



# Thomas Jefferson High School for Science and Technology 2018 2019

A GOVERNORS REGIONAL SCHOOL FOR SCIENCE AND TECHNOLOGY

6560 BRADOCK ROAD, ALEXANDRIA, VIRGINIA 22312

PHONE 703-750-8300 | FAX 703-750-5010 | WEB tjhsst.fcps.edu

## Unique Mission & Beliefs

### MISSION STATEMENT

The mission of Thomas Jefferson High School for Science and Technology is to provide students a challenging learning environment focused on math, science, and technology, to inspire joy at the prospect of discovery, and to foster a culture of innovation based on ethical behavior and the shared interests of humanity.

### BELIEFS STATEMENT

At Thomas Jefferson High School for Science and Technology, we believe:

1. Critical thinking and problem solving skills are vital in addressing the complex societal and ethical issues of our time.
2. Students learn best in a community where academic disciplines are integrated, fostering an appreciation of how they interact and form a whole.
3. Global interdependence compels us to understand the languages, systems and diverse cultures of people throughout the world.
4. Literature, music and the arts are essential, timeless aspects of human existence.
5. The methods of science provide discipline to our search for structure in the world.
6. Research stems from a combination of fundamental knowledge, individual creativity and curiosity.
7. Effective communication is often the only difference between a good idea and a successful initiative.
8. Collaborative learning, athletics, and extracurricular activities develop leadership and interpersonal skills.
9. Responsibility and integrity are core principles in the pursuit of excellence.
10. Learning never ends.

## About Us

**Ann Bonitatibus**, Principal

**Brandon Kosatka**, Director of Student Services

Thomas Jefferson High School for Science and Technology (TJHSST) is the product of a partnership forged between the business community and Fairfax County Public Schools (FCPS) to improve education in science, mathematics, and technology. This unique FCPS school offers a comprehensive program that focuses on scientific, mathematical, and technological fields. The core skills and values infused throughout the curriculum emphasize and promote critical inquiry and research, problem solving skills, intellectual curiosity, and social responsibility. As the regional Governor's School for Science and Technology in Northern Virginia, the school serves applicants from five participating school districts: Arlington, Fairfax, Loudoun, and Prince William counties, as well as Falls Church City. Of the 425 students in the Class of 2019, 160 are National Merit Semifinalists, and an additional 193 are National Merit Commended students.

## Admissions

Through a competitive admissions process that selects students based upon their demonstrated aptitude and passion for studies in the scientific, mathematical, and technological fields, the TJHSST Admissions Office evaluates and considers prospective students' admission test scores, academic achievement, personal essays, and teacher recommendations. Applications are reviewed by independent selection committees composed of school administrators, counselors, and teachers from schools within the participating school districts.

Each year, approximately 480 students are offered admission to the incoming 9th grade class. The Class of 2022 admissions cycle offered enrollment to 485 of 3160 applicants. Enrollment for the 2018-2019 school year is 1782 students.

Currently, our grade level distribution and enrollment are as follows:

- 9<sup>th</sup> Grade (Class of 2022) – 461 Students
- 10<sup>th</sup> Grade (Class of 2021) – 450 Students
- 11<sup>th</sup> Grade (Class of 2020) – 446 Students
- 12<sup>th</sup> Grade (Class of 2019) – 425 Students

## Student Research

Since its very first graduating class in 1985, student research has played an essential role in learning at TJHSST. Requirements for the Thomas Jefferson High School Diploma include the completion of an original engineering or experimental research project in one of thirteen on-campus laboratories or off-site through a mentorship program at a corporate, government, or university research laboratory.

- Astronomy and Astrophysics
- Automation and Robotics
- Biotechnology
- Chemical Analysis and Nanochemistry
- Computer Systems
- Engineering Design
- Energy Systems
- Microelectronics
- Mobile & Web Application Development
- Neuroscience
- Oceanography/Geophysical Systems
- Quantum Physics and Optics
- Prototyping and Engineering Materials

Selected outstanding research projects are published in TJHSST's annual student-produced research journal, TEKNOS, which has won numerous national awards.

## Mentorship Program

Students in the TJHSST Mentorship Program are involved in research and/or project development at various mentoring agencies, including corporate, university, and government institutions, throughout the metropolitan Washington D.C. area. Students are supervised by mentors who are accomplished scientists, engineers and other technical professionals working at these agencies. The TJHSST Mentorship Program provides an alternative way for dedicated students to fulfill their required senior research project. Scientific laboratory mentorships are often comparable to university undergraduate research courses.

Mentoring agencies that support the TJHSST Mentorship Program include: Children's National Medical Center, The National Institutes of Health, Walter Reed Army Institute of Research, The MITRE Corporation, Naval Research Laboratory, George Mason University, Georgetown University MedStar Rehabilitation Center, Georgetown University, George Washington University, Setty & Associates, Inc., Metron, Inc., Uniformed Services University of the Health Sciences, University of Maryland College Park, United States Food and Drug Administration, Haystack Technology Inc., Phone2Action, Inc., and Preston Wealth Advisors.

## Embedded Activities Period

In addition to the seven academic periods, students are required to participate in an activities period that is included in the instructional day. Affectionately referred to as "8th period", this additional class period of the day affords students the ability to seek out academic support and/or enrichment while also providing them the opportunity to participate in any of the over 150 clubs and activities exploring (but not limited to) diversity, academic competition, outreach, service, and more.

## Accelerated Curriculum

The rigorous college preparatory curriculum provides students with the opportunity to achieve in all disciplines, with an emphasis on the sciences and the technology of applied sciences. All students are required to work toward a 26 credit Thomas Jefferson High School Diploma that parallels the Virginia state requirements for its Advanced Studies Diploma of 26 credits.



# Thomas Jefferson High School for Science and Technology 2018 2019

A GOVERNORS REGIONAL SCHOOL FOR SCIENCE AND TECHNOLOGY

6560 BRADOCK ROAD, ALEXANDRIA, VIRGINIA 22312

PHONE 703-750-8300 | FAX 703-750-5010 | WEB tjhsst.fcps.edu

## Accelerated Curriculum (cont.)

English	4
Mathematics (not including Algebra 1; AP Calculus required)	4
Science (Biology, Chemistry, Physics, and Geosystems)	4
Social Studies	4
World Language (in the same language)	3
Health and Physical Education	2
Fine Arts/Sci-Tech Elective/Cultural Studies	2
Science/Technology Research	1
Computer Science	1
Economics & Personal Finance	1
<b>26 Credits</b>	

## ADVANCED PLACEMENT AND BEYOND

### ADVANCED PLACEMENT COURSES OFFERED

English Lang/Lit	Micro/Macro	Chinese
Chemistry	Economics	U.S. Government
Psychology	Biology	Physics C
French Language	United States History	European History
Calculus AB & BC	Russian	German
Music Theory	Computer Science A	Statistics
Latin Vergil	Japanese	Studio Art
Art History	Spanish Lang/Lit	

\*\* In 2018, 3782 AP Exams were taken by TJHSST students; over 98 percent of exams earned a score of 3, 4, or 5.

### POST-ADVANCED PLACEMENT COURSES OFFERED

(courses that have AP courses as a prerequisite):

Multivariable Calculus	Electrodynamics
Linear Algebra	Neurobiology
Differential Equations	Intro to Organic Chemistry
Complex Variables	Artificial Intelligence 1 & 2
Probability Theory	Parallel Computing 1 & 2
Numerical Analysis	Computer Vision 1 & 2
Concrete Math	Mobile/Web Applications
Advanced Math Techniques	

## FCPS Grading Scale

	Letter	Percent Range (4.0 Scale)
"Excellent"	A	93 – 100 (4.0)
	A-	90 – 92 (3.7)
	B+	87 – 89 (3.3)
"Above Average"	B	83 – 86 (3.0)
	B-	80 – 82 (2.7)
	C+	77 – 79 (2.3)
"Average"	C	73 – 76 (2.0)
	C-	70 – 72 (1.7)
	D+	67 – 69 (1.3)
"Below Average"	D	64 – 66 (1.0)
"Failure"	F	below 64 (0.0)

Weighting:

- Honors courses are weighted with an additional 0.50 quality points.
- AP Courses receive an additional 1.0 weight for year-long courses.
- Selected post-AP courses (semester courses that require completion of an AP course prior to enrolling) receive additional weighting as well.

FCPS Profile: [www.fcps.edu/about-fcps/postsecondaryprofile](http://www.fcps.edu/about-fcps/postsecondaryprofile)

## TJHSST CEEB Code: 470054

### Class Rank

Class rank is not computed or estimated in FCPS or at TJHSST. The Class of 2018 Final Grade Point Averages (after 8th semester) ranged from 3.039 to 4.670.

### College Board SAT Scores (Class of 2017)

	Mathematics	Critical Reading
<b>TJHSST</b>	<b>770</b>	<b>733</b>
FCPS	592	595
Virginia	538	558
National	517	527

### Class of 2018 College Acceptance Data

The FCPS annual survey of seniors reported 99 percent of the Class of 2018 were accepted to and are attending a four-year college or university. (Listing reflects schools where ten or more students were accepted.)

College	Apply	Accept
University of Virginia	348	197
Virginia Tech	243	182
College of William and Mary	168	144
University of Pittsburgh	110	108
Virginia Commonwealth University	99	96
George Mason University	89	84
University of Michigan	135	62
University of Maryland, College Park	69	53
Pennsylvania State University	50	48
Purdue University	57	44
Carnegie Mellon University	147	41
University of Illinois at Urbana-Champaign	77	37
Georgia Institute of Technology	106	31
Cornell University	151	26
Rensselaer Polytechnic Institute	36	26
University of California, San Diego	29	25
Case Western Reserve University	64	24
Northeastern University	44	21
University of California, Los Angeles	63	17
The George Washington University	45	17
James Madison University	21	17
Drexel University	18	17
New York University	40	16
The University of Texas, Austin	33	15
Georgetown University	32	14
Duke University	113	13
University of California, Berkeley	102	13
Princeton University	129	12
The University of North Carolina at Chapel Hill	62	12
Massachusetts Institute of Technology	89	11
The Ohio State University	14	11
University of Washington	14	11
Rutgers University—New Brunswick	11	11
Harvard University	94	10
Washington University in St. Louis	42	10
Boston University	29	10
University of Miami	11	10
University of Colorado at Boulder	10	10

FCPS and TJHSST are accredited by the Virginia State Board of Education and the Southern Association of Colleges and Schools.