

Careers of the Future: Skills You Will Need and How to Get Them



Svetlana Barkanova, Professor, [Physics](#), School of Science and the Environment



Where do you see yourself in 10 years' time? In 20 years? In 30?

Lots of jobs that will exist in 2030 haven't been invented yet!

So how do we prepare for jobs that don't yet exist?

SKILLS – we are only as good as the skills we possess.

But which skills are they?



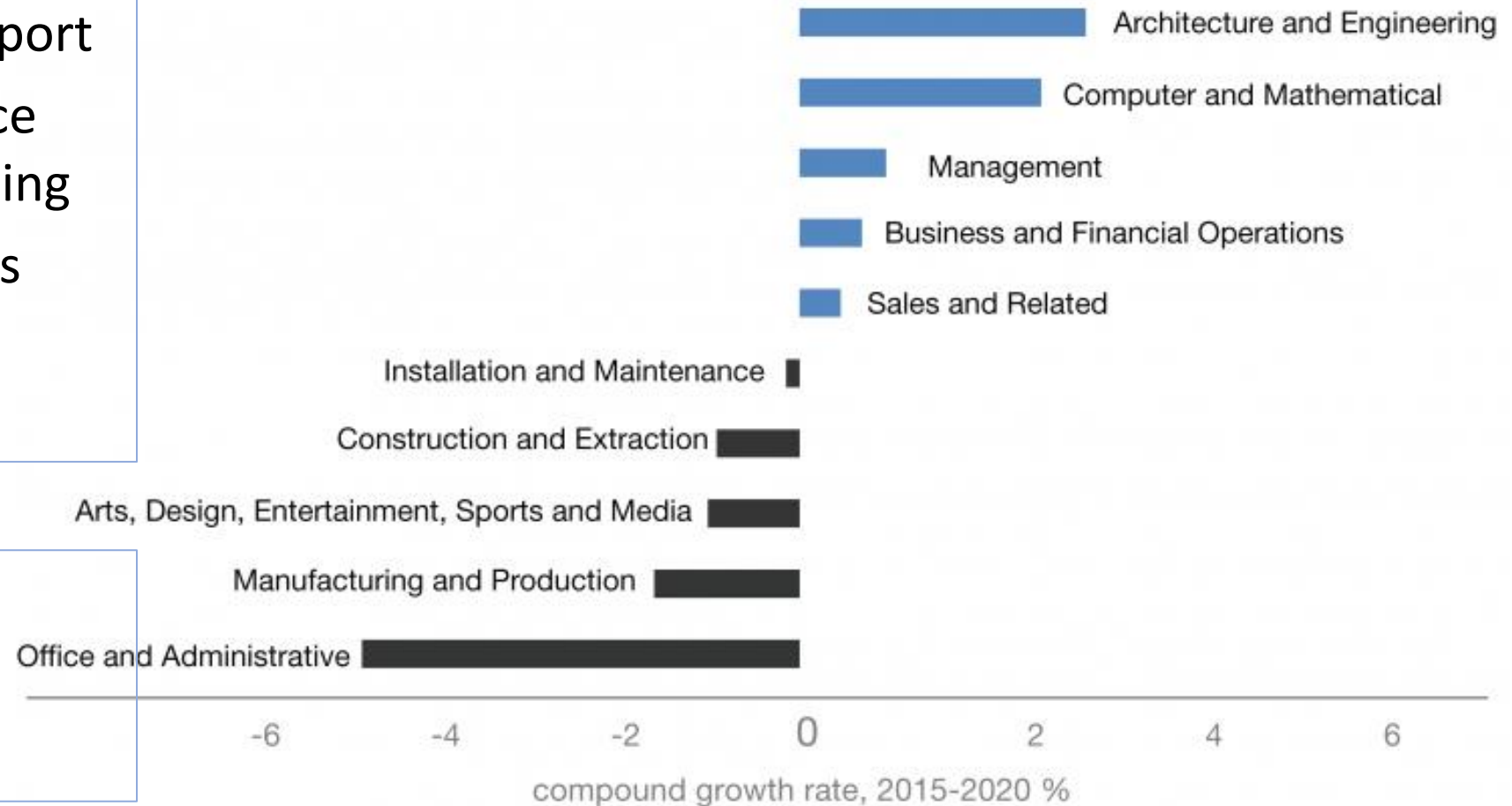
Job families in decline and on the rise

Growing industries:

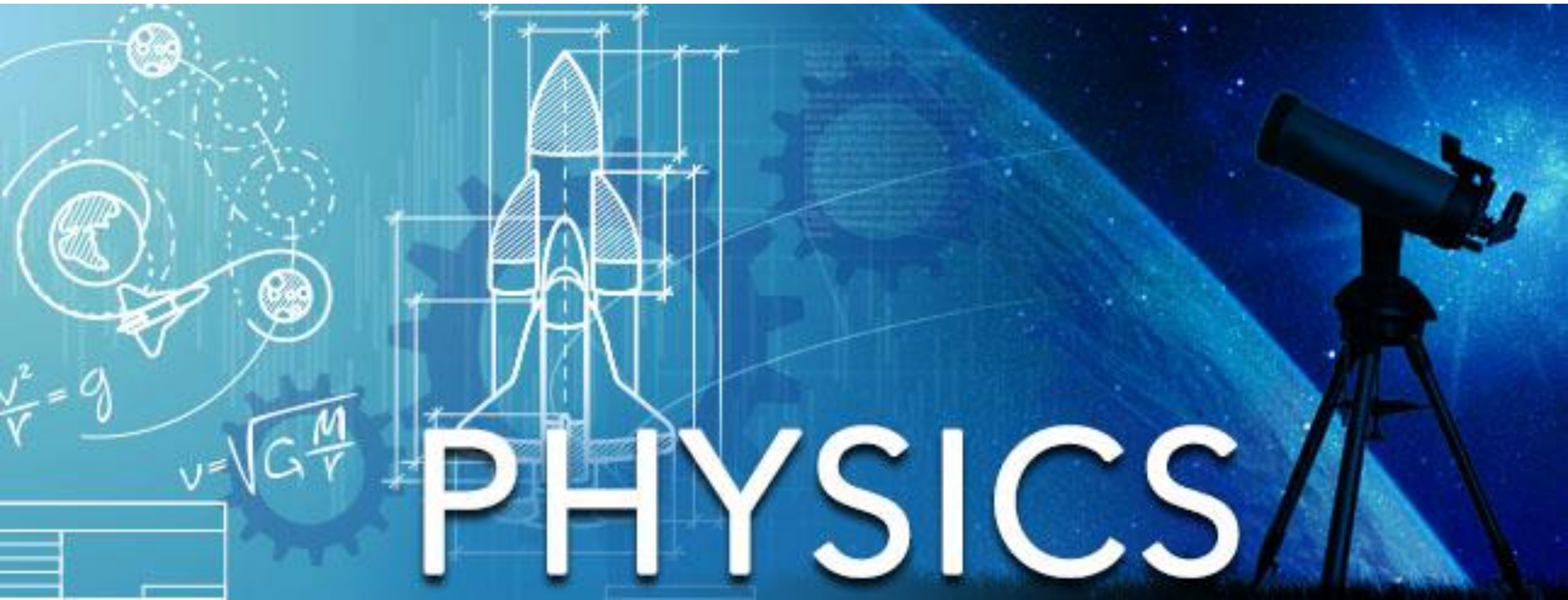
- advanced robotics
- autonomous transport
- artificial intelligence and machine learning
- advanced materials
- biotechnology and genomics

Based on:

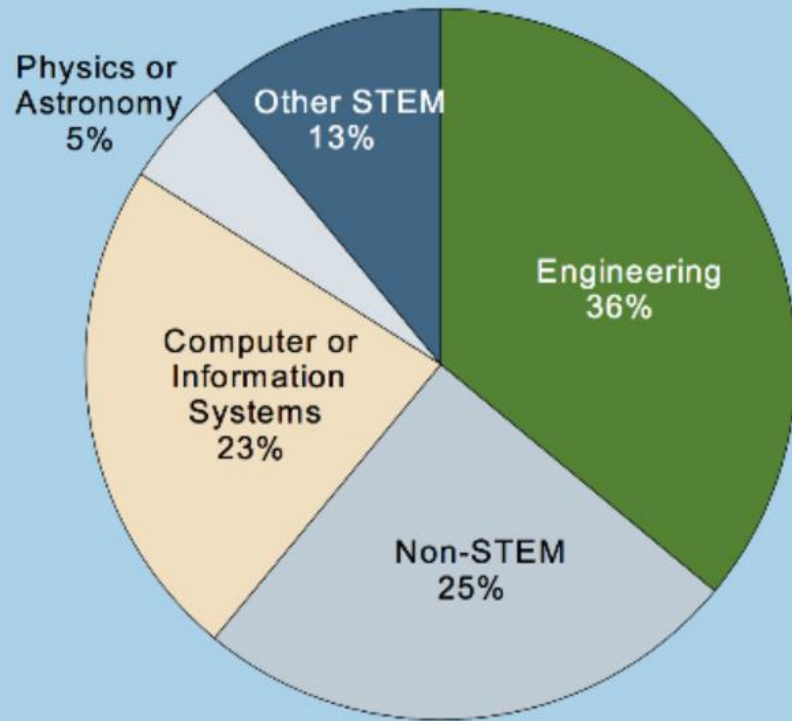
- Science
- Math



Example: PHYSICS. Where do you think physicists work?



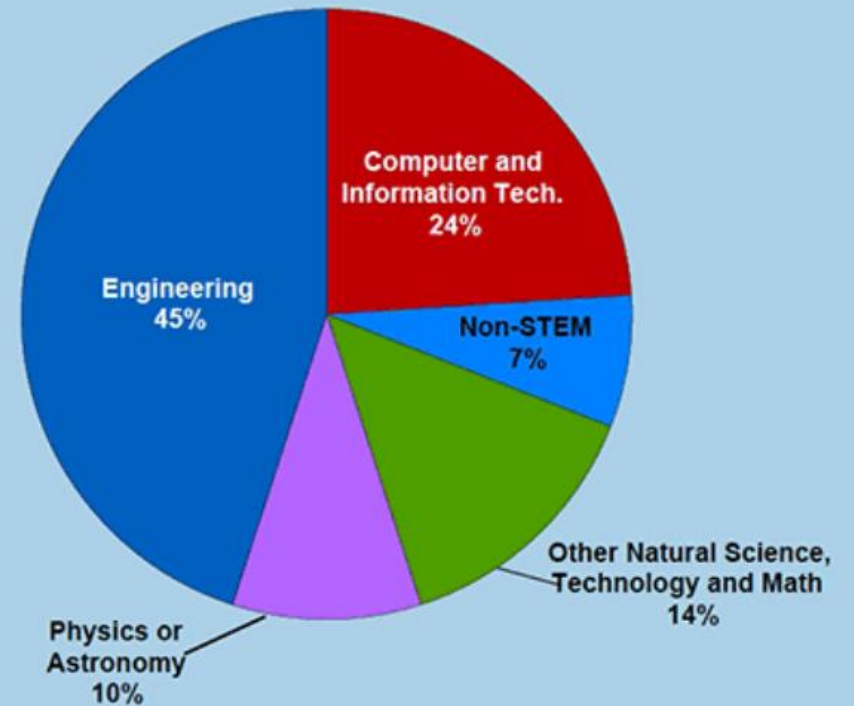
Field of Employment for Physics Bachelors in the Private Sector, Classes of 2013 & 2014 Combined



STEM refers to natural science, technology, engineering, and mathematics.

Figure is based on 1,141 responses

Field of Employment of Exiting Physics Masters Working in the Private Sector One Year After Degree, Classes of 2012, 2013, & 2014 Combined.



<https://www.aps.org/careers/statistics/index.cfm>

Top Skills from the World Economic Forum – how things change!

in 2020

1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

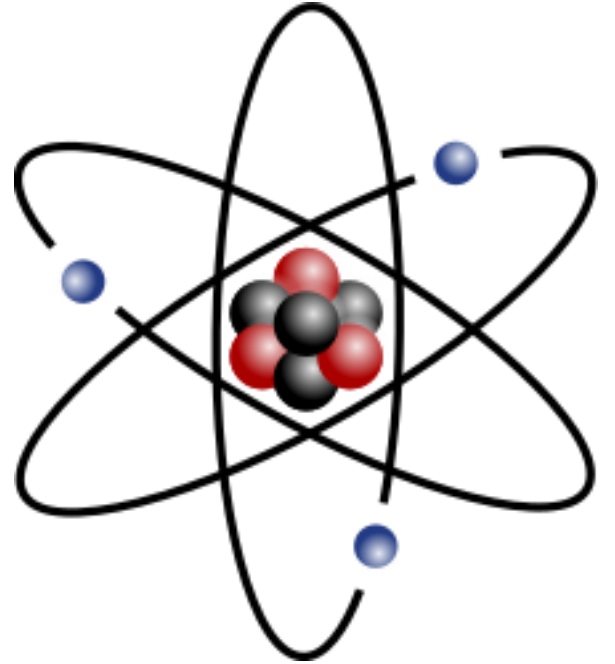
in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity

[Source: Future of Jobs Report, World Economic Forum](#)

Example: Training in Subatomic Physics

- Types of projects
 - Theory – models, analysis
 - Computer programming, working with large data sets
 - Electronics and data acquisition systems
 - Vacuum systems
 - Chip design
 - Detector development
 - Motion systems (robotics and autonomous transport)
- Skills gained in a subatomic physics academic career
 - Soft – creativity, communication, presentation, collaboration
 - Hard – experience from projects listed above



Example: Skills You Get from Physics:

From the World Economic Forum Report:

1. **Complex problem solving**
2. **Critical thinking**
3. **Creativity**
4. **People Management**
5. **Coordinating with others**
6. Emotional Intelligence
7. **Judgement and Decision Making**
8. Service Orientation
9. **Negotiation**
10. **Cognitive Flexibility**

Growing industries:

- advanced robotics
- autonomous transport
- artificial intelligence and machine learning
- advanced materials
- biotechnology and genomics

Other skills, in addition or encompassing those from WEF

- **Project management – planning, resources, risk analysis, quality control**
- **Technical writing and ethics**

THANK YOU!

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Svetlana Barkanova, Professor, Physics, School of Science and the Environment

