The Governor’s School in the Sciences (GSS) brings the best science and mathematics students of the state together for a three-week summer enrichment program hosted by Drew University. The program exposes these exceptional scholars to courses, laboratories, team research projects, and other special events that encourage them to explore a career in science and math, including a Career Day, where alumni join other professionals in sharing their experiences with the scholars.

There are no examinations or grades. The program emphasizes group learning and collaboration within a supportive academic community of fellow scholars, counselors, faculty, and staff. The program also seeks to foster social interactions between the scholars to support and enhance the academic experience. Consequently, scholars experience a taste of what college will be like.

The program is free of tuition and fees, as it operates with generous donations from public, private and corporate sponsors. Scholars for this summer’s program are selected based on the excellence of their academic performance, written essays, standardized test scores, math and science teacher recommendations, and extracurricular activities in and out of science.

Due to the current pandemic, the 2021 program will begin virtually for the first two weeks. If federal, state, and local restrictions at the time allow, the third week of the program will be held on the Drew Campus. If restrictions preclude a residential program, the third week will also be virtual.

ELIGIBILITY

To be considered for the Governor’s School in the Sciences, a student must meet the following criteria:

- The student must be a New Jersey resident and be a high school junior during the 2020-2021 school year.
- The student must have a very strong interest in the sciences and be committed to the acquisition of knowledge and the pursuit of opportunities in that field.
- The student must commit fully to the demanding schedule of the 3-week program during all virtual and residential components. As the full commitment to both academic and social portions of the program is expected, the student should not engage in other activities such as a part-time job or other summer program while the program is in session.
- The student must be one of the top students in his or her school. The student should have primarily “A” grades in honors math and science classes and outstanding scores on standardized achievement tests. Students who have demonstrated very strong scientific abilities outside the classroom can still be strong candidates for the Governor’s School even with weaker standardized test scores.
- Competitive candidates often rank in the top 5% of their class and score above the 90th percentile on standardized tests. A student whose standardized test scores are below the 90th percentile but rank among the best in his/her school are still encouraged to apply if he or she is otherwise qualified.

The Governor’s School encourages all qualified applicants regardless of sex, race, color, creed, national origin, or physical handicap.
PROGRAM DESCRIPTION

Core courses in a variety of different areas of science and mathematics (anthropology, biology, chemistry, mathematics, physics) address aspects of science and mathematics not usually seen in either high school or in the first year of college. Each student takes three core courses. The core courses offered in 2020 were:

- Concepts of Chemical Bonding: An Introduction to Molecular Orbital Theory
- Rulers, Compasses, and famous Impossibilities
- Special Relativity
- Neurobiology
- Human Evolution
- Molecular Biology of Cancer

Book Clubs provide the scholars with the opportunity to engage with an interesting scientific topic through in-depth reading and discussions. Each scholar picks one book club. The book clubs in 2020 were:

- The Power of Light: “Eating the Sun: Small Musings on a Vast Universe”
- Genetics and the (Re)Evolution of Cancer Medicine: “The Emperor of All Maladies”
- The Big Bang
- The Case of Patient H.M.: An Exploration of Neuroscience, Medical History and Ethics

Team Projects provide scholars with the opportunity to work in small teams under faculty guidance on mini-research topics. Results are presented at The David Miyamoto Scholars Conference. There were five team projects in 2020:

- Project in Neuroscience: Mets-Analysis of Single Unit Neural Recordings
- Project in Psychology: Cognitive Illusions
- Project in Computer Science: Machine Learning
- Project in Physics: Quantum Computing
- Project in Biochemistry: Virtual Docking Studies between Drug Molecules and SARS-CoV-2 Proteins

Special Events include colloquia speakers, Career Day, Talent Show, and The David Miyamoto Scholars Conference. Colloquia speakers at the 2020 program were:

- A Conversation with Astronaut Dr. Frank Rubio
  Dr. Frank Rubio was selected by NASA to join the 2017 Astronaut Candidate Class. He reported for duty in August 2017 and having completed the initial astronaut candidate training is now eligible for a mission assignment. The Florida native graduated from the U.S. Military Academy and earned a Doctorate of Medicine from the Uniformed Services University of the Health Sciences. Prior to attending medical school, he served as a UH-60 Blackhawk helicopter pilot and flew more than 1,100 hours, including more than 600 hours of combat and imminent danger time during deployments to Bosnia, Afghanistan, and Iraq. Rubio is a board certified family physician and flight surgeon. At the time of his selection, he was serving in the 10th Special Forces Group (Airborne).

- Taking Control: A risk management model for everyday life
  Jason Winder graduated Drew without any honors whatsoever in 1992 with a degree in economics. Since then he’s gone on to complete an MBA, mainly devoting his professional activities to cybersecurity. In 2003 he founded Aerstone (www.aerstone.com), a boutique cybersecurity consulting firm specializing in security design and testing. Jason is a national intelligence officer, and Aerstone is one of just five firms in the world certified by the NSA for vulnerability assessment. More recently, Jason has been leading Avrio Software – a software company specializing in developing data security and privacy products. Jason lives in Maryland with his wife Sharon; in his spare time he loves travel, cooking, and really anything that gets him away from a computer monitor.

- Autoionization Dynamics of Molecular Rydberg States
  A 2008 alumnus of the NJGSS, Timothy Barnum received a B.A. in Chemistry and Mathematics from Drew University in 2013. At Drew, he performed research with Prof. Ryan Z. Hinrichs using infrared spectroscopy to observe heterogeneous chemistry on model aerosol surfaces and with Prof. Mary-Ann Pearsall using quantum chemical calculations to characterize novel transition metal complexes. In 2020, he completed his graduate work with Prof. Robert W. Field at the Massachusetts Institute of Technology, studying the spectroscopy and dynamics of high angular momentum Rydberg states of atoms and molecules. He is presently a postdoctoral researcher at MIT and his current interests include using rotational spectroscopy to probe gas-phase chemistry and incorporating computational tools in the undergraduate general chemistry curriculum.
THE SELECTION PROCESS

To apply for the Governor’s School in the Sciences, a student must be nominated by his or her high school’s nominating committee. If the high school’s junior class contains at most 325 students, only one student may be nominated for each Governor’s School program. If the high school’s junior class has between 326 and 650 students, two students may be nominated for each Governor’s School program. Three students may be nominated only if the junior class comprises more than 650 students.

Students chosen by their high school's nominating committee are termed “nominees.” The nominee is ultimately responsible for providing all necessary forms and information to her/his high school and working with the high school officials to ensure that the completed application package (including official transcripts, copies of PSAT scores, and the principal's signature) is submitted before the deadline. The high school officials compile all application materials (including the two letters of recommendation) and email the full application as a single PDF document that conforms to the following naming convention: Last Name_ First Name_County.pdf (ex. Jones_Mary_Monmouth.pdf) before the deadline. The application must be emailed by the high school, NOT the nominee, and sent directly to Drew University at the following address: njgss_applications@drew.edu. Applications must be emailed on or before January 15, 2021, 11:59 p.m.

The Governor's School will confirm receipt of the application by late-February in an email to the nominee, the parents/guardians, the principal, and the school counselor listed on the application. At Drew University, a panel of professors, researchers, and educators will review nominees' applications. Using the criteria below, this selection committee will choose the scholars and invite those students to attend the Governor's School. The committee's decision will be emailed to the student on April 13, 2021. Students who are selected, AND a parent/guardian, must then sign and return a commitment form. BOTH signed commitment forms must be mailed on or before April 20, 2021, 11:59 p.m. If one, or both, commitment forms are mailed after April 20, 2021, 11:59 p.m., your acceptance to the Governor’s School will be rescinded. The admissions process is very competitive; in recent years, 15% - 25% of nominees have been offered admission.

SELECTION CRITERIA

The selection committee for the Governor's School in the Sciences aims to craft a student body made up of New Jersey's most talented and enthusiastic students. Our student body should be diverse in myriad ways. Our students should possess a great range of gifts in technology, the arts, humanities, and the sciences. Overall, the committee chooses the nominees who will best take advantage of the opportunities presented by the Governor's School.

Decisions are based on the following qualitative and quantitative criteria:

- The student’s high school transcript and class rank, which should demonstrate that the student is at or near the top of his or her class.
- The student’s essays and reasons for wanting to attend the Governor’s School.
- Letters of recommendation from science and math teachers.
- The student’s extracurricular activities, work experience and community service pursuits.
- The student’s academic and extracurricular honors and accomplishments.
- The student’s standardized test scores (PSAT preferred).

We expect Governor’s School scholars to exhibit great creativity and a unique passion for the nature of our Governor's School. We look for students who have shown a strong interest in science and mathematics, as well as an open mind and the ability to work on a team to explore these interests further. We want to know what a student hopes to gain from the Governor's School experience, as well as what he or she hopes to contribute to the program. In general, nominees who have demonstrated a fervent interest in science and mathematics both inside and outside of the classroom will be most successful in the admissions process. A student with perfect standardized test scores but only superficial interest in the nature of the school is not a competitive candidate. Of course, our scholars are not only devoted to science, but also have outstanding test scores and rank at the absolute top of their class. We are privileged to choose the best of the best.

CONTACT INFORMATION

Dr. Adam Cassano, Director
Yumi Kouh, Administrative Manager

Web: http://www.drew.edu/governors-school/ (Sciences only)  Post Mail: Governor’s School in the Sciences
http://www.nj.gov/govschool/ (all programs)  Drew University
Email: govschool@drew.edu  36 Madison Ave
Telephone: (973) 408-3605  Madison, NJ 07940

Governor’s School in the Sciences Page 3
APPLICATION INSTRUCTIONS

Step 1: Review the program information and descriptions in this packet. Please compile and submit your application packet in the order instructed.

Step 2: Complete the Application Cover Sheet (next page of this packet). The Cover Sheet must be signed and dated by BOTH the nominee and parent/guardian. This should be the first page of your submitted application. Follow the instructions for the Online Student Application Information Form, as stated on the Cover Sheet. After you have completed and submitted the form, a notice will appear indicating that “your responses were successfully submitted” and a confirmation email will be sent to you. Print all the information included in the confirmation email (this is ALL the data you entered online) and attach it after the Cover Sheet

Step 3: After the printed Online Student Application Information Form, include the Nominee and Principal Application Checklists (included at the end of this packet). This must be signed by the nominee and high school principal.

Step 4: After the Application Checklist, include a list of your Extracurricular Activities in order of their importance to you, with emphasis on activities requiring a substantial amount of your time. These can include school sponsored activities, work experience, community service, as well as science, artistic or athletic programs. Be sure to include leadership roles you hold in any of these activities and the amount of time you spend on these activities. Along with this list, please note any honors (academic or extracurricular) that you have received.

Step 5: After the list of Extracurricular Activities, include answers to each of the following essay questions. EACH ESSAY IS LIMITED TO ONE PAGE, SINGLE-SPACED, 12-POINT FONT.

Essay 1) Attach an essay focusing on your scientific interests and aspirations, including any experiences that led to these interests, and how you envision the Governor’s School in the Sciences contributing to these aspirations.

Essay 2) Discovery is the hallmark of science. Attach an essay describing one discovery in science or mathematics and the impact it has had on its field.

Step 6: After the Essays, include two letters of recommendation with original signatures. One must be from a science teacher and the other must be from a mathematics teacher. A letter that is unsigned or not from a science or mathematics teacher will NOT be considered. Additionally, if both letters of recommendation are from two science teachers or two math teachers, only ONE letter will be considered. The nominee must make sure that their teachers refer to our website http://www.drew.edu/govschool/about-njgss and go to “The Application” section for important guidelines on what information should be included in their recommendation letters.

Step 7: After the recommendation letters, your official transcript, with your junior year grades should be attached. This must be an official transcript and include the school’s seal and/or any signature(s), if required or indicated on the transcript. If your junior year grades are not available at the time your application is submitted, your school should email them to njgss_applications@drew.edu once they become available, and they must be emailed on or before February 19, 2021, 11:59 p.m. It is the nominee’s responsibility to ensure that their junior year grades have been emailed by their school and meet the deadline.

Step 8: After the official transcript, verify that your high school has included your official 2020 PSAT Scores. If your most current scores are not available at the time your application is submitted and you wish to have those scores considered, your school should email them to njgss_applications@drew.edu once they become available, and they must be emailed on or before February 19, 2021 11:59 p.m., or they will NOT be considered. It is the nominee’s responsibility to ensure that their PSAT/SAT scores have been emailed by their school by the deadline. If you did not take the PSAT in 2020, include your 2019 scores. You may include your SAT or ACT scores if you have not taken the PSAT. If you have not taken either the PSAT, SAT, or ACT, be sure your principal indicates this on the checklist.

Step 9: Once your application is complete, it is your responsibility to verify that the application has been emailed by your high school to njgss_applications@drew.edu on or before January 15, 2021, 11:59 p.m.

DATES TO REMEMBER

January 15, 2021, 11:59 p.m.: Completed applications must be emailed by the high school to njgss_applications@drew.edu by this date. APPLICATIONS THAT ARE EMAILED AFTER THIS DATE WILL NOT BE CONSIDERED.

February 19, 2021, 11:59 p.m.: Junior grades/PSAT scores email deadline.

By late February, 2020: You will receive an email confirming the receipt of your application.

April 13, 2021: You will receive an email announcing the selection committee’s decision.

April 20, 2021, 11:59 p.m.: Commitment email deadline. IF THE COMMITMENT IS MAILED AFTER THIS DATE, YOUR ACCEPTANCE TO THE GOVERNOR’S SCHOOL WILL BE RESCINDED.
INSTRUCTIONS FOR ONLINE STUDENT APPLICATION INFORMATION FORM

Please visit the Governor’s School in the Sciences website at:
http://www.drew.edu/govschool/

Follow the link to the 2021 Online Student Application Information Form:

1. Complete all fields and click on the “Submit Application Data” at the very end of the form.
2. You will receive a confirmation email immediately following submission. PRINT all the applicant data contained in the email.
3. Attach the printed document to this page.

STUDENT AND PARENT CERTIFICATION

___ I am a resident of New Jersey.
___ I expect to be a high school senior in the 2021-2022 school year.
___ I am willing and able to attend the entire Governor’s School session.

__________________________________________________
Signature of Student ________________________________ Date

This is to certify that I give my permission for the student named above to participate in the Governor’s School in the Sciences at Drew University, in full-time residence.

__________________________________________________
Signature of Parent/Guardian __________________________ Date

APPLICATION CHECKLIST
NOMINEE’S CHECKLIST:  INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED.

___ Application Cover Sheet,
   ___ signed by me
   ___ signed by parent/guardian

___ Online Student Application Information Form,
   ___ Completed and Submitted the online form
   ___ Printed the confirmation email and attached it here.

___ Application Checklist
   ___ Signed by me
   ___ Signed by the principal of my high school

___ List of my extracurricular activities and my extracurricular and academic honors

___ Essay 1
___ Essay 2

___ Two letters of recommendation with original signatures
   ___ Science Teacher
   ___ Mathematics Teacher

___ Official high school transcript. If my junior year grades were not included, I will ensure that my school emails them to njgss_applications@drew.edu by February 19, 2021, 11:59 p.m. once they become available.

___ Copies of my official PSAT (or other standardized test) scores. If my most current PSAT scores were not included, I will ensure that my school emails them to njgss_applications@drew.edu by February 19, 2021, 11:59 p.m.

___ I am a resident of the state of New Jersey and will complete my junior year of high school in June 2021.

___ I have kept a copy of my application for my own records.

I have reviewed the checklist above, and have included all necessary and appropriate application materials. All of the information submitted as part of my application is factual and truthful to the best of my knowledge.

Name of Nominee (Please Print) ___________________________ Nominee’s Signature ___________________________
PRINCIPAL’S CHECKLIST:

___ The nominee is one of our top students and has expressed a strong interest in the Governor’s School in the Sciences.

___ Our school has nominated the correct number of students. (If the junior class has 1 – 325 students, 1 nominee is permitted for each Governor’s School program. If there are 326 – 650 students, 2 nominees are permitted for each Governor’s School program. If there are more than 650 juniors, 3 nominees are permitted for each Governor’s School program.)

___ The nominee has provided the Application Cover Sheet the printed applicant data from the Online Student Application Information Form, this checklist, a list of activities and honors, and two essays

___ I have included the two letters of recommendation
   ___ Science Teacher
   ___ Mathematics Teacher

___ I have included the nominee’s official high school transcript
   ___ The transcript includes grades from the first marking period of the 2020-2021 school year.
   ___ I will email the nominee’s junior year grades to njgss_applications@drew.edu by February 19, 2021, 11:59 p.m.

___ For the nominee’s PSAT (or other standardized test) scores:
   ___ I have included the nominee’s 2020 PSAT scores or I will email the nominee’s most current scores to njgss_applications@drew.edu by the postmark deadline of February 19, 2021, 11:59 p.m.
   ___ The nominee did not take the PSAT in 2020. I have included his/her 2019 PSAT scores.
   ___ The nominee has not taken the PSAT. I have included the nominee’s SAT or ACT scores.
   ___ No PSAT / SAT or ACT scores are available for this nominee.

___ The application package is a single PDF document with the correct name: Last Name_ First Name_County.pdf (ex. Jones_Mary_Monmouth.pdf)

___ The application will be emailed by the high school, NOT the nominee, to Drew University at the following address: njgss_applications@drew.edu.

___ The applications will be emailed before January 15, 2021.

___ The nominee is a conscientious, eager student and ranks near the top of his/her class.

___ The nominee’s standardized test scores are among the best in our school.

___ This nominee has not been nominated to more than one Governor’s School.

___ The nominating high school has kept a copy of this application on file.

I have reviewed the checklist above, and have included all necessary and appropriate application materials. All of the information submitted as part of my application is factual and truthful to the best of my knowledge.

____________________________________________________
Name of Principal (Please Print)  Principal’s Signature