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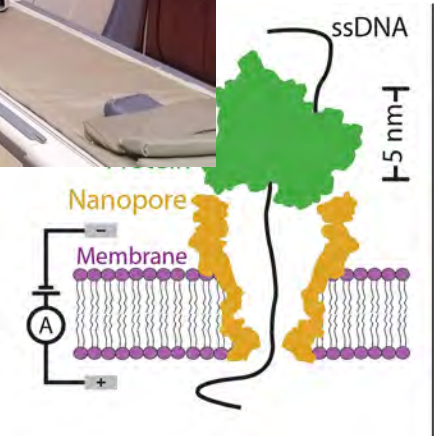
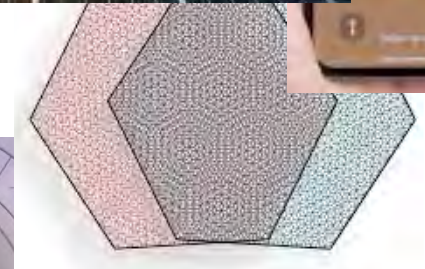
WELCOME

Assoc Chair for Undergraduates
Undergraduate Faculty Advisor

- Every one of you has the capability to graduate with a bachelor of science in physics.
- Every one of you is welcome, regardless of other identities you hold in addition to that of physics student.
- Every one of you may access campus resources to smooth your path through UW and help you transition to life beyond UW.



Physics explores how the universe works



Learning Physics at UW

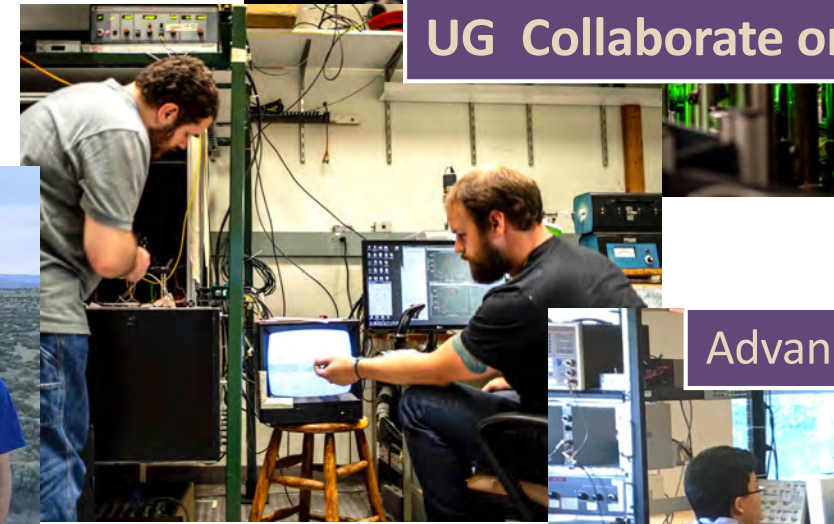
- Largest undergraduate program in the country (207 graduates last year)
Lectures are large, but have breakout sessions in 100- and 300-level courses and in all lab courses
- Most UG do some sort of research
> 150 students/(pre-pandemic) year in physics dept
70% of recent grads did for-credit research/project
- Society of Physics Students provides community



Intro Tutorial



UG Collaborate on Research



Advanced Lab

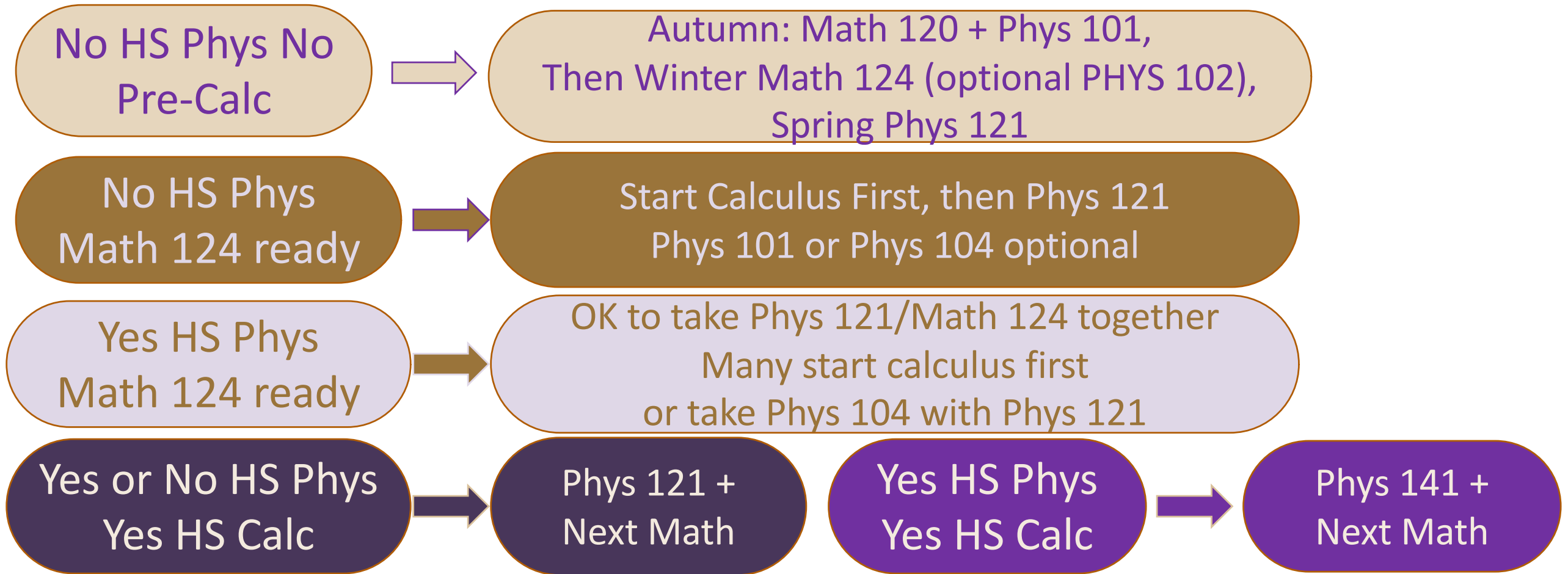


SPS 2019 Trip to LIGO



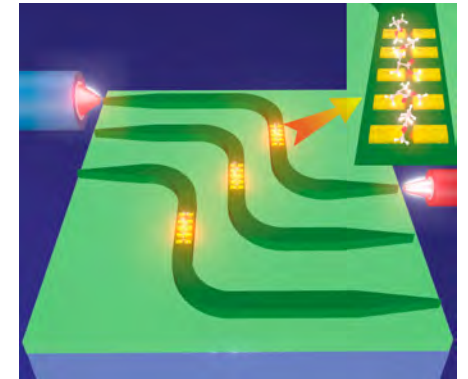
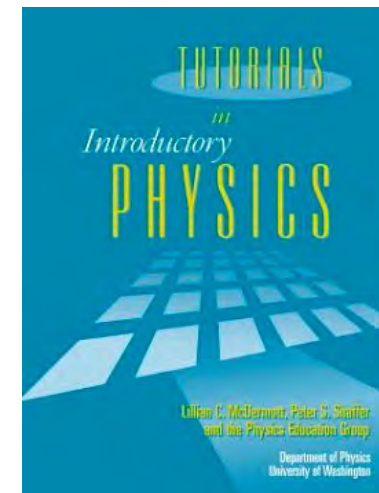
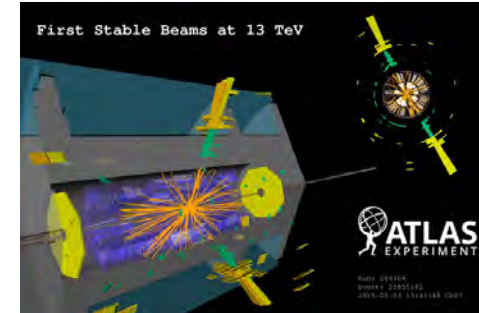
Getting Started – Pick the right 100-level route for you

PHYS 10x	Conceptual Physics	Algebra only.	Only starts in AUT	20 stud/yr
PHYS 11x	Physics for Life Sciences	Pre-calculus, algebra based	Starts every qtr	1100 stud/yr
PHYS 12x	Physics for Phys. Sci & Engr.	Calculus co-requisite	Starts every qtr	1300 stud/yr
PHYS 14x	Honors Physics	Calculus I pre-requisite	Only starts in AUT	50 stud/yr



UW Physics Degree Options

- **Comprehensive**
 - Graduate school in physics or astronomy
 - Full range of physics and math
- **Applied**
 - Technical job at B.S. level or M.S. in engineering
 - More flexibility in electives
- **Teaching**
 - Communicate science to HS or general audience
 - Physics by Inquiry sequence
- **Biological**
 - Medical school, grad school in biophysics, biomed industry
 - 7 quarters of biology and chemistry in addition to physics core



<https://phys.washington.edu/declaring-major>

Why major in physics?

- **GOOD reasons**
 - Because you REALLY want to know WHY the world works
 - Because the list of courses you REALLY want to take at UW gets you a physics degree (or at least close to one)
 - Because you explored several other options, and you like physics the best
- **Reasons that tend not to work out well ...**
 - Because you decided to do so in middle school
 - Because engineering turned you down
 - Because family or friends told you to

UW offers over 200 undergraduate degree options, and that is before you start to mix and match
Thirty different departments count introductory physics as a degree requirement – take time to explore!

Physics is Capacity-Constrained

WHY?

- For the past 5 years, we have had the largest undergraduate program in the country
 - Two years as became capacity constrained, we graduated > 200 bachelors (only 5 schools in the country graduate ≥ 100)
- Ten years earlier
 - we graduated 57 physics bachelors in a single degree track.
 - we had 4.5 more tenure-track faculty FTE than
 - we could fit our required 300-level courses in an 80-seat lecture hall
- Choice: limit the number of majors or decrease the requirements to graduate
 - Bottlenecks: Advanced Laboratory and Capstone Opportunities

GOING FORWARD

- We aim to admit to the major all students who truly want to be physics majors and who have the skill and knowledge base to succeed in the major.
- In the past two years, we admitted 75-80% of applicants each cycle.

What does it take to be a physics major?

- Interest –
 - Keen to learn about how and why matter interacts
 - Enjoy “mathematization” of events and processes, and using the results to predict the future
 - Proactive participation in your own learning
 - Desire to pursue a career that uses physics knowledge and skills
- Skills –
 - Time management and organization
 - Problem solving
 - Mathematical facility
- Knowledge base –
 - Algebra, Trigonometry, Calculus
 - Introductory physics series
(mechanics, electricity, magnetism, waves, optics, quanta, heat)

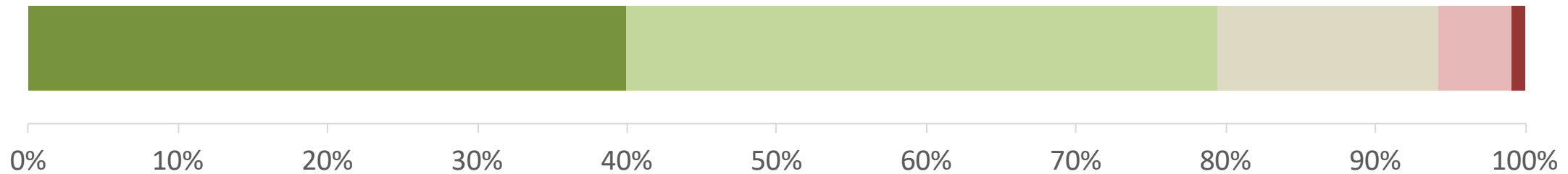
Typically apply Autumn or Spring
of Sophomore Year

Our Majors are Happy and Satisfied

*Senior Exit Survey:
Classes of 2020, 2021 and most of 2022*

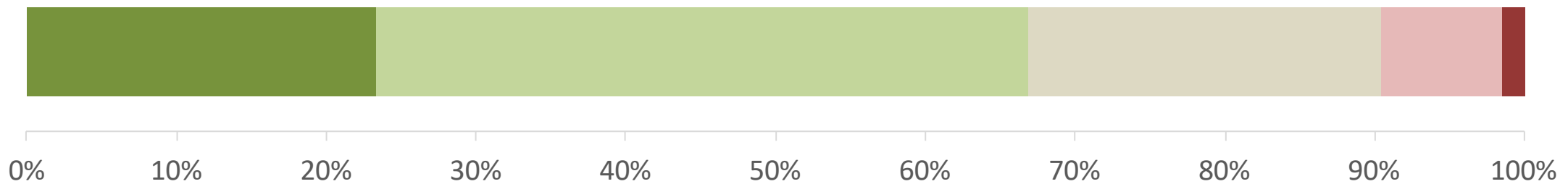
HOW SATISFIED ARE YOU WITH YOUR CHOICE OF PHYSICS AS A MAJOR?

Very Satisfied Somewhat Satisfied Neutral Somewhat Dissatisfied Very Dissatisfied



QUALITY OF THE OVERALL PROGRAM.

A: Excellent A-/B+: Very Good B/B-: Good C/C+: Fair D/F: Poor



What comes next?

- You can take any job where they want you to solve complex problems.
- You can attend any graduate program that builds on a physics base.

National Data: 1 year post graduation
Classes of 2019 & 2020 (18,489 students, 5764 surveys returned)

from aip.org/statistics

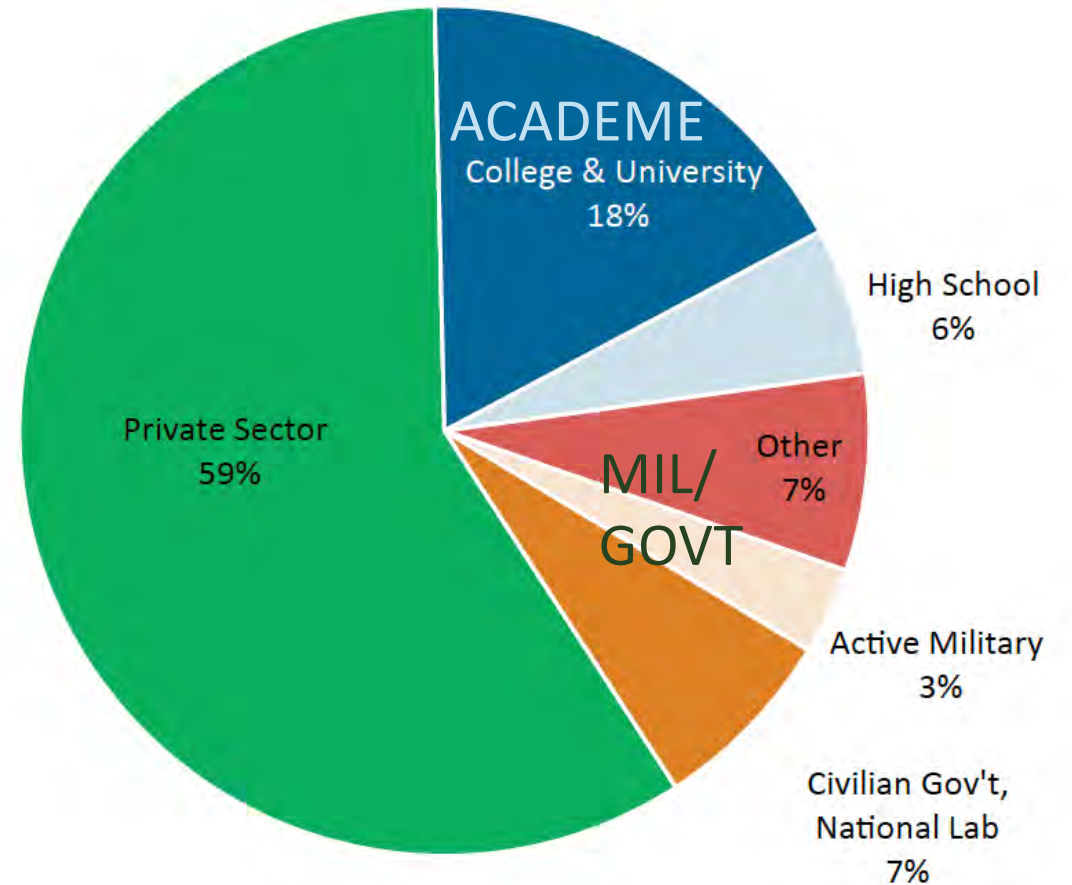
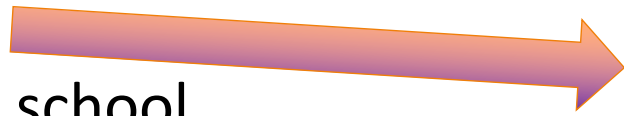
46% Employed

29% Phys/Astro grad school

10% Engineering grad school

9% Other schooling

6% Unemployed



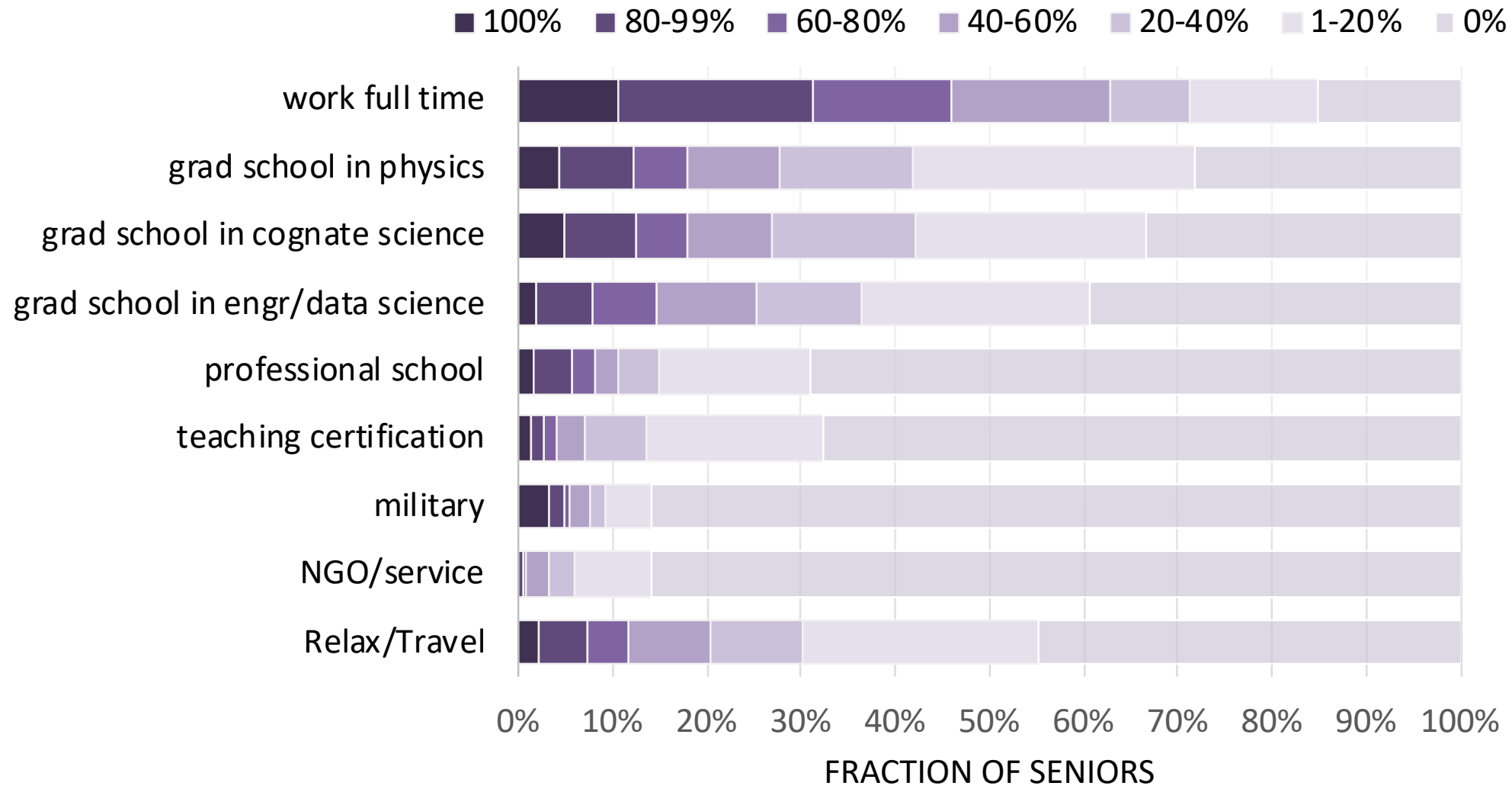
www.spsnational.org/careerstoolbox

gradschoolshopper.com

Immediate Plans After Physics B.S. ...

Classes of 2021 and 2022 combined (386 stud)

UW Data: After graduation, what is the probability that any of these choices will be your main activity?



Typical Job Titles/Salaries 1 yr Post B.S.

Engineering

Systems Engineer	Application Engineer
Electrical Engineer	Development Engineer
Design Engineer	Engineering Technician
Mechanical Engineer	Field Engineer
Project Engineer	Process Engineer
Optical Engineer	Process Technician
Manufacturing Engineer	Product Engineer
Manufacturing Technician	Product Manager
Laser Engineer	Research Engineer
Associate Engineer	Test Engineer
Technical Services Engineer	General Engineer

Education

High School Physics Teacher
 High School Science Teacher
 Middle School Science Teacher
 Substitute Science Teacher

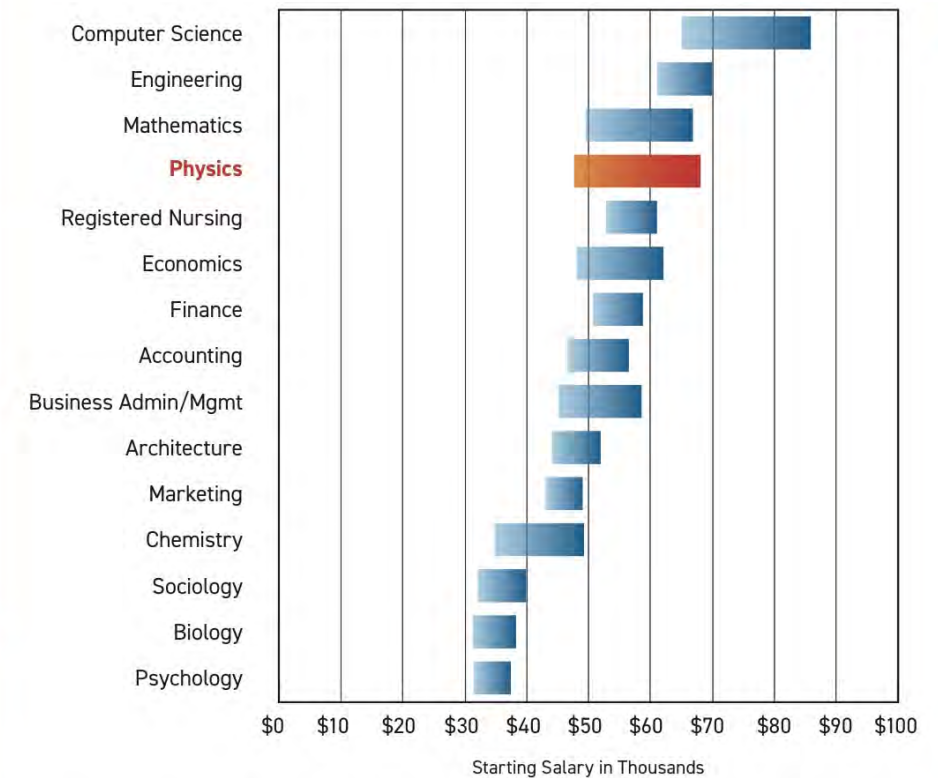
Research & Technical

Research Assistant
 Research Associate
 Research Technician
 Lab Technician
 Lab Assistant
 Accelerator Operator
 Physical Sciences Technician

Computer Hardware / Software

Software Engineer
 Programmer
 Web Developer
 IT Consultant
 Systems Analyst
 Technical Support Staff
 Analyst

What Do New Bachelors Earn? Starting Salaries for the Class of 2018



Bars represent the middle 50% of salaries, i.e. between the 25th and the 75th percentiles.
 Reprinted from the Summer 2019 Salary Survey, with permission of the National Association of Colleges and Employers, copyright holder.

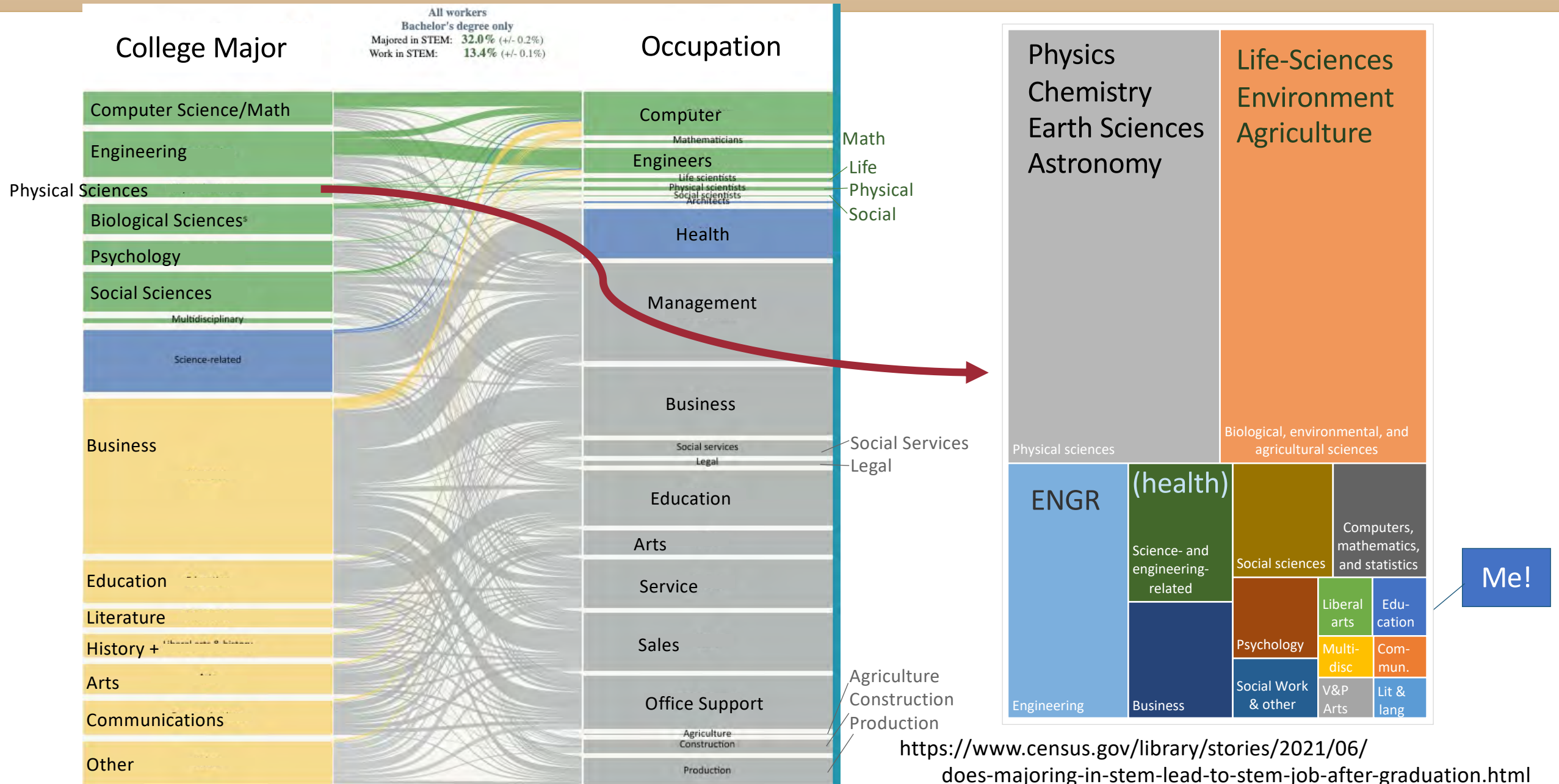
Data from American Institute of Physics (aip.org/statistics)

Who hires physics bachelors in Washington State?

Washington Employers that recently hired new physics bachelor recipients (2016-2020 data).
<https://www.aip.org/statistics/washington>.

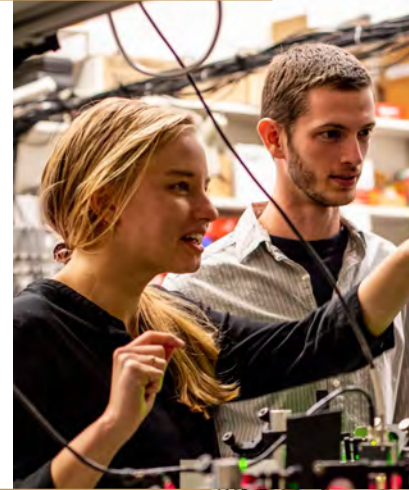
Bluetooth SIG, Inc.			
Access Laser Company			
AeroTEC			
Aerotek	EASi		
Allen Inst for Brain Science	Fatigue Technology Inc.	Lumotive	
Alphabet inc.	Filter, LLC	Manufacturing Technology	Radiant Vision Systems
ALS Global	Fred Hutchinson Cancer Res Ctr	MAQ Software	Raisbeck Engineering
Amazon	Fremont Analytical Inc.	Microsoft	ScribeAmerica
Amazon Web Services	Garco Construction	Microvision	Seattle Photonics
Applied Motion Systems	Google	Mighty AI	Silicon Mechanics
Assemble Inc	IHME	MRV Systems, LLC	Simpson Engineers, Inc.
Boeing	Inst for Environmental Health.	nLIGHT, Inc.	Starbucks
BTownWeb	Inst for Health Metrics and Eval.	Outreach.io	Tecace Software
Casaba Security LLC	Intellectual Ventures	Ozone International	Tecplot Inc.
CB Technologies Inc.	Jacobs	Professional Credit Service	Trinity Consultants
CDC/NIOSH	Key Technology, Inc	Protingent, Inc.	University of Washington
Commerce Architects	Launch Consulting LLC	Puget Sound Energy	US Navy
Department of Defense	Lease Crutcher Lewis		WA Dept of Transportation
Eagle Harbor Technologies	LevelTen Energy		

Occupation vs. College Degree – you have OPTIONS



We look forward to your joining us!!

Graduation 2019



Intro Tutorial

To talk with us or get your questions answered:

<https://phys.washington.edu/advising-student-services>. physadvs@uw.edu

UG Collaborate on Research

SPS Annual Trip to LIGO



Advanced Lab

