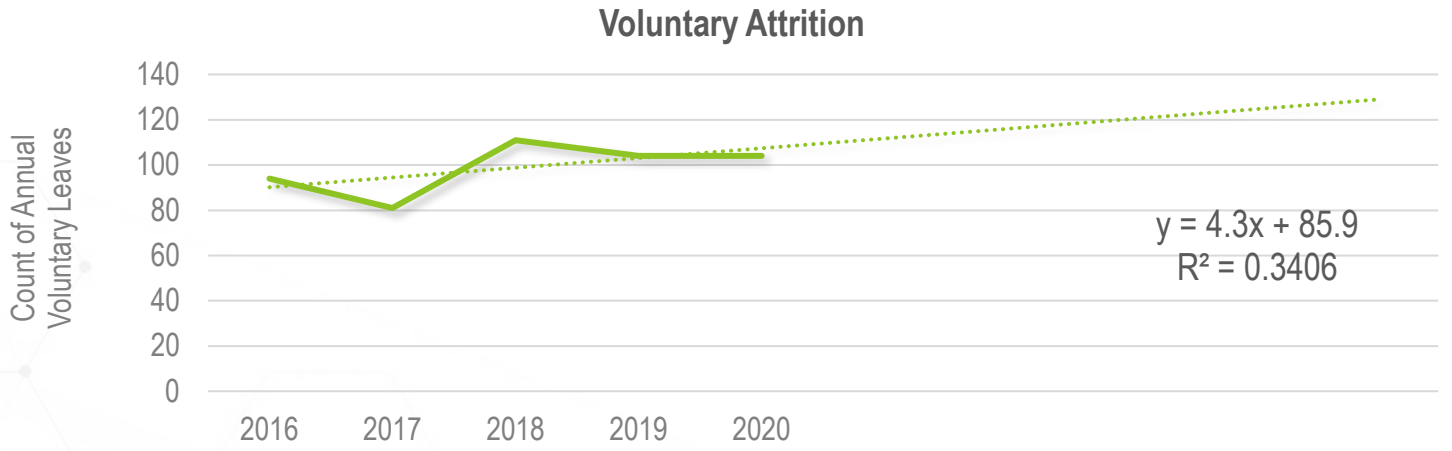


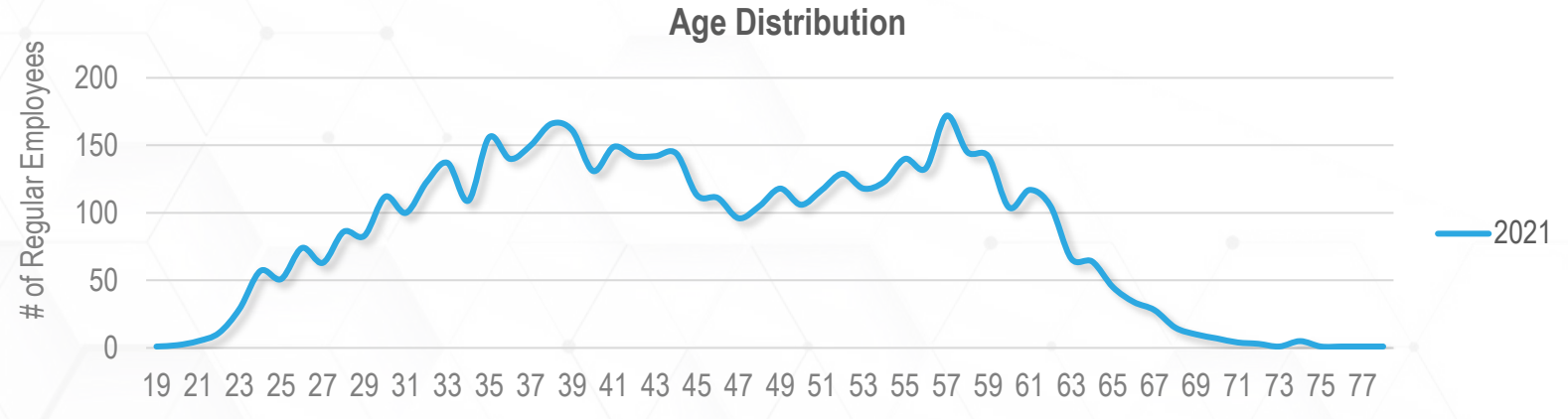

**Headcount growth continues to sustain mission growth and outpace turnover.**

# Distribution of Openings

*New Growth vs. Attrition*

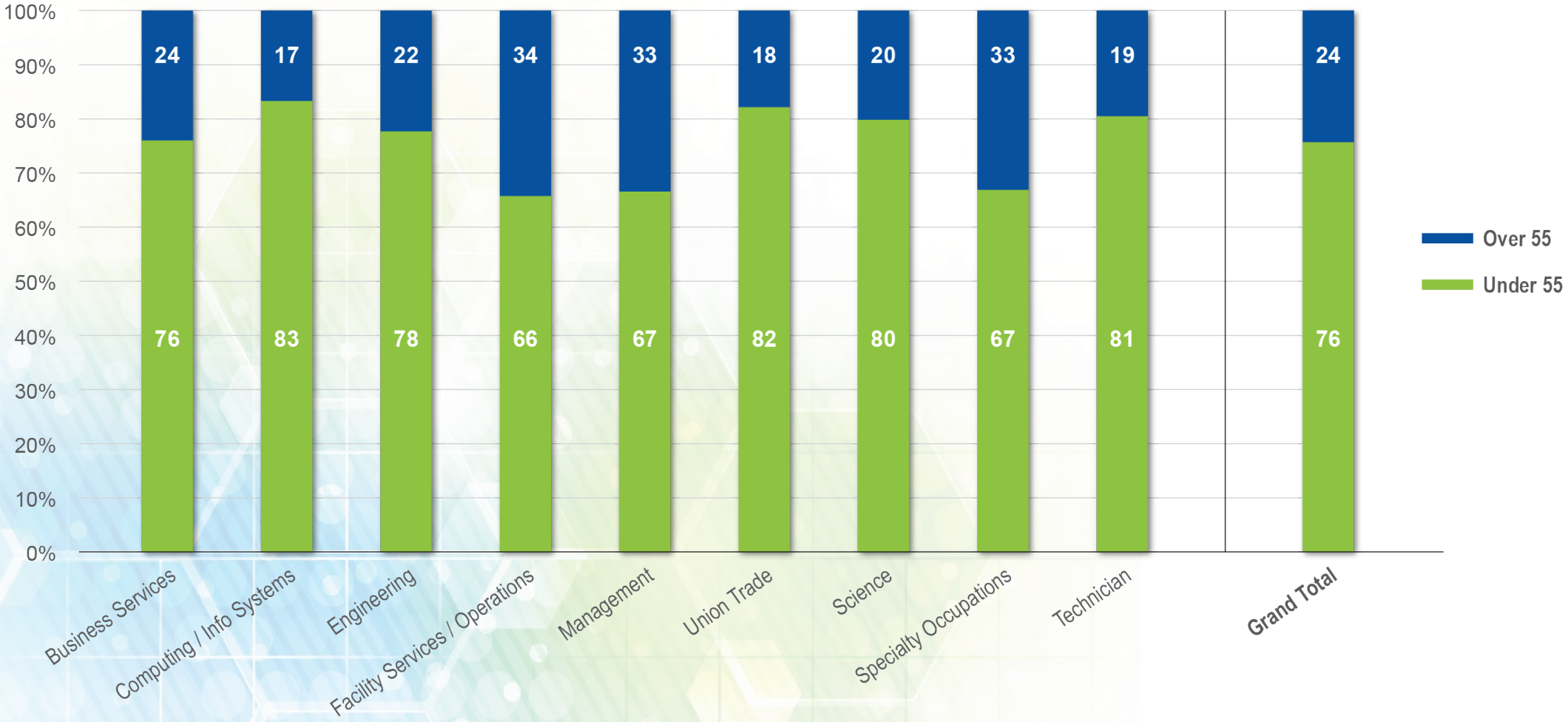


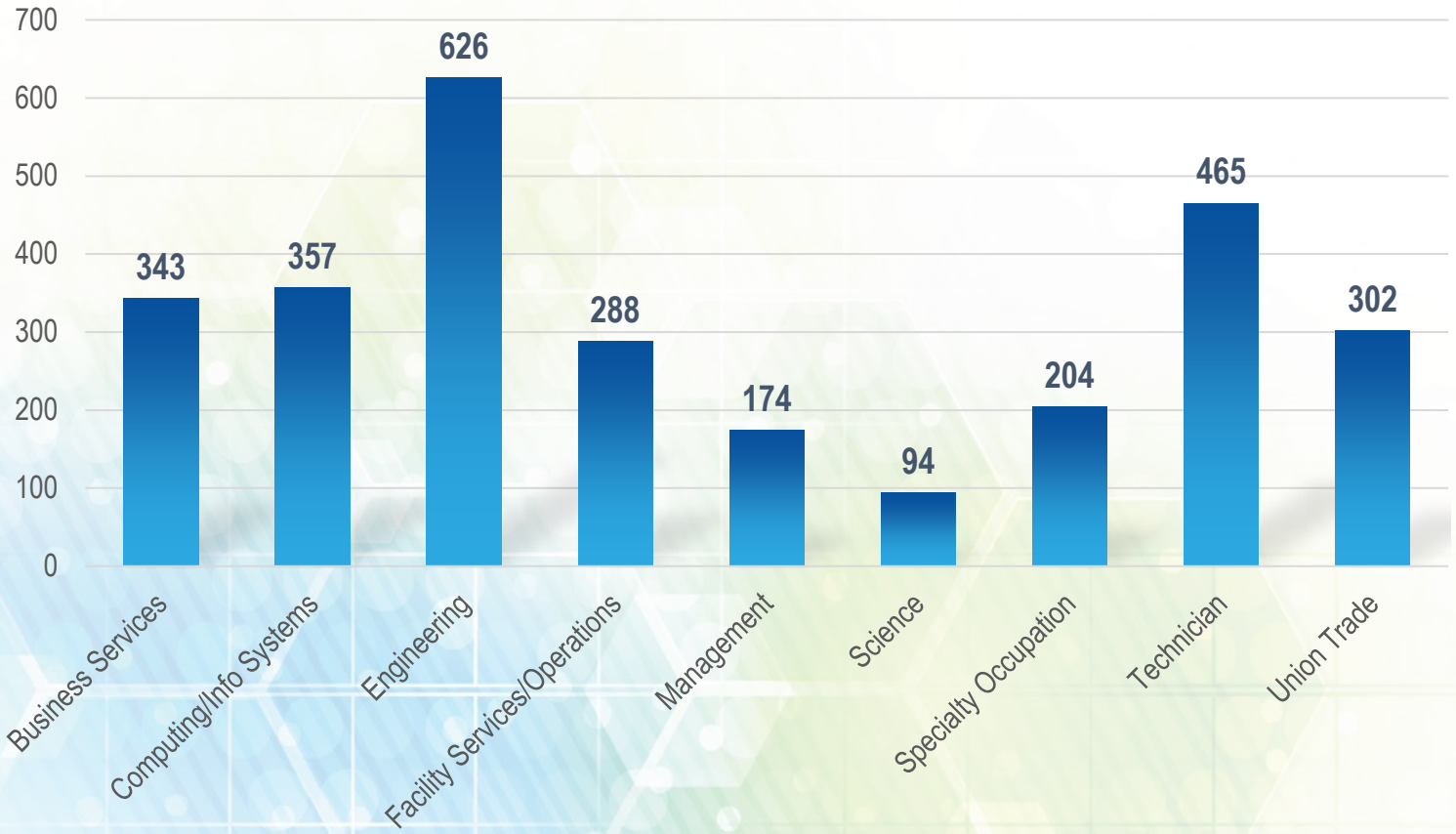
# Analyzing Our Current Workforce

*Age Breakdown and Potential Retirement Risks*



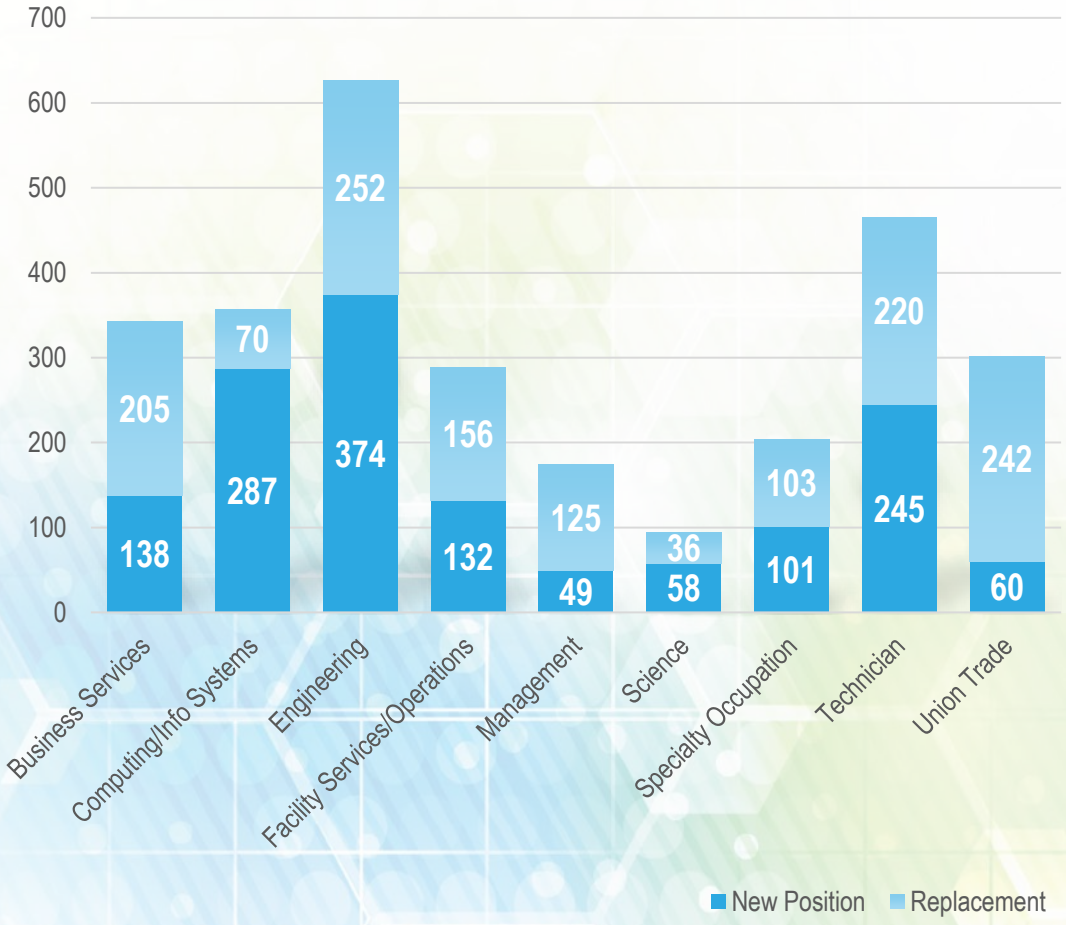
# Projected Openings by Work Family

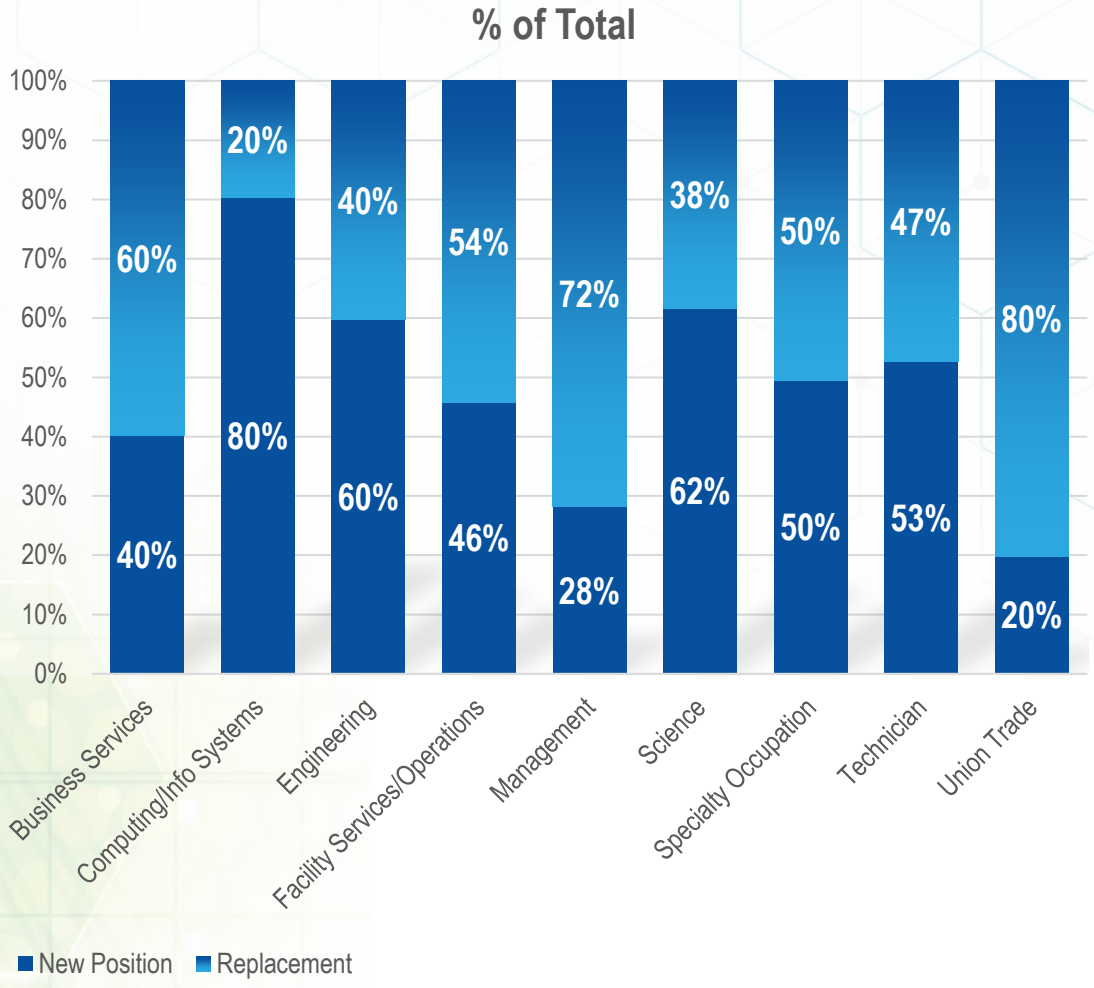
*Total Anticipated Openings Through FY25*




# Projected Openings by Work Family

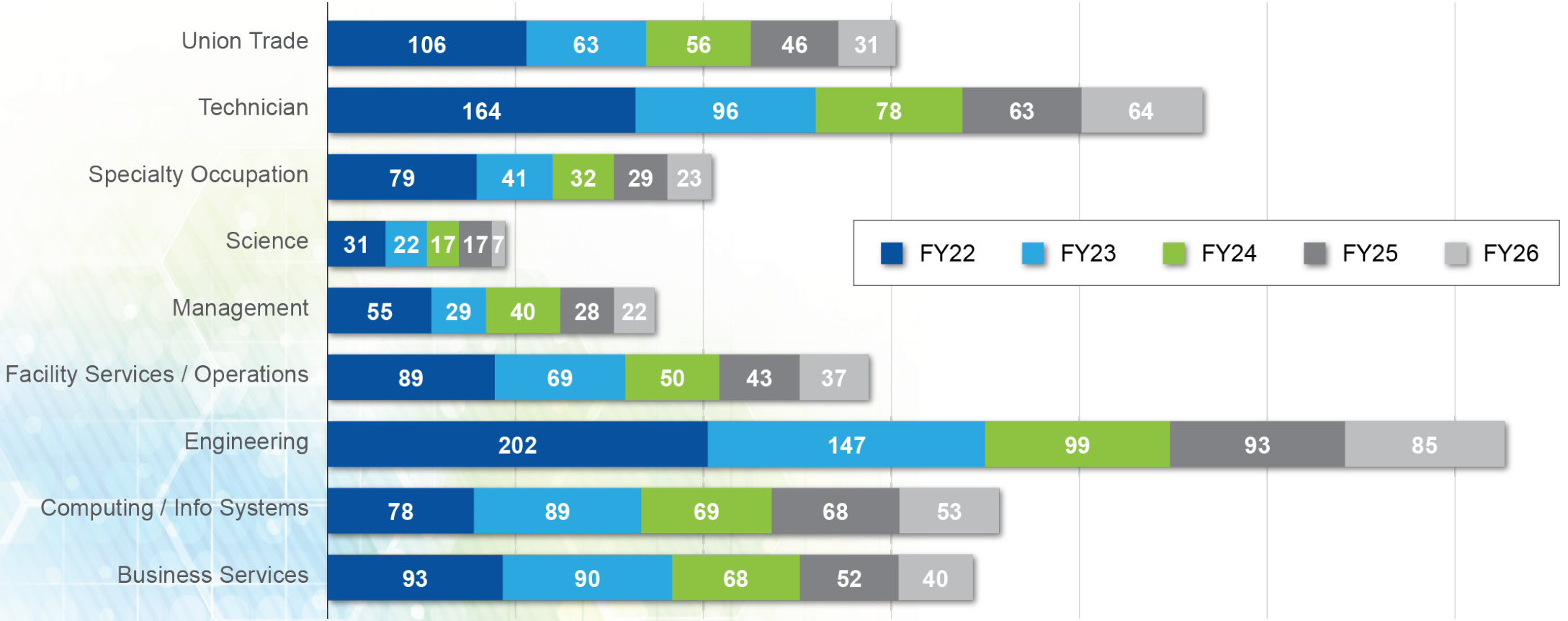
*New Growth vs. Replacement Counts*



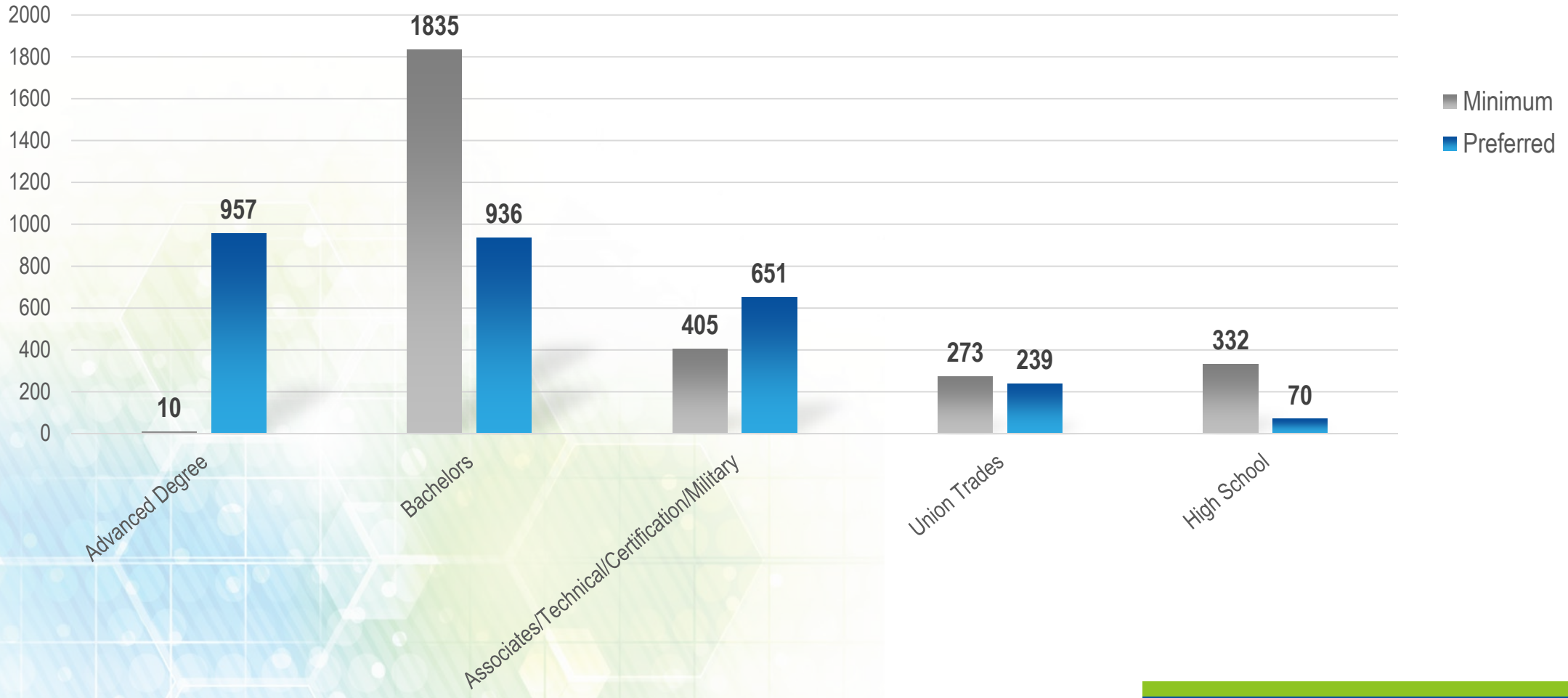
# Projected Openings by Work Discipline

*Projection Total Broken Down by Fiscal Year*



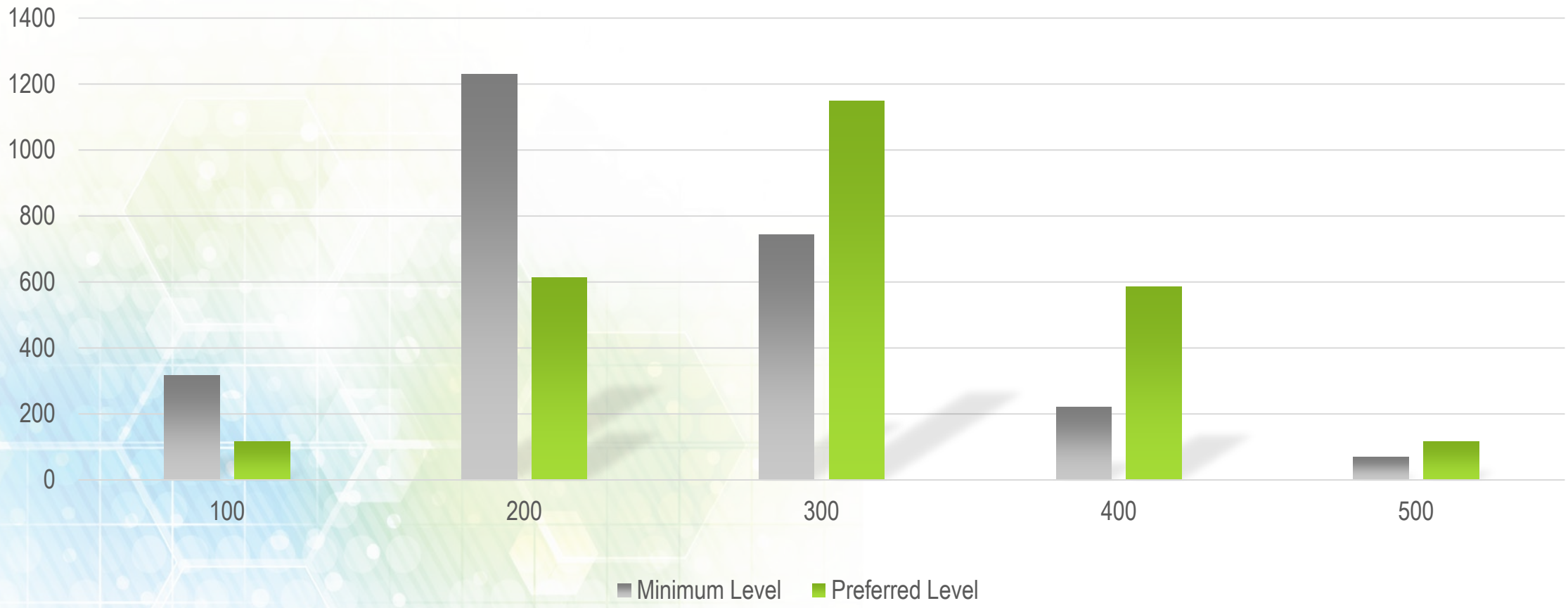
# Projected Openings by Education Requirements

*Minimum Education Requirement vs Preferred Education Level Upon Entry*



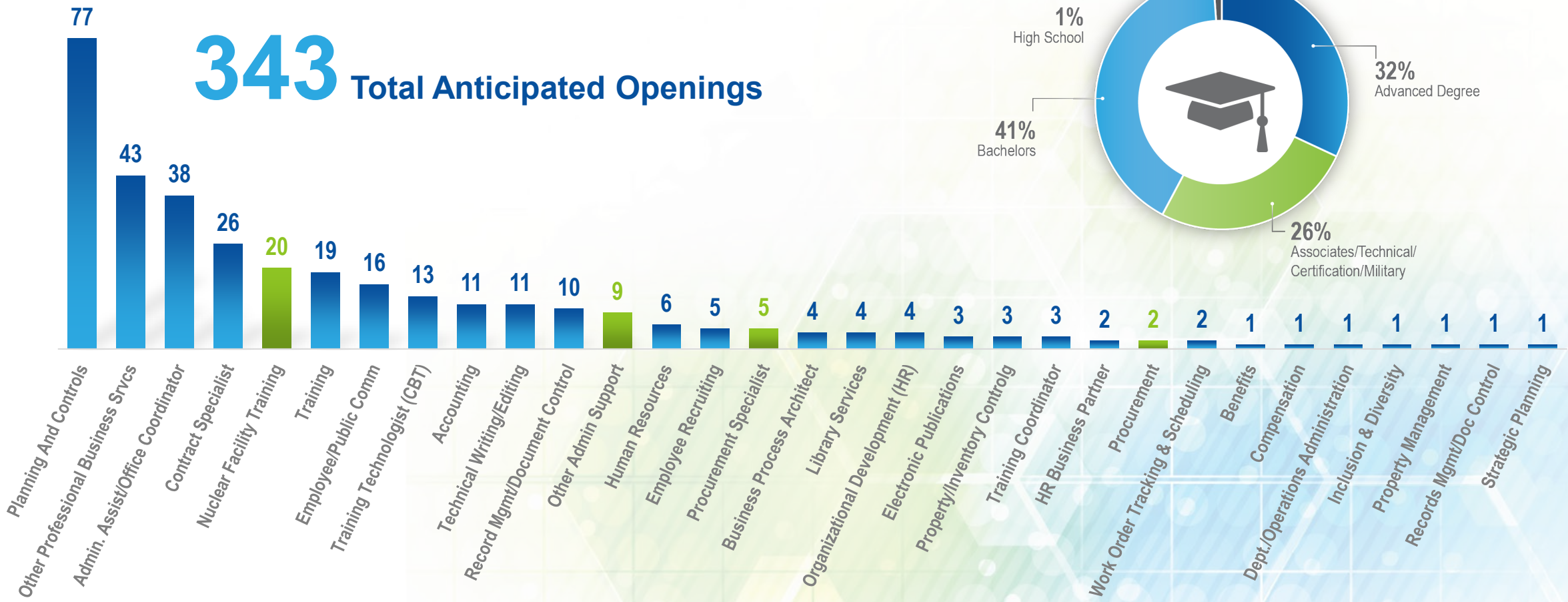
# Projected Openings by Job Level Requirements

*Minimum Job Level Requirement vs Preferred Level Upon Entry*



# Business Services Openings

**343** Total Anticipated Openings



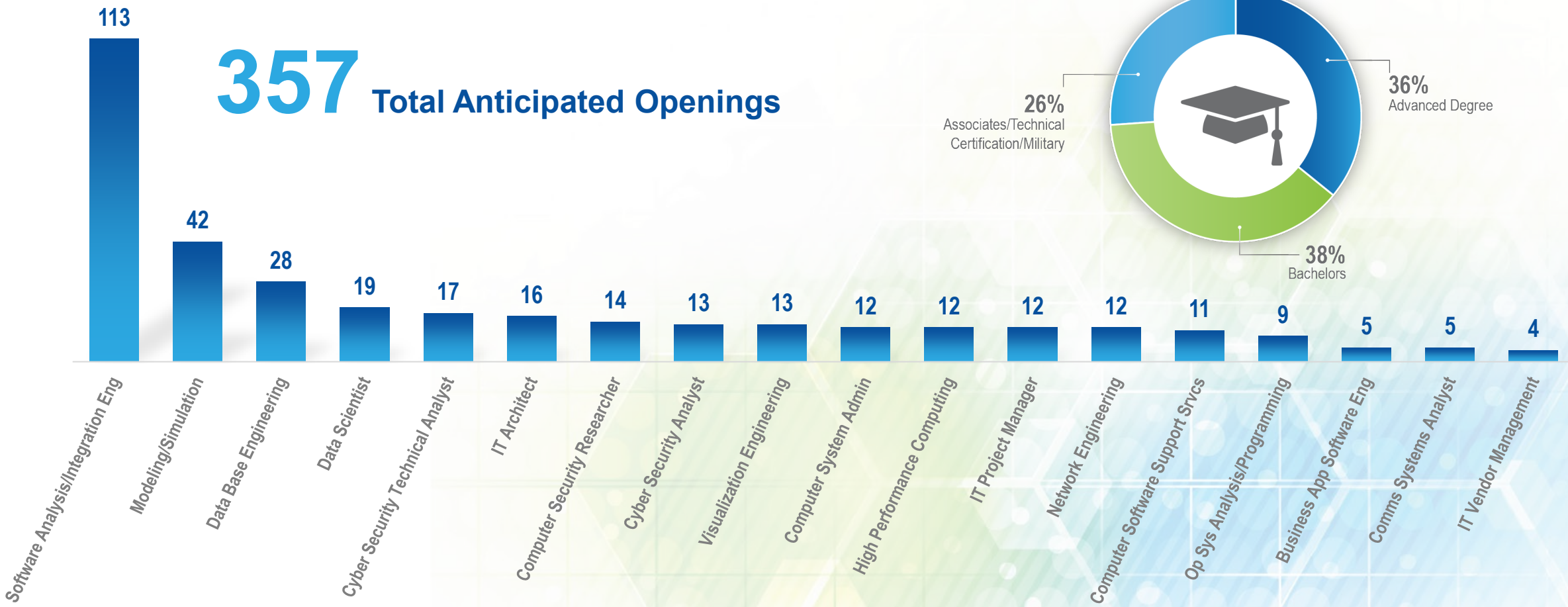




Indicates occupations with high risk for retirement

# Computer Engineering and Information Systems

**357** Total Anticipated Openings



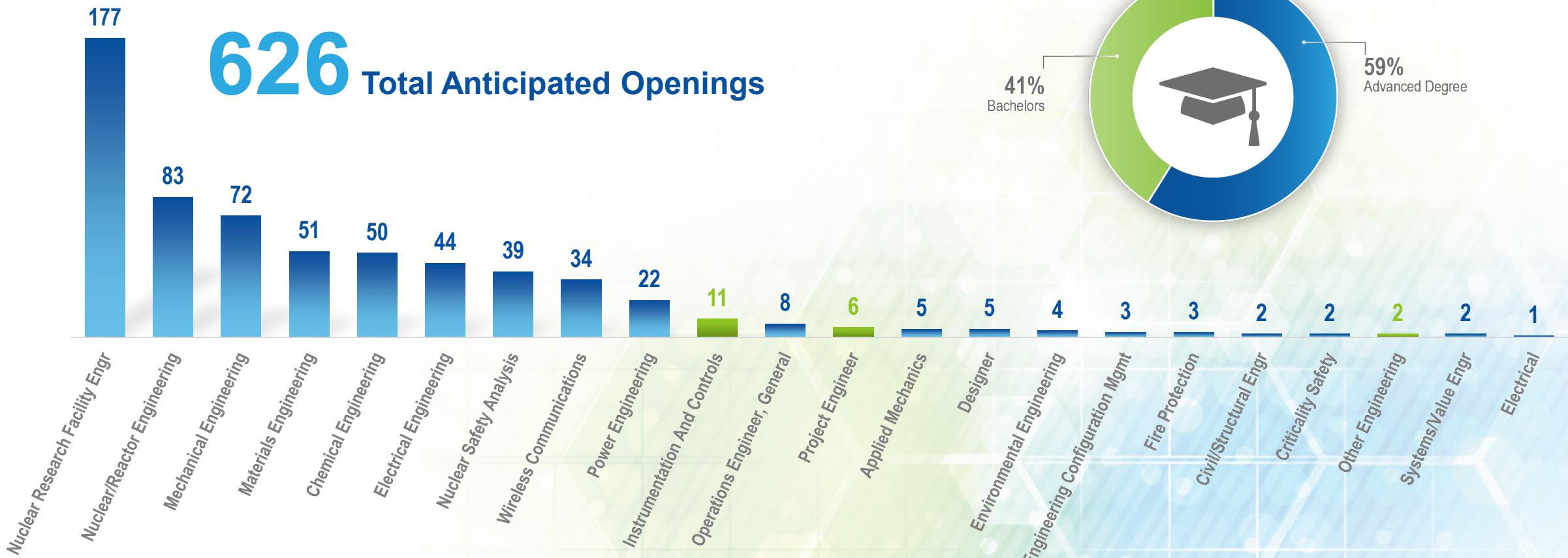

Preferred Education Upon Entry




Indicates occupations with high risk for retirement

# Engineering

**626** Total Anticipated Openings



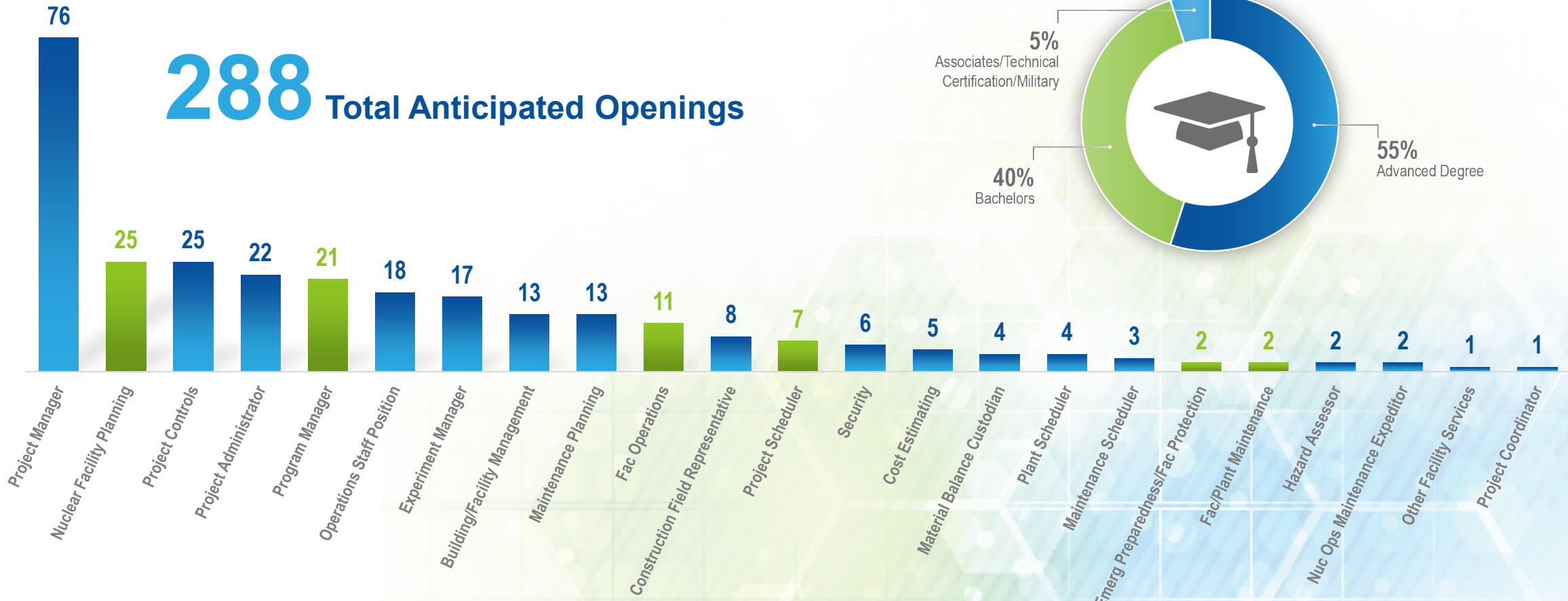




Indicates occupations with high risk for retirement

# Facility Services and Operations

**288** Total Anticipated Openings



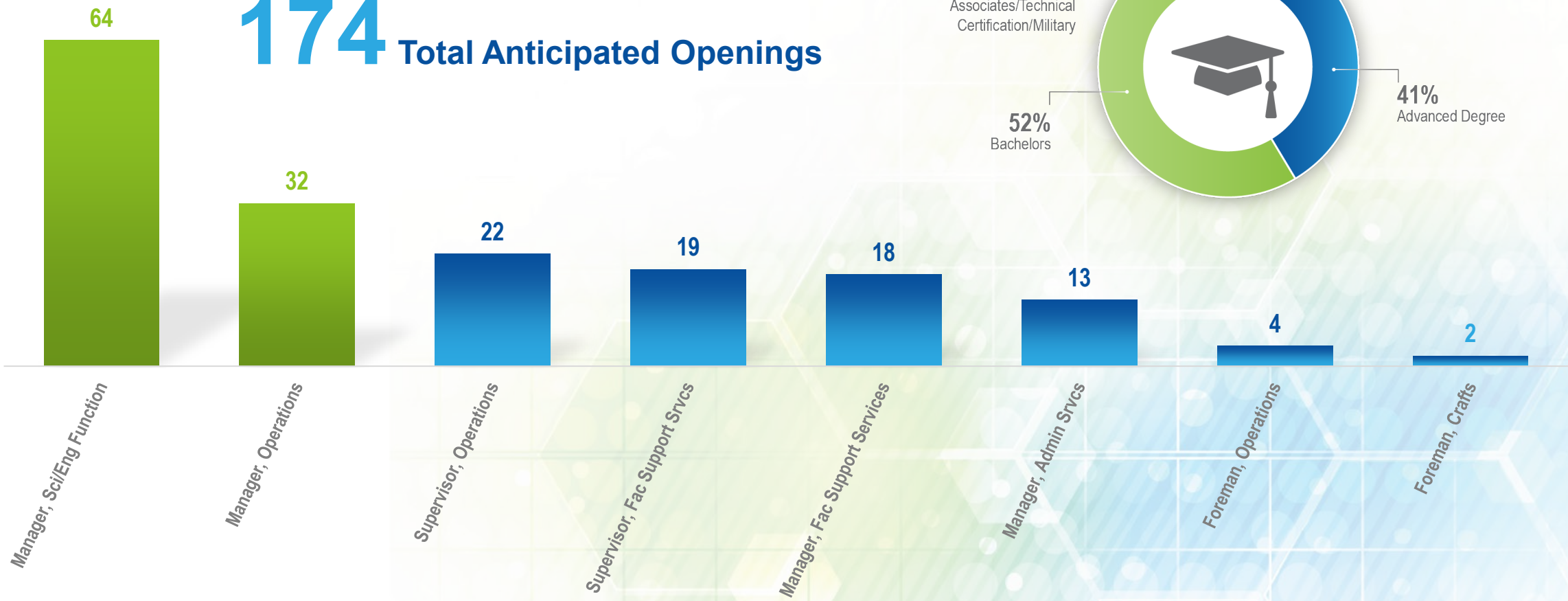




Indicates occupations with high risk for retirement

# Management

## 174 Total Anticipated Openings

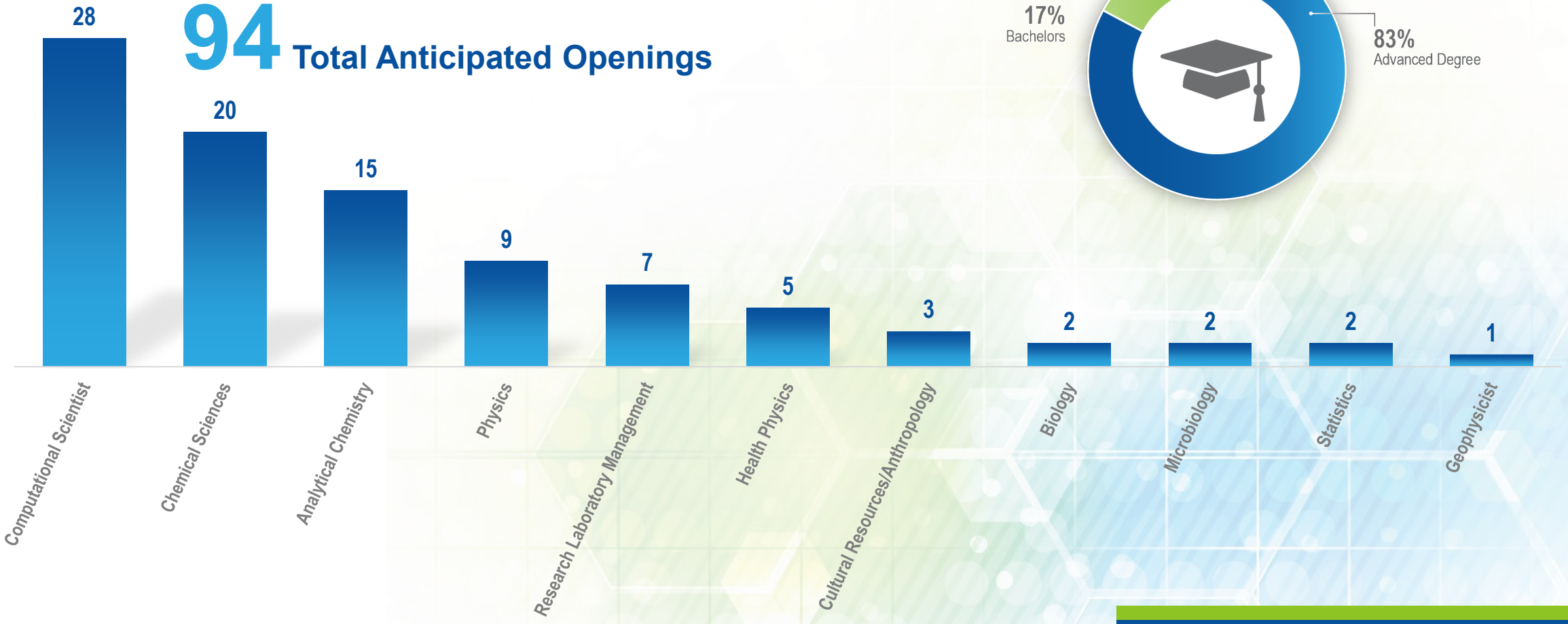



Indicates occupations with high risk for retirement

Preferred Education Upon Entry

# Sciences

## 94 Total Anticipated Openings

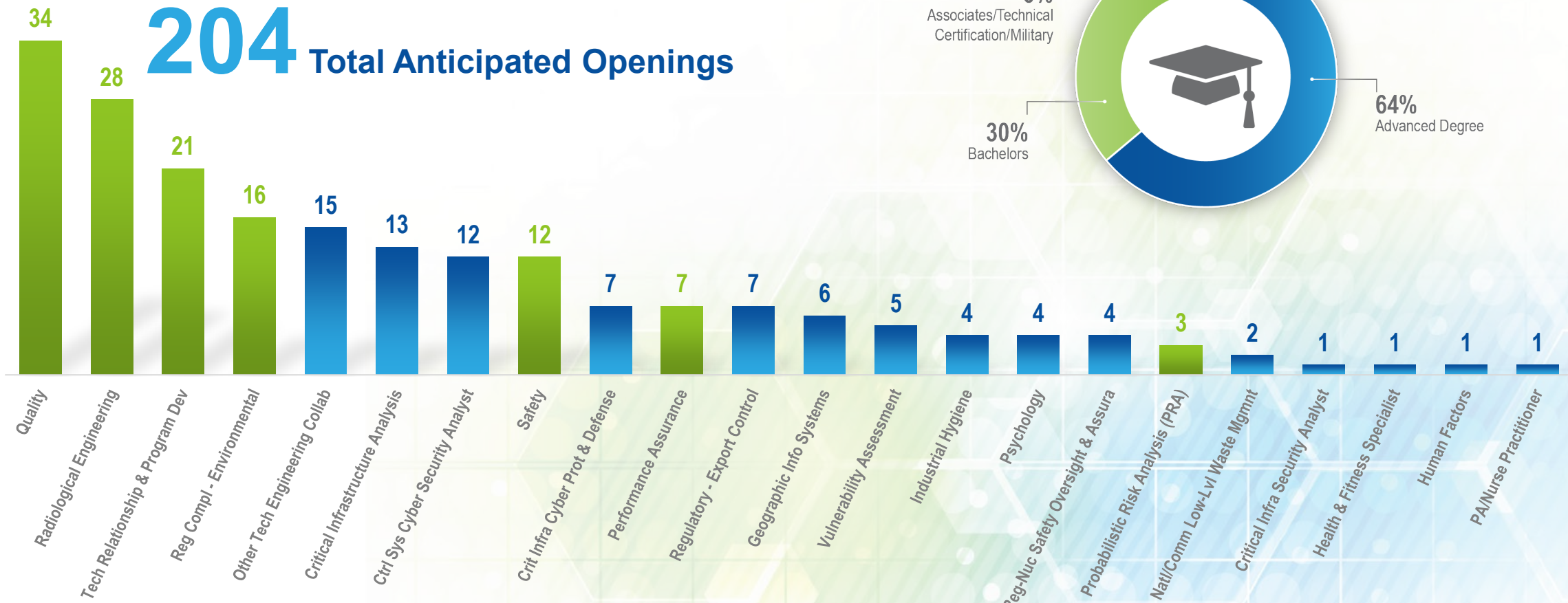



Indicates occupations with high risk for retirement

### Preferred Education Upon Entry

# Specialty Occupations

**204** Total Anticipated Openings




Preferred Education Upon Entry




Indicates occupations with high risk for retirement

# Technicians

**465** Total Anticipated Openings

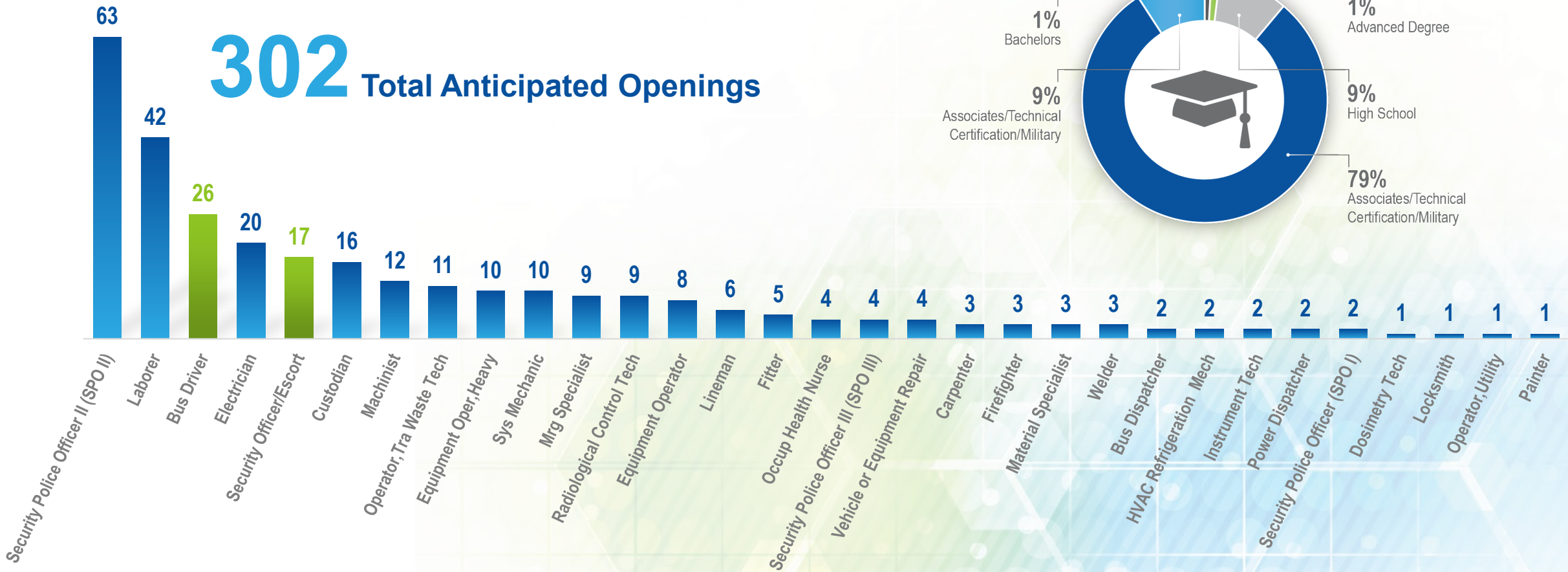

Preferred Education Upon Entry




Indicates occupations with high risk for retirement

# Union Trade Positions

**302** Total Anticipated Openings





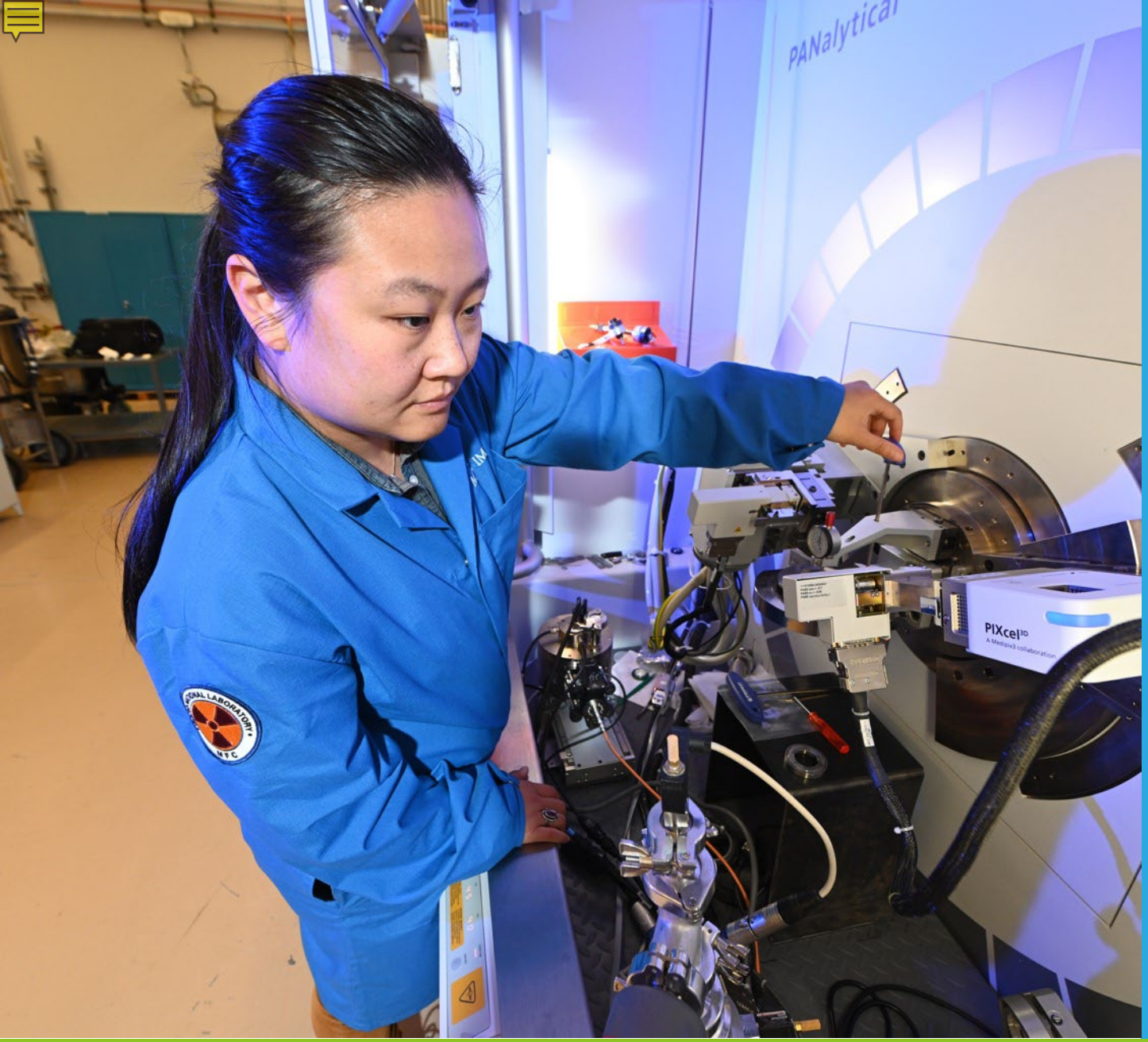


Indicates occupations with high risk for retirement

# Pipeline Development

To create a ***well-trained, diverse, and abundant workforce*** there must be multiple routes into any career.

1. Prioritize development where demand is the greatest
2. Improve the ways we already approach developing the workforce
3. When necessary, develop new pipeline on-ramps, expansions or contractions




# Action Plan

Now that we have a good understanding of our demand, let's prioritize and strategize on proactive workforce development strategies!


Idaho National Laboratory

*Battelle Energy Alliance manages INL for the U.S. Department of Energy's Office of Nuclear Energy. INL is the nation's center for nuclear energy research and development, and also performs research in each of DOE's strategic goal areas: energy, national security, science and the environment.*