



# PHYSICS & ENGINEERING PHYSICS

MORGAN STATE UNIVERSITY

# WHAT IS PHYSICS?

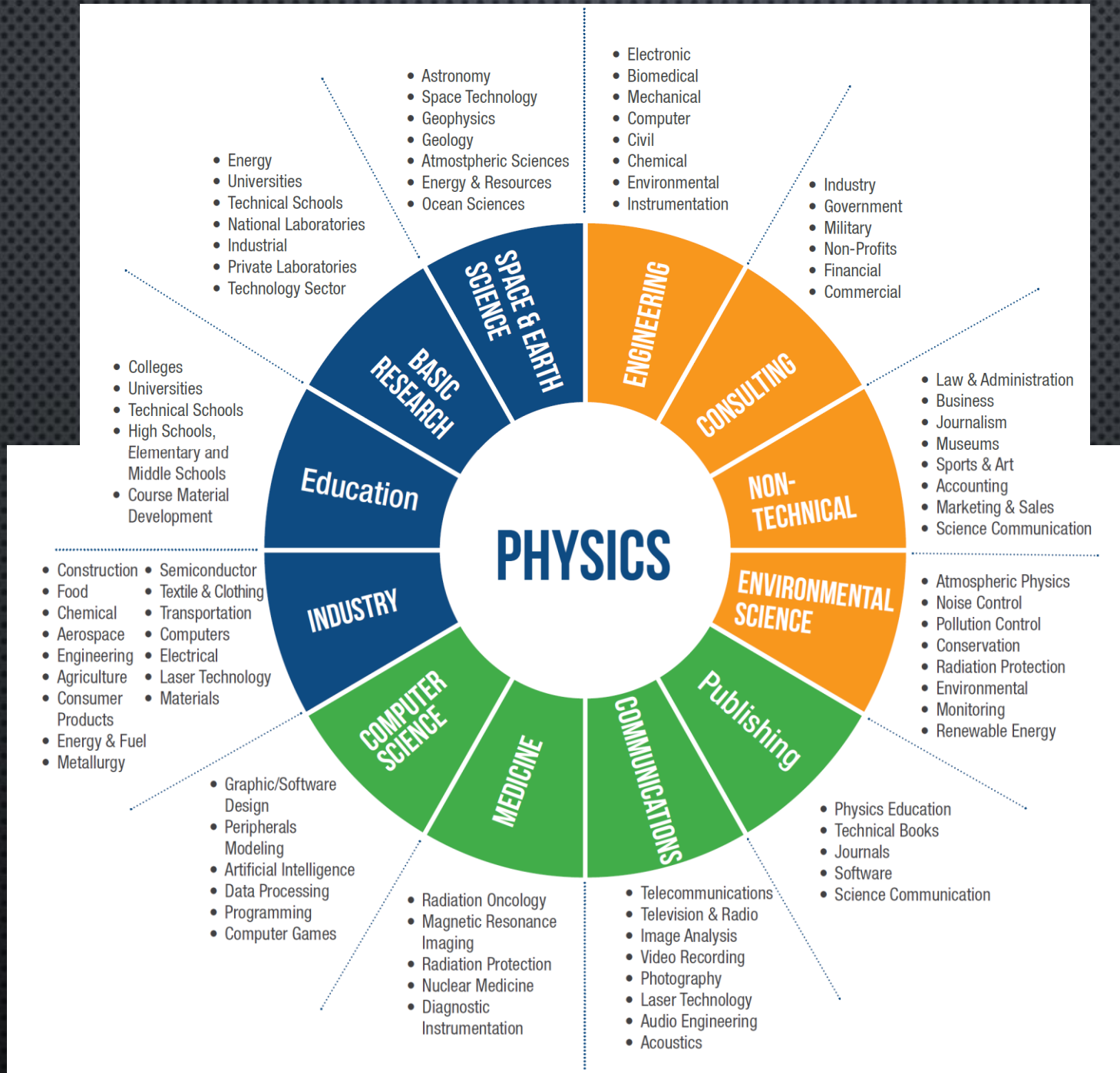
## What is Physics?

Physics underlies all basic science and engineering – biology, chemistry, astronomy, and engineering.

- Engineering
- Mechanics
- Optics
- Electronics
- Magnetics
- Semiconductors
- Mechanics
- Data Processing
- Medical Technology
- Fluids
- Acoustics
- Teaching
- Space Exploration
- Astronomy
- Materials and Construction

## Physics in Everyday Life

If you've ever wondered what makes lightning, how planes fly, how to make better cell phones, or how long it takes light from a star to reach us – you have been thinking about some of the same things physicists study every day!



## MOST COMMON BACHELOR PHYSICIST JOB TITLES

### ENGINEERING

- SYSTEMS ENGINEERS
- ELECTRICAL ENGINEERS
- DESIGN ENGINEERS
- MECHANICAL ENGINEERS
- PROJECT ENGINEERS
- OPTICAL ENGINEERS
- MANUFACTURING ENGINEERS
- MANUFACTURING TECHNICIANS
- LASER ENGINEERS
- ASSOCIATE ENGINEERS
- TECHNICAL SERVICES ENGINEERS
- APPLICATION ENGINEERS
- DEVELOPMENT ENGINEERS
- ENGINEERING TECHNICIANS
- FIELD ENGINEERS

- Process Engineers
- Process Technicians
- Product Engineers
- Product Managers
- Research Engineers
- Test Engineers
- General Engineers

### Computer Hardware & Software

- Software Engineers
- Programmers
- Web Developers
- IT Consultants
- Systems Analysts
- Technical Support Staff
- Analysts

### Research & Technical

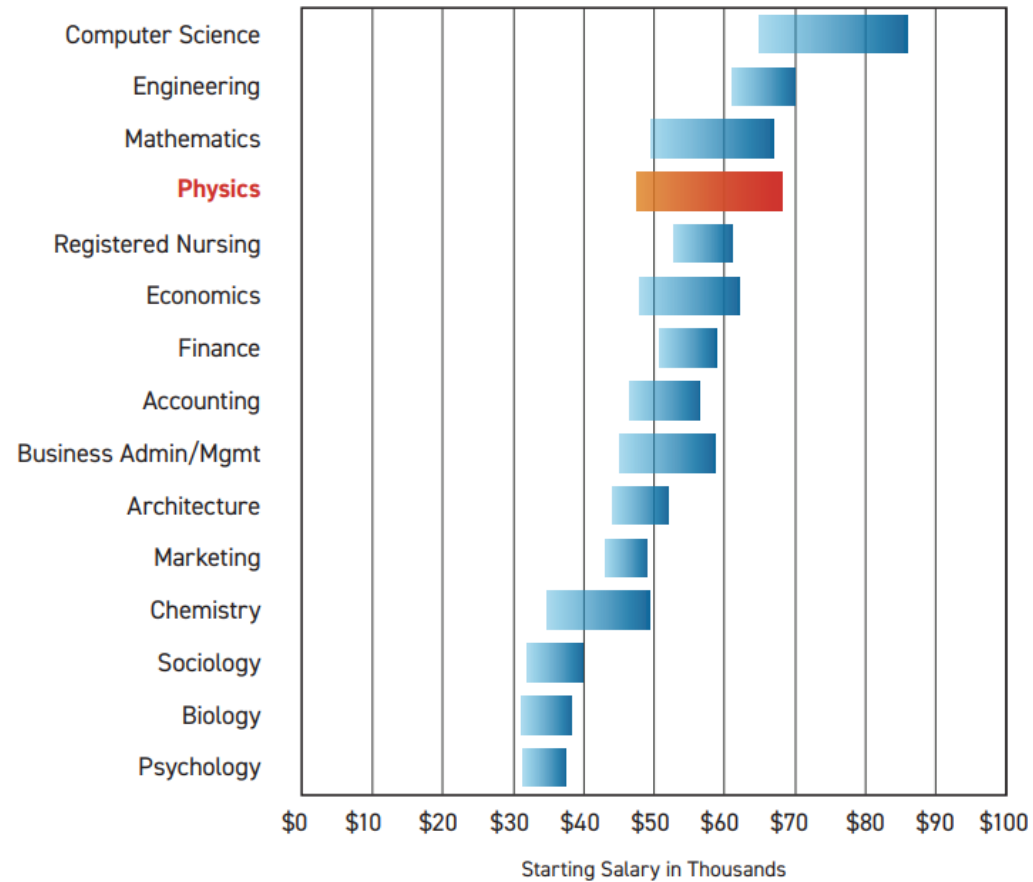
- Research Assistant
- Research Associate
- Research Technician
- Lab Technician
- Lab Assistant
- Accelerator Operator
- Physical Sciences Technician
- Scientist

### Education

- High School Physics Teacher
- High School Science Teacher
- Middle School Science Teacher
- Substitute Science Teacher
- Professional Coach & Tutor

# 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.

## PRE FRESHMEN

1. TAKE THE SAT OR ACT (DO WELL)
2. SPEAK WITH YOUR GUIDANCE COUNSELOR AND ADMISSION RECRUITERS EARLY
3. SELECT THE SCHOOLS AND APPLY FOR ADMISSION

### WHO CAN PROVIDE ASSISTANCE AND INFORMATION?

1. PARENTS AND FAMILY MEMBERS
2. GUIDANCE COUNSELORS, TEACHERS AND OTHER ADMINISTRATORS
3. COLLEGE FINANCIAL AID ADVISORS
4. MARYLAND EDUCATIONAL OPPORTUNITY

## HOW DO I PREPARE NOW?



5. ADMISSION RECRUITERS
6. MILITARY EDUCATIONAL OFFICERS
7. CHURCH FAMILY
8. COLLEGE STUDENTS

- JUNIORS, TAKE THE PRELIMINARY SCHOLASTIC APTITUDE TEST (PSAT)
- REGISTER TO VOTE AT AGE 18
- SUBMIT ADMISSION AND FINANCIAL AID APPLICATION EARLY.
- MALES – BE SURE TO REGISTER WITH SELECTIVE SERVICE (SIX MONTHS PRIOR TO YOUR 18<sup>TH</sup> BIRTHDAY).

# HOW DO I PREPARE NOW?

## MAKING THE FINAL DECISIONS

1. GATHER FAMILY MEMBERS TOGETHER
2. DISCUSS EDUCATIONAL COSTS IN DETAIL (I.E. TUITION/FEES, ROOM/BOARD, BOOKS, SUPPLIES, TRAVEL AND MISCELLANEOUS EXPENSES)
3. SELECT THE INSTITUTION AND CONTACT THE ADMISSION RECRUITER
4. SUBMIT ADMISSION AND FINANCIAL AID APPLICATIONS TO MEET DEADLINES
5. COMPILE SCHOLARSHIP LISTING AND BEGIN TO MAIL LETTERS DURING YOUR SENIOR YEAR
6. KEEP A CALENDAR TO RECORD IMPORTANT DATES THAT YOU NEED TO ADHERE TO ANNUALLY
7. KEEP A JOURNAL FOR REFLECTION

## DURING YOUR SENIOR YEAR

1. BE CERTAIN THAT YOUR COLLEGE RECEIVED YOUR SAT OR ACT SCORES
2. CONFIRM THAT YOU HAVE BEEN ADMITTED
3. REVIEW YOUR FINANCIAL AID AWARD
4. DETERMINE IF DEFERRED PAYMENTS ARE NECESSARY AND MAKE THEM AS SOON AS POSSIBLE.



## CHECKLIST

- GET ADMITTED
- MAIL THE FREE APPLICATION FOR FEDERAL STUDENT AID BETWEEN JANUARY 1<sup>ST</sup> AND MARCH 1<sup>ST</sup>.
- SEARCH FOR SCHOLARSHIPS
- MAKE SURE YOU KNOW THE AMOUNT OF FINANCIAL AID THAT YOU WILL RECEIVE AND SUBTRACT THAT FROM THE COST
- MAKE PAYMENT ARRANGEMENT EARLY
- KEEP IMPORTANT DOCUMENTS HANDY
- TELL A FRIEND TO ATTEND COLLEGE.

# WHY CHOOSE MORGAN STATE PHYSICS & ENGINEERING PHYSICS?

## RELEVANT RESEARCH

AS A PHYSICS MAJOR AT MORGAN, YOU'LL PARTICIPATE IN RELEVANT RESEARCH USING THE SAME STATE-OF-THE-ART ELECTRONIC INSTRUMENTS FOUND IN LABORATORIES AROUND THE WORLD. OUR HAND-ON APPROACH WILL GIVE YOU THE SCIENTIFIC RESEARCH EXPERIENCE YOU'LL NEED TO SUCCEED IN A CAREER OR GRADUATE SCHOOL.

OUR INTENSE CURRICULUM INCLUDES A BROAD RANGE OF COURSEWORK IN SCIENCE AND MATHEMATICS AS WELL AS IN THE ARTS OF HUMANITIES. YOU'LL EXPAND YOUR CRITICAL THINKING AND COMMUNICATION SKILLS AS YOU EXPLORE THE IDEAS AND LITERATURE THAT HAVE SHAPED OUR WORLD.



ARROW Rocket launch demo – 10/2020

WE OFFER VALUABLE RESEARCH PROGRAMS SUCH AS THE NASA GODDARD EARTH SCIENCES TECHNOLOGY AND RESEARCH (GESTAR) INTERNSHIP PROGRAM WHICH PROVIDES INTERNSHIPS FOR STUDENTS IN THE AREA OF EARTH SCIENCE.

OUR STUDENTS WORK ALONGSIDE WORLD CLASS RESEARCHERS TO FOSTER OWNERSHIP OF THEIR LEARNING JOURNEY WHICH IS A VALUABLE OPPORTUNITY TO BOTH UNDERGRADUATE AND GRADUATE STUDENTS.



# TOP EMPLOYERS

AREA EMPLOYERS ACTIVELY SEEK OUR GRADUATES AND OUR GRADUATES GO ON TO DO BIG THINGS!!

TOP RECRUITERS INCLUDE:

- APPLIED PHYSICS LABORATORY
- THE NAVAL SURFACE WARFARE CENTER
- NASA'S GODDARD SPACE CENTER AND
- THE UNITED STATES PATENT AND TRADEMARK OFFICE



Valerie Thomas – Morgan State Physics Graduate,  
Scientist and Inventor of the Illusion Transmitter

# COME JOIN US

