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VANDERBILT  
SUMMER  
ACADEMY

# 2019 CATALOG



**Residential Options for Rising 7th–12th Graders**

**SESSION 1: JUNE 9–14 (Rising 7th–8th)**

**SESSION 2: JUNE 16–28 (Rising 9th–10th)**

**SESSION 3: JULY 7–26 (Rising 11th–12th)**



VANDERBILT  
PROGRAMS FOR  
TALENTED YOUTH

Developing talent in gifted  
students and those who  
work with them

# Contents

## PTY Overview

About PTY .....	2
Academic Life at VSA .....	4
Residential Life at VSA.....	6
Dates and Tuition.....	8
How to Apply .....	9
Eligibility.....	9
Admissions Process/Procedures.....	10
Financial Assistance .....	12
Tuition Timeline .....	12
Frequently Asked Questions .....	13
Session I Course Catalog .....	16
Session II Course Catalog.....	20
Session III Course Catalog.....	24
VSA Faculty.....	28
Admission Application.....	31
Financial Aid Application.....	35



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**“I welcome your young scholar to campus, and I trust that the opportunities for interaction with like academic peers and work with leading content experts will be an unforgettable and life-changing event for your gifted student.”**

— TAMRA STAMBAUGH , Ph.D.

Executive Director, Vanderbilt Programs for Talented Youth  
Research Associate Professor, Peabody College

# On behalf of Vanderbilt Programs for Talented Youth, we invite you to join us this summer to live and learn at one of the world's finest universities.

Dear Future VSA Students (and Parents),

Vanderbilt Summer Academy is an intentionally designed accelerated summer experience for academically advanced students, grounded in **academic rigor** and **scholarly exploration**, while also focused on fostering a strong sense of **community and friendship**. Under the expert leadership of **dedicated staff**, VSA offers three different age-based residential sessions for students ranging from 7th to 12th grade. The older you are, the longer you stay on campus enrolled in a rigorous class and living in a residence hall. VSA programs provide the perfect balance of an intensive academic environment combined with a community-driven residential experience at one of the leading universities in the nation.

At VSA, you will join peers from around the world as you stretch your intellectual boundaries through choice-based classes, enjoy learning and connecting with like-ability peers, and engage in on-campus and community activities in the heart of Music City. When you choose VSA, you are choosing to a) experience academic rigor, b) become part of a positive and supportive community, and c) have fun learning alongside a dedicated faculty and staff.

**Academic rigor.** It's hard to describe the energy in the room when leading content experts and researchers passionately share emerging research, groundbreaking techniques, and paradigm-changing ideas with inquisitive VSA students. The enthusiasm is contagious! From the political history of nineteenth-century map-making to the intricacies of nanotechnology, professors, Ph.D. students, and content experts from Vanderbilt and the wider Nashville community who serve as our VSA instructors bring unrivaled expertise and credentials to facilitate your academic experience. You don't have to wait until college or graduate school to engage in exploring the relationship of law and morality in our Philosophy of Law course, dive deep into large scale decision making that affects societal development in our Big Data Analysis class, or shadow a doctor making rounds in Med School 101. VSA immerses you in new content and experiences that will ignite your curiosity, expand your knowledge, and spur your passion in a current or new-found area of interest!

**Positive and supportive community.** Academics are important, but so is our residential life experience. In student feedback year after year, students consistently point to the remarkable VSA community as a highlight of their time on campus. Everyone is encouraged to be their unique self as we celebrate commonalities and differences. We learn from each other and explore how our individual backgrounds contribute to the larger community that makes VSA what it is. For many students, VSA residential halls and Vanderbilt's beautiful lawns offer spaces for meaningful evening conversations with hallmates and classmates about everything from pop culture and philosophy to high school life and college planning. These connections are often the beginnings of flourishing friendships that provide support and

encouragement well beyond the summer. Nightly proctor group meetings and a variety of small and large group activities inside and outside the classroom ensure students have the opportunity to share stories and make new friends with a lot of smiles and laughter along the way. VSA is a place where friendship meets scholarship.

**Dedicated faculty and staff.** The heartbeat of VSA is found in the undergraduate students, graduate students, and professionals who dedicate their summer to facilitating life-changing student experiences. Our faculty and staff, from professors to college students, help guide students through both the academic and the residential experiences at VSA. Instead of pursuing internships, vacations, or summer courses, VSA's remarkable staff, from a variety of backgrounds and interests, have chosen to support VSA students. Our students appreciate the powerful relationships they form with VSA staff wherever conversations come up—in the classroom, dining hall, or residence halls, or on the sand volleyball court. In addition to our summer staff, our full-time VSA team also lives on campus in the residential halls. This unique 24/7 senior presence highlights our team's unrivaled dedication to student experience and parent peace of mind. Our staff also likes to have fun! From dances and carnivals, to board game and spa nights, movies, and Nashville outings, there is never a dull moment outside of the classroom at VSA.

**As a parent,** know that when you choose VSA, you are choosing a one-of-a-kind student experience that, from application to check-out, is carefully designed with the academic, social, and emotional growth of your daughter and/or son in mind. We pride ourselves on building strong relationships with families, creating developmentally appropriate on-campus experiences, and making decisions with student safety and interests in mind.

**As a student,** know that when you choose VSA, you are choosing a remarkable holistic experience that will challenge you to pursue rigorous academic inquiry and will provide an unforgettable residential experience, giving you the opportunity to engage with others of similar and varying backgrounds and experiences. At VSA, you will learn a lot academically, but you will also learn a lot about yourself and others. As you look through the pages of this catalog, picture yourself on our campus, immersed in your academic passion, and imagine yourself part of a program unlike any other.

We hope to see you here this summer!

Sincerely,



Mark Shivers, Ph.D.  
VSA Director

#vsa2019  Vanderbilt PTY  @vanderbiltpty  @vanderbiltpty

APPLY ONLINE: [PTY.VANDERBILT.EDU/VSA](http://PTY.VANDERBILT.EDU/VSA) (615) 322-8261

# About Programs for Talented Youth

## WHAT WE DO

We develop talent in gifted students and those who work with them by:

- 01.** Offering Saturday and summer pre-collegiate and accelerated programs for gifted students in grades K–12
- 02.** Supporting families and educators in learning more about gifted students through specially designed workshops, conferences, and course work
- 03.** Conducting research and publishing evidence-supported articles, books, and curriculum for educators and parents
- 04.** Creating community partnerships and seeking outside funding to support the talent development of gifted students from low-income and underrepresented backgrounds



## PTY HISTORY

In 2000, PTY was founded by Camilla Benbow, Patricia and Rodes Hart Dean of Education and Human Development and co-director of the Study of Mathematically Precocious Youth. Dean Benbow was the protégé of the original founder of talent searches, Julian Stanley. When PTY was founded, our staff led an academic, accelerated program in the summer for gifted middle and high school students. The program underwent significant changes and restructuring in 2006. Since that time, our student enrollment has tripled, and we now provide year-round accelerated academic course work for gifted students in kindergarten through high school, generally led by Vanderbilt faculty, graduate students, and content experts. From 2008 to the present, we have consistently increased our scope of work to include professional development opportunities for educators, course work in gifted education, and academic research related to giftedness and effective services, curriculum development, and work specifically focused on gifted students from low-income backgrounds. Executive Director and Research Associate Professor Tamra Stambaugh leads Programs for Talented Youth along with Assistant Director Sarah DeLisle and an incredibly talented and dedicated team.

## PTY STUDENT PROGRAMS

We host students from across the globe. During a typical residential program year, at least thirty different states and at least ten countries other than the U.S. are represented. Day programs for our younger students enjoy representation from multiple states including Tennessee, Alabama, and Kentucky, and as far away as Texas, Michigan, California, Pennsylvania, and Florida. Approximately 20 percent of our students receive some type of need-based tuition reduction. Through student programs, Vanderbilt faculty and content experts teach accelerated courses that focus on:

- **Exposure** to a variety of accelerated content areas in which students have documented potential and interest
- **Efficacy** in one's ability to perform rigorous tasks in a content area and development of social-emotional habits of scholars
- **Expertise** and in-depth learning in an area of interest and talent

## WHY SHOULD WE CONSIDER OUT-OF-SCHOOL PROGRAMS FOR GIFTED STUDENTS?

**When gifted students participate in extracurricular, accelerated academic programs, such as those offered by Vanderbilt Programs for Talented Youth, they:**

- Are more likely to take advanced high school courses
- Are more likely to seek admittance into highly selective colleges after high school
- Are more likely to pursue professional careers in advanced academic areas
- Enjoy a high level of challenge and pacing, not otherwise provided by many schools
- Gain access to university faculty and content experts earlier in their academic careers, which can fuel a lifelong pursuit of a key content area
- Are more likely to take academic risks
- Develop a sense of independence

**Specifically our students say that when comparing one of our programs to their school, they:**

- Find our courses more enjoyable and interesting
- Have more opportunities to engage in critical thinking
- Feel more supported and understood by their instructors
- Feel more supported by their peers
- Feel normal and accepted for who they really are
- Are more challenged and not bored

Programs like ours may also curb underachievement tendencies in students who may no longer engage in school because of a lack of interest, slow pacing, or little challenge. (Olszewski-Kubilius, 2006; Stambaugh, 2010)

## WHY CHOOSE PTY PROGRAMS?

- Vanderbilt University is known as a center for collegiate education and is a tier one research institution.
- Vanderbilt Peabody College of education and human development has been named one of the top ten graduate schools of education by *U.S. News & World Report* since rankings began and has been ranked number one five times.
- PTY has highly qualified, experienced, and compassionate staff who are experts in their field and understand the academic and social-emotional needs of academically gifted learners.
- Many PTY instructors and consultants are nationally and internationally known and widely published in their respective fields.

“At PTY, I was surrounded by like-ability people who included me and challenged me to be the best person I could be. I loved being taught and supported by Vanderbilt professors and professionals who helped me think about my future.”



# Academic Life at Vanderbilt Summer Academy



## OUR PHILOSOPHY

Vanderbilt Summer Academy offers a challenging introduction to the academic rigors of college life. You will enjoy the excitement of in-depth, accelerated study of a fascinating subject within a community of your intellectual peers. Our courses, outlined in this catalog, include wide-ranging, interdisciplinary topics such as nanotechnology, religious studies and philosophy, history, and medicine.

Regardless of where your interests take you, we have courses designed to provoke ongoing discussion and learning. Above all, Vanderbilt Summer Academy will uniquely challenge and foster your abilities in a supportive and engaging environment.

## OUR FACULTY

Vanderbilt Summer Academy instructors are drawn from the wealth of talented faculty and scholars here in the Vanderbilt University and Nashville communities and include many distinguished professors, scientists, and researchers. All instructors are carefully selected not only for achievements in their fields, but also for their commitment to excellence in classroom teaching. Our outstanding VSA faculty serve as academic role models, providing instruction and insights into their areas of study. In addition to the instructors, a teaching assistant (TA) with demonstrated experience in the content area or pedagogy supports each class. The TA serves as a resource to the instructor and to the class—sharing his or her perspective on the subject matter while helping to promote a learning environment that encourages academic risk-taking and relationship building.

## Why VSA?

We recognize that you have many choices of summer academic programs. Here are some aspects of VSA that set it apart.

- **Access to scholars.** Vanderbilt faculty and doctoral-level scholars teach most of our classes, so you'll work with true content experts.
- **Small classes.** Classes have 12–16 students in most cases.
- **Personalized attention.** Each class has a dedicated instructor and teaching assistant.
- **Opportunities for personal development.** From recreational activities to informal conversations about college life and information sessions with admissions representatives, VSA celebrates the whole you!
- **Campus living.** VSA students reside in a state-of-the-art first-year residence hall designed for social interaction with your community of like-minded intellectual peers.
- **Parent education.** VSA offers a special opening-day information session for parents, covering a range of topics relating to gifted teens and college admission processes.
- **Caring staff.** Our program staff is a dynamic team of carefully selected, fully trained individuals who are passionate about supporting advanced learners like you.



“My instructor had a perfect mix of discussion, lecture, and activities in the class. I learned new things every day, and I was challenged.”

## OUR COURSE WORK

The Vanderbilt Summer Academy course curricula are designed to meet the intellectual needs of advanced students.

Vanderbilt Summer Academy courses are:

- Accelerated and unique, offering you the opportunity to explore areas of study not typically available elsewhere
- Fast paced and rigorous with an emphasis on critical and creative thinking
- Drawn from a broad range of disciplines in order to maximize the potential for interdisciplinary study
- Rooted in the rich academic and cultural environment of Vanderbilt University and the surrounding Nashville community

Vanderbilt Summer Academy offers the opportunity to explore exciting new areas of study—in and out of the classroom. Many courses offer visits to campus libraries, laboratories, archives, and studios, not to mention occasional field trips to off-campus resources that Nashville provides. The innovative curricula allow you to learn through hands-on activities, real-world scenarios, laboratory experiments, lively group discussions, and self-directed projects.

With six hours a day devoted to academic learning, VSA courses allow for a satisfying level of focus and depth. And while the course work can be exciting and intensive, outside of class you will be able to fully enjoy the social and recreational activities Vanderbilt Summer Academy has to offer.

## FEEDBACK AND ASSESSMENT

In order for students to best experience the joy of learning within a group of true intellectual and social peers, VSA is a non-graded program and does not offer credit for course work. This design allows VSA students to take part in accelerated learning in an environment tailored to promote academic risk taking. We encourage you to push your intellectual limits without fear of failure. Instead of a grade, students receive a performance evaluation at the end of the course. This thoughtfully prepared constructive feedback from the instructor will help you accurately assess your achievements in the course work. More than a number or letter, this rubric is designed to help you understand your performance and abilities and to guide you in charting your future academic endeavors. In addition, because Vanderbilt Summer Academy realizes that parents are important partners in the intellectual growth of their children, instructors make themselves available to parents for an optional end-of-session open house (Session I) or one-on-one conference (Sessions II and III), in person or over the phone, on the concluding day of the session. These conferences enable parents to spend time with a content expert to discuss student performance in the area of study and to inquire about options for further advanced work in a particular field. More information about securing this unique access is provided after admission.

# Residential Life at Vanderbilt Summer Academy

Vanderbilt Summer Academy isn't only about the academic experience. We believe that life outside the classroom is just as important as what goes on inside. VSA staff work hard to create programming that enlightens and excites VSA students when they are not in class. Each weekday, you will participate in an extracurricular class in the afternoon, and, every evening, you will be able to participate in a wide range of activities—from Ultimate Frisbee and field days to tie-dyeing and talent shows, there is never a dull moment. In addition, time is built into the schedule to allow plenty of opportunities for you to unwind and socialize with your new friends. Not only will you have the chance to live on a college campus, but also you will get to sample some of the many cultural and entertainment offerings of Nashville through group outings and field trips.



## HOUSING: THE INGRAM COMMONS AT VANDERBILT

Vanderbilt leads the country in its commitment to create the best possible undergraduate learning environment. At the heart of this objective lies the mission of The Ingram Commons—a unique program designed to make the first-year college experience challenging, fun, and fulfilling. This collaborative community nurtures and develops proactive, intentional learners and invites an invigorating exchange of ideas. Learn more at [commons.vanderbilt.edu](http://commons.vanderbilt.edu).

At Vanderbilt Summer Academy, you don't have to wait until you are a college student to enjoy The Ingram Commons experience. The Ingram Commons will be your "home away from home" at VSA. This array of first-year residence halls combines the best of modern conveniences within classically elegant architecture. The Commons residence halls are centrally air-conditioned and include access to laundry facilities. Dorms and/or floors are separated by gender, and communal bathrooms are available on each hall. Large common areas for games and social interaction are also prime features of each residence hall and provide students with shared space to take part in their living and learning community. A temporary home on The Ingram Commons will give you a sneak peek into Vanderbilt's residential experience for first-year students.

## RESIDENTIAL STAFF

Our leadership team includes full-time PTY staff who move into the dorm and work closely with carefully selected and trained residential proctors. Proctors foster community within the residence hall and guide students through evening and weekend activities. Each VSA proctor lives on the same hall as his/her assigned same-gender proctor group of 12–15 students. Students meet each evening with their proctor groups and enjoy occasional group outings together. VSA residential staff is large in number, and positions range from program assistants to a head of student support, a head of operations, and a residential activities planning team. Our staff (some of whom were VSA students years ago) is eager to welcome each session to campus and provide a warm and encouraging environment for new and returning students.

## DINING

Vanderbilt Summer Academy students eat most of their meals in campus dining halls, which offer a wide variety of healthy and savory selections including vegetarian and vegan options. Students with food allergies and/or dietary restrictions will find VU dining to be an accommodating partner. We understand that dietary restrictions can be serious in nature. Don't hesitate to call our office to discuss meal accommodations. All meals served in the dining halls or at VSA-wide events are covered in the tuition. However, students may choose to bring some money from home to purchase coffee drinks and snacks from on-campus markets.



## SAFETY, HEALTH, AND STUDENT SUPERVISION

Vanderbilt Summer Academy recognizes the importance of proper health and safety for everyone in our program. Our trained staff live in the residence hall, supervise activities, and maintain the overall well-being and safety of students during the program. Students spend the majority of their evenings and weekends participating in supervised events and activities. Discretionary time will vary by session. The VU Police Department partners with VSA in securing the residence hall and campus. The VSA residence halls house only program participants and authorized Vanderbilt staff. All students are provided with electronic access cards to their residence hall.

Because Vanderbilt Summer Academy is an opportunity to experience communal living, some of the responsibility for health and safety rests with students. Students will be informed of the program guidelines for behavior, participation, and campus boundaries in the *Vanderbilt Summer Academy Student Handbook*, which will be provided upon admission. All rules are designed to foster a healthful, respectful environment where everyone can find success and enjoyment. In the event that a student needs medical attention while at VSA, Vanderbilt University Medical Center, which includes the Monroe Carell Jr. Children's Hospital at Vanderbilt, is located next door to the campus. Specific policies about personal medications, health history, student health concerns while on campus, and insurance requirements are outlined in the required welcome paperwork and VSA student handbook.

## OUTSIDE OF CLASS

While Vanderbilt Summer Academy is academically focused, recreational programming offers organized activities for social-emotional balance within your day. In addition to free time, you'll have numerous opportunities to choose from a number of pre-arranged activities to fill your afternoons, evenings, and Session II and III weekends. Typically, events range from casual get-togethers to structured events both on and off campus.

### After Class Exploration (ACE)

Once the academic course has ended for the day, students participate in an After Class Exploration (ACE) activity, which typically provides an artistic or athletic opportunity. ACE offerings for each session vary, and students will take part in a different ACE each week of their session. Often creative or physical in nature, these classes are designed to engage you in a new experience and provide different opportunities from your academic class at VSA. More information about ACE enrollment will be provided after admission into the program. ACE takes place for about an hour each academic day.

### Free Time

After a structured day, VSA students have about an hour of free time before dinner. This is a great chance to meet up with friends, get in a workout, or enjoy some quiet time on the patio. New to VSA? Hoping to meet new friends? Don't worry! Our residential staff are present during free time and host low-key, drop-in activities for anyone looking to join a casual group craft time or a board game. You will be free to step in and out of activities that appeal to your interests.

### Evening and Weekend Options

Each of our VSA sessions has a slightly different blend of evening activities depending on the age of the students and length of stay. Sessions I and II feature a more structured blend of post-dinner options, while Session III offers more flexibility and independence. Regardless of session or grade level, VSA strives to offer a variety of low-, medium-, and high-energy activities so that each student may select the activity that best matches his/her interest and curiosity. Session II and III students have the additional benefit of VSA weekends. During this time, other on-campus events and off-campus outings are arranged—from theme dances to VSA carnivals, scavenger hunts, and movies, weekends on campus are engaging and fun. Off campus weekend events are designed with a particular eye toward exploring the rich diversity and culture of Music City. All outings and activities are included in the tuition cost. Students may wish to bring spending money to purchase souvenirs/snacks.

### Winding Down Each Day

After a full day of class and events, students have time to wind down each night with a stretch of free time. This hour is designed to allow you the chance to catch up with floormates, have one last conversation on your floor's common area, and begin preparing for bedtime. You'll also check in with your proctor group during this time for proctor group bonding, daily reflection, and important reminders for the days ahead.

"My proctor was truly a source of joy and laughter. He made me feel welcomed with his humor and in his creativity in choosing activities that brought me closer to other VSA students."



"I loved my proctor! She made my time here very memorable. All the experiences at VSA—both in and out of class—came together to make an awesome experience."

## Summer Dates and Tuition

Vanderbilt Summer Academy 2019 offers three sessions designed for different grade levels.

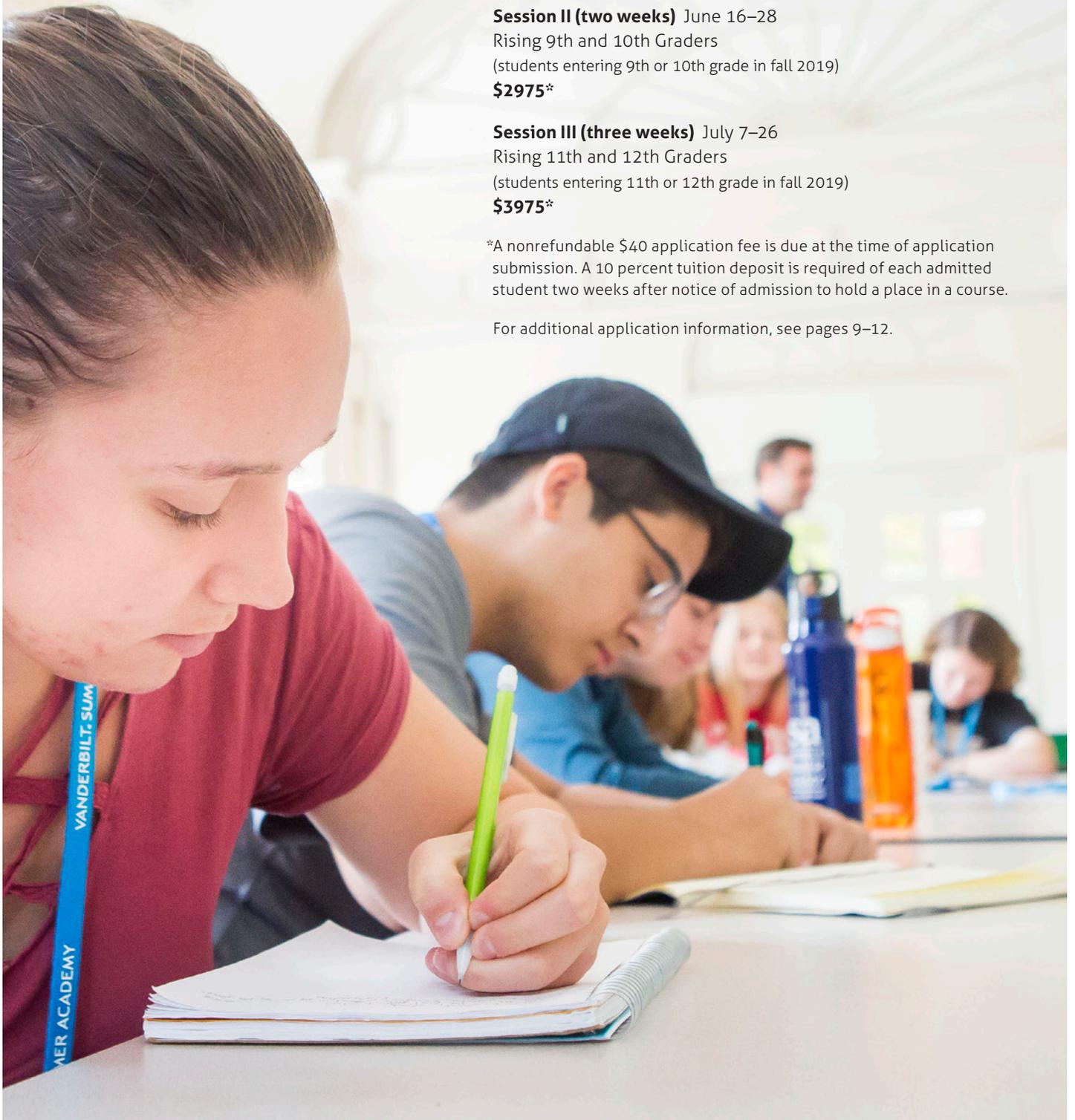
**Session I (one week)** June 9–14  
Rising 7th and 8th Graders  
(students entering 7th or 8th grade in fall 2019)  
**\$1375\***

**Session II (two weeks)** June 16–28  
Rising 9th and 10th Graders  
(students entering 9th or 10th grade in fall 2019)  
**\$2975\***

**Session III (three weeks)** July 7–26  
Rising 11th and 12th Graders  
(students entering 11th or 12th grade in fall 2019)  
**\$3975\***

\*A nonrefundable \$40 application fee is due at the time of application submission. A 10 percent tuition deposit is required of each admitted student two weeks after notice of admission to hold a place in a course.

For additional application information, see pages 9–12.



# How to Apply

## There are two application options:

01. Complete the appropriate application online at [pty.vanderbilt.edu/students/vsa/](http://pty.vanderbilt.edu/students/vsa/). With this option, you may upload test scores or portfolio documents, and the application statement, and select a payment method for the \$40 nonrefundable application fee.
02. Complete the enclosed application form and application statement, and mail them to the address listed on the application. Include a check, made payable to Vanderbilt University-PTY, for the \$40 nonrefundable application fee. Please include a copy of your test scores or portfolio documents with the application. Faxed or emailed applications are not accepted.

## ELIGIBILITY

When students apply to Vanderbilt Summer Academy, qualifying documentation will be requested at the time of application; qualifying documentation, however, may take a variety of forms. Students may submit ACT, SAT, or PSAT scores near the 95th percentile and above in one or both sections of the test, or an admission portfolio for further assessment and review. While standardized test scores around the 95th percentile are typically a strong indication that VSA is an appropriate curriculum match for a student, we recognize that there are circumstances in which test scores are either unavailable or not the best indicator of a student's academic potential. For this reason, VSA also accepts a portfolio application composed of supporting documents that provide a well-rounded assessment of a student's advanced academic performance. To learn more about qualifying test scores or the specific portfolio requirements, please see the applicable sections of this page.

### Test Scores

The table outlines scores by grade and test type that correspond to the 95th percentile. Typically, VSA students who score at this level for their age and grade are successful within the rigor of our program. Beginning March 2016, a new version of the SAT was offered with a few changes to the numerical score assessment. VSA accepts SAT scores from either the old or new SAT, and we've listed the 95th percentile scores for both tests below. To determine eligibility, make sure to compare your student's scores with the student's grade at the time of the test, the specific test taken, and the corresponding eligibility score.

Test scores—based on the grade in which the student took the test.			
Grade	Old SAT	New SAT	ACT
7th Grade	500M or R	26M or 27 R	20M or R
8th Grade	550M or R	28M or 30 R	22M or R
9th Grade	590M or R	30M or 32 R	25M or R
10th Grade	620M or R	32M or 33 R	27M or R
11th Grade	670M or R	35M or 35 R	29M or R

Students need only to qualify in one subject area, as long as that area is commensurate with the course content the student is interested in taking. For example, students with a high score only in writing and language may be eligible for a writing-based course. Questions about this particular section of the SAT for eligibility purposes may be directed to the VSA office.

Once a student has qualified for VSA, he or she does not have to submit further test results for subsequent years.

You can register directly for either the SAT or the ACT through their websites (though an official report mailed directly from The College Board/ACT is not required):

**collegeboard.com** Vanderbilt PTY code: SAT 3697

**actstudent.org** Vanderbilt PTY code: ACT 5165

We also accept ACT/SAT scores achieved through talent search programs such as the Duke Talent Identification Program (TIP), Northwestern University Midwest Academic Talent Search (NUMATS), or Johns Hopkins Talent Search, but you are not required to go through a talent search to apply to Vanderbilt Summer Academy.

VSA accepts PSAT scores. To understand how the PSAT score denotes eligibility, examine the PSAT score for either math or critical reading. Similar to the SAT and ACT eligibility scores, a score near the 95th percentile or above in either math or critical reading would qualify the applicant for VSA. In addition to a new SAT, the PSAT has undergone recent revisions, so if you have questions about PSAT eligibility, call our office.

### Portfolio

For students who wish to submit a portfolio of materials in lieu of SAT/ACT/PSAT scores, VSA offers this option. To apply via portfolio, students should complete the VSA application and application statement and submit the following items:

- A recent nationally normed school-based assessment or an ability test indicating around a 90th percentile or higher score in at least one full-section (e.g., total math, total reading, verbal, nonverbal). Acceptable assessments include but are not limited to: ERB, CogAT, Terra Nova, TCAP, ITBS, Stanford Achievement Test, OLSAT, MAT
- Two teacher recommendation forms (form request available on the PTY website under "Forms and Documents")
- School transcript or recent report card (transcript preferred)
- A work sample from recent course work relating to the first-choice VSA course the student wishes to take

See [pty.vanderbilt.edu/students/vsa](http://pty.vanderbilt.edu/students/vsa) for more details.

Once an online application account is created for your student, all qualifying documents can be uploaded into our online application system.

### Testing for Rising 7th-grade Applicants

Rising 7th-grade applicants may qualify through SAT/ACT/PSAT scores or the portfolio qualification method, but a portfolio is most common. Call our office with questions about rising 7th-grade eligibility.

### Course-specific Prerequisites/Requirements

A small number of courses require supplemental materials in order to determine specific course eligibility and fit. See course listings in the back of the catalog to determine if you need to include the following supplemental materials as part of your application.

- Transcript
- One online teacher recommendation form (form request available online on the PTY website under "Forms and Documents")

If you are applying in the priority window, you may request recommendation forms to be completed by your teacher before the start of the application priority window to ensure that all supplementary materials are provided by the close of the window. Applications that require supplemental information are not considered complete until all additional materials are provided.

# VSA's Admissions Process and Procedures

## APPLICATION PRIORITY WINDOW

On Wednesday, February 6, 2019, at noon CT, the online application for Summer VSA 2019 will be available for submission on the PTY website. There will be a one-week application priority window, which will end Wednesday, February 13, 2019, at noon CT. Paper applications received before or during the window will be time stamped as received during the window.

All applications received during the application priority window will be considered part of the primary application pool regardless of the specific time submitted. All complete and qualifying applications submitted during the application priority window have the same chance for placement. Upon the close of the window, all applications received will be randomly assigned a number determining their order in the review queue.

Applying during the priority window does not guarantee admission, but it increases students' chances of admission. We strongly recommend that students apply during the window. If space in a course remains after the priority window closes, courses will be filled on a first-come, first-served system, based on eligibility and availability. A waitlist will be maintained for full courses.

## COURSE PLACEMENT

In your application, you should rank your course choices in order of preference, with 1 indicating your first choice. You may rank as many choices as you like. We will make every effort to place you in your first choice. However, courses fill very quickly, and we will place you into your highest-ranked course based on seat availability at the time we review your application. Thus, rank only courses you are willing to take. Once you are placed in a course you ranked, you will be notified and your spot will be held with your nonrefundable 10 percent tuition deposit. If you are placed in a lower-ranked course, you will remain on the waiting list for any higher-ranked courses regardless of whether you pay the deposit to secure your spot in a lower-ranked course.

## ADMISSIONS NOTIFICATIONS

Once a completed application has been submitted, a student can typically expect an admission notification via email within three weeks. If the student is admitted and a spot is available in a ranked course, the admission notice will also include the tuition statement and instructions for paying the 10 percent tuition deposit, which holds the student's place in the course. For families who have applied for financial aid, financial aid information may be included in the admission notice if financial aid materials have already been submitted. The tuition deposit for financial aid applicants will not be due until the financial aid materials have been processed and the award communicated to the family. Only complete applications are fully processed, so, if any items are missing (e.g., application fee, qualifying documents, application statement, etc.), PTY will contact you to alert you to the incomplete status, and you will have five business days to submit the missing items.

## PAYMENT

Payment for Vanderbilt Summer Academy has three primary components—application fee, deposit, and tuition.

**Application Fee:** A \$40 nonrefundable application fee is due at the time of application submission. If you are applying by mail, please include a check/money order for the application fee. Checks should be made payable to Vanderbilt University–PTY. Online applicants will submit the application fee via credit card during the application submission process.

**Tuition Deposit:** If a student is placed in a course, a 10 percent tuition deposit is due two weeks after notice of admission email to hold a spot in the course. Details on how to pay the tuition balance by check or online will be provided through the emailed admissions notification. The tuition deposit is nonrefundable. The tuition deposit for applicants who apply for financial aid will not be due until financial aid materials have been processed and the aid amount communicated to the family. For individuals who receive financial aid, the tuition deposit is 10 percent of the remaining tuition balance after aid has been applied.

**Tuition:** Tuition payments (less the deposit) are due May 3, 2019, for Session I students and April 12, 2019, for Session II and Session III students. See page 12 for more details on tuition due dates and refund policies for each VSA session.





## WAITING LIST

A waiting list notification is due to space availability only and is no indication of student ability or merit. At the time of your application review, if no openings remain in your first choice course, we will look to see if a seat is available in your second choice course, and so on. Even if we place you in a lower-ranked course (due to availability), you will remain on the waiting list(s) for your higher-ranked course(s). If a seat becomes available in a higher-ranked course, we move the first student on the waiting list into that seat. Waiting lists are held until close to the start of the program session. No tuition deposit will be owed until you are placed in a course that you ranked in your application. The application fee, however, is nonrefundable.

## CANCELLATION POLICY

The \$40 application fee is nonrefundable for all applicants. A student who withdraws from the program after submitting the 10 percent tuition deposit will receive a tuition refund for any amount paid above the deposit amount if VSA is notified before the tuition deadline. A refund of 50 percent (less the application fee and deposit) will be provided if a cancellation is made after the tuition deadline and before the refund deadline. No refunds will be granted after the refund deadline for the session. See the Tuition Timeline on page 12 for session-specific tuition and refund deadlines.

## WELCOME PAPERWORK

After admission into the program, families will receive a packet of required welcome paperwork. Required paperwork includes emergency contact information, participant permission, medical information, immunization records, media release, etc. All students who participate in programs through Programs for Talented Youth (PTY) must have current health insurance documentation and welcome paperwork on file with PTY.

## QUESTIONS?

### Contact Us:

**Phone:** (615) 322-8261

**Email:** [vsa.pty@vanderbilt.edu](mailto:vsa.pty@vanderbilt.edu)

**Fax:** (615) 322-3457

# Application Checklist, Financial Assistance, and Tuition Timeline

## TUITION TIMELINE

### Application Fee

**\$40**

This is a nonrefundable fee that covers the cost of processing an application and retaining waiting lists.

### Tuition Deposit

**10 percent of tuition**

The tuition deposit is due two weeks after notice of admission email to hold a spot in a course. For individuals who receive financial aid, the tuition deposit is 10 percent of the remaining tuition balance after aid has been applied. The tuition deposit is nonrefundable.

### Tuition

**Session I: \$1375**

**Session II: \$2975**

**Session III: \$3975**

### Tuition Deadline

**Session I: May 3, 2019**

**Sessions II and III: April 12, 2019**

Participants are eligible for a full refund (less the application fee and tuition deposit) before the tuition deadline.

### Refund Deadline

**May 10, 2019**

Participants are eligible for a 50 percent refund between tuition deadline and refund deadline (less deposit and application fee). No refunds are available after May 10.

## APPLICATION CHECKLIST

Incomplete applications cannot be fully processed. Make sure to include all required materials in your application:

- Admission application (online or paper), completed and signed
- Qualifying documents (first-time VSA students only). Copy of ACT, SAT, or PSAT scores OR portfolio application materials
- Application fee of \$40 (nonrefundable, required for ALL applicants)
- Application statement, completed and signed

## Course-specific Prerequisites/Requirements

A small number of courses require supplemental materials in order to determine specific course eligibility and fit. See course listings in the back of the catalog to determine if you need to include the following supplemental materials as part of your application.

- Transcript
- Two online teacher recommendation forms (form request available online on the PTY website under "Forms and Documents")

If you are applying in the priority window, you may request recommendation forms to be completed by your teacher before the start of the application priority window to ensure that all supplementary materials are provided by the close of the window. Applications that require supplemental information are not considered complete until all additional materials are provided.

## If Applying for Financial Assistance

- A financial aid application and supporting documents may be submitted at the time of application for admission or submitted separately at any point in the application process.

Please see below for more information on the financial assistance application process.

## FINANCIAL ASSISTANCE

PTY is committed to making programs available to academically gifted students regardless of a family's ability to pay the full tuition. Therefore, need-based financial aid is available based on income. The PTY application review process is need-blind and does not consider financial status. If you plan to apply for financial aid, please indicate this on your online or paper application. You may access the financial aid application on the PTY website, or complete the application included in this catalog. You may apply for financial aid at any point in the application process.

The financial aid application, along with a copy of your household's most recent tax return, may be submitted online, or via fax or mail. Please note that email is not as secure. Your student may be offered admission before receiving a financial aid quote. You are not obligated to officially enroll your student until you receive a financial aid quote. When your financial aid quote is received, you may accept or decline the amount and placement in a course. Partial tuition scholarships and payment plans are available.

# Frequently Asked Questions

## QUESTIONS FROM VSA APPLICANTS

### Why do I take only one class?

Research supports that students need opportunities to immerse themselves in a content area of interest in order to develop expertise; therefore, each VSA course is designed to be an accelerated, in-depth look at a content area/subject.

### How should I select my class?

We recommend that you choose your class based on what interests you. We encourage you to rank at least three or four classes, but be sure that any course you rank on your application is something you would be willing to take. Once you are placed in a class you ranked, your nonrefundable deposit will be due. Apply early to have the best chance for placement in your first choice class!

### Will I receive a grade or credit for my class?

No. VSA does not give grades or award credit. We want you to stretch your intellectual capacity without fear of failure. Your instructor will evaluate your progress, and you will receive a course evaluation report from your instructor after VSA. The report will detail your progress on a variety of factors and aims to give you a broad picture of your academic growth in the course.

### Will I have a roommate?

Yes. All rooms are double rooms. Two students (same gender) will be assigned to each room.

### May I choose my own roommate?

To enhance the community experience, VSA typically assigns roommates through a randomized process. If you have a specific concern regarding the roommate assignment process, please contact the VSA office.

### What are proctors, and what do they do?

Proctors are residential counselors. They are specially trained undergraduate and graduate students who live in the residence hall with VSA students and organize the residential recreational and social activities with support from VSA's head of residential life, assistant director, and director. Each student will be assigned to a proctor group. Your proctor will check in on you on a regular basis and help you make the best of your VSA experience.

### May I bring a car to campus?

No. Students will have neither the time nor the need to leave campus in a personal vehicle. VSA is an intense summer experience, and student safety is always a priority.

### How much freedom will I have to go off campus?

Supervision levels vary by session. The VSA daily schedule and degree of supervision is comprehensive. Students who are accustomed to unsupervised time may find the policies and practices of VSA restrictive at times. We follow Vanderbilt University's policies regarding the presence of minors on campus, and student safety is prioritized above all else. While we understand that students are responsible individuals, VSA requires free time and recreational activities to be fully supervised and every student to be accounted for at all times. We want you to have a wonderful time while you're with us on campus, and we encourage new friendships and community building at every turn.

### May I bring a cell phone, iPad, or other electronic device?

Yes. However, we do have restrictions on the use of these devices, which we will ask you to follow. The policy for use of electronics will be outlined in your student handbook. VSA is not responsible for lost or stolen items.

### Do I need a computer?

Some students do find that a computer is beneficial, but it is neither required nor essential for academic purposes.

### Can VSA accommodate dietary restrictions?

Yes, in most cases, with adequate prior notice. You will be asked to supply additional information as part of the student's welcome packet paperwork. See page 6 for more information about dining.

### What should I wear?

VSA occurs within an academic environment that requires a casual but appropriate dress code. We ask that students use good judgment in packing for the session. Clothing with offensive language, symbols, or designs is unacceptable. Revealing clothing is also unacceptable. Nashville is hot outside in the summer, but inside is often cool with ample air conditioning. Be comfortable and bring layers!

### Will I do my own laundry?

Yes. Students attending Sessions II or III will do their own laundry. Laundry facilities are available in the residence hall. Don't forget to pack extra quarters, a laundry bag or hamper, laundry detergent, fabric softener, etc. If you've never done laundry, you might want to ask your family for a crash course before you arrive at VSA!



"I enjoyed VSA, because I was able to be around people my age who were all the same in our knowledge."

## Frequently Asked Questions CONTINUED

### QUESTIONS FROM PARENTS

**I have a rising 7th grade student, and, while we like VSA, we're hesitant to have him/her take part in a residential program just yet. Does PTY offer any day program options for rising 7th grade?**

Yes! Programs for Talented Youth also offers Career Connections at Summer Academy at Vanderbilt for the Young (SAVY) as a day program option for 7th grade students. Career Connections allows students to experience how expert knowledge and skills are applied in different fields, industries, and/or research. Rising seventh grade students may choose to attend Career Connections, VSA, or both! Students interested in attending both programs will need to complete two separate applications. PTY encourages students to apply during each program's priority window to increase the likelihood of being admitted to a top-choice course. More information on the Career Connections at SAVY application timeline can be found at [pty.vanderbilt.edu/savy](http://pty.vanderbilt.edu/savy).

**What is the "application priority window"? How does it affect my student's application?**

All applications received during the application priority window (Feb. 6 at noon CT to Feb. 13 at noon CT) will be placed in a priority pool regardless of the particular date submitted within this window. This means that all complete and qualifying applications submitted during the application window have the same chance for placement. At the close of this window, all applications received will be randomly assigned a number determining their placement in the review queue. Applications received after the application window will be time and date stamped upon arrival and reviewed in order of receipt. Applying during the priority window does not guarantee admission, but it does increase a student's chances of admission. Because our courses fill quickly, we highly recommend that you submit your student's application during our application window for the best chance at placement.

**When are applications due?**

While most classes fill within the application priority window (Feb. 6 at noon CT to Feb. 13 at noon CT), we will continue to accept applications throughout the spring until all classes are filled.

**Why does VSA use ACT/SAT/PSAT scores to determine eligibility?**

VSA specifically designs courses for academically gifted and advanced learners. Our instructors teach their courses at an accelerated pace and at a level of depth which research suggests works particularly well with academically gifted students. We use ACT/SAT/PSAT scores as one reliable measure in determining a student's ability to succeed at this accelerated and in-depth pace. Please see "How to Apply" (page 9) for more information and other eligibility options.

**Will attending VSA help my student get into Vanderbilt University?**

No. Admission to VSA is not an indicator of admission to Vanderbilt University. However, attending VSA will provide an inside look at Vanderbilt and opportunities to learn more about the typical college admissions process than you may get from a regular admissions visit.

**Will I get to meet my student's instructor?**

Yes, if you wish. Optional parent/teacher conferences (Sessions II and III) or classroom open houses (Session I) will be available to parents and guardians on check-out days.

**Who will supervise VSA students in the residence hall?**

The VSA residential staff is led by a leadership team composed of both seasonal and year-round Programs for Talented Youth staff, including the VSA program director and assistant director. The VSA director and assistant director are full-time PTY staff members; they move into the dorms to support VSA students each summer. The VSA residential leadership team features a head of student life, a head of student support, a head of operations, a head of academics, and a head of residential life who work together with the program director and assistant director to help ensure each student has a safe and positive experience. In addition to a hardworking crew of program office assistants, VSA is also supervised by a fully trained staff of 20–25 residential counselors (VSA proctors) who live on residential floors near their student groups to provide support and guidance. All VSA staff complete a multi-step screening and interview process, including an extensive nationwide background check. Staff are carefully selected and trained so they are able to help provide the best experience for your student. PTY's full-time Executive Director and Assistant Director support VSA as well and are known to join in the fun on weekend outings and VSA evening events.





### **May I visit my student during VSA?**

Other than check-in and check-out days, we respectfully request that families remain off campus while VSA is in session. However, during sessions that include weekends, families may sign their students out on Sunday mornings. More information about Sunday check-out will be provided in your student's welcome packet.

### **Does a student need additional spending money at VSA?**

We recommend about \$40–\$50 per week for incidentals and occasional optional outings, as well as snacks or souvenirs from the VU bookstore.

### **Can you tell me more about the deposit?**

The 10 percent tuition deposit is nonrefundable and is due two weeks after the student has been notified of his/her course placement. If a student is admitted to a course that is not his or her first choice, paying the deposit does not remove the student from other waiting list positions. The deposit does secure the student's placement in a ranked course and, therefore, in the program as a whole. Should a spot open up in a higher-ranked course, the next student on the waiting list moves into that course. Due to long waiting lists, the deposit is necessary to secure the student's placement

and reduce last minute withdrawals. Therefore, we highly recommend that students only rank courses they are willing to take. Of course, once paid, the deposit is applied to the student's overall tuition balance.

### **My child is interested in VSA, but we live out of state. Can my student attend VSA? What does transportation to and from the airport entail?**

We encourage students from all over the country and the world to apply to VSA! In summer 2018, VSA had 36 states and 11 countries represented. This summer, we hope to add to that list as we believe that the diversity in our student body creates a powerful community of learners. Students attending Sessions I, II, and III can fly into the Nashville airport, located approximately 20 minutes from campus. VSA staff work with families who are planning air travel to ensure that a VSA staff member is waiting at the airport to greet your student and to shuttle him/her back to campus in a VSA van. Per Vanderbilt policy, VSA students never travel to and from the airport alone. When VSA is over, shuttles with VSA staff take students to the airport. Transportation fees apply for travel services: \$50 round trip or \$25 one way. A transportation form detailing this information will be included in your VSA welcome packet.

# Session I Course Catalog

## RISING 7TH AND 8TH GRADERS JUNE 9–14 • \$1,375

(For students who will be entering 7th and 8th grade in fall 2019)

Designed exclusively for rising seventh and eighth-grade students, this one-week session provides structured learning and recreation both inside and outside of the classroom. Your academic course takes center stage, but, in the evenings, you will be able to sample a variety of games, sports, crafts, and other activities. You and your parents can rest assured that our VSA community is self-contained and well supervised. Our staff will work hard to ensure that you won't feel lost or overwhelmed during your stay at Vanderbilt. At the end of the week, you will leave with many new friends, the great satisfaction of succeeding in a fast-paced and rigorous classroom, and the wonderful feeling of being a part of Vanderbilt's community of scholars.



**A WORD ABOUT COURSE CHOICE**  
Please consider course choices carefully. As you review the course descriptions in this section of the catalog, rank-order as many of the courses as you like, knowing that you may not get placed in your first-choice course. While we do our best to place students in their first-choice courses, we often have to place students in second- or third-choice courses, based on availability. Please note that ranking more than one course never hurts the possibility of receiving your top-choice class, and ranking several courses increases the chances of being placed in a class. If you get placed in a lower-ranked course, you will remain on the waiting list for higher-ranked courses, but be aware that a spot may not open in a higher-ranked course. Rank only those courses that you are truly willing to take. Rank thoughtfully to ensure you will enjoy your VSA experience!

### A DAY IN THE LIFE AT VSA SESSION I\*

8:00 – 8:45 a.m.	Breakfast
8:45 – 11:45 a.m.	Class
11:45 a.m.–12:45 p.m.	Lunch
12:45–3:45 p.m.	Class
4:00 –5:00 p.m.	ACE
5:00 – 6:00 p.m.	Free Time
6:00 – 6:50 p.m.	Dinner
7:00 – 9:00 p.m.	Planned Recreational Activities
9:00 – 10:00 p.m.	Proctor Meeting and Free Time on Hall
10:00 p.m.	Room Curfew/ Call Parents
10:30 p.m.	Lights Out

\*Subject to change

### Session I Course Titles\*

- Aerospace Engineering
- Behavioral Economics
- Conservation Paleobiology
- Is Green Energy the Answer?
- Math and Music
- Neuroscience and Music
- Philosophy of Law
- Rhetorical Advocacy and Criticism
- The Science and Ethics of Genome Editing
- Sensors and Big Data Analysis
- Stellar Astronomy
- Writing Poetry and Free Verse

\*As summer courses are subject to change, keep an eye on our website for the most up-to-date course information.





## AEROSPACE ENGINEERING: YES, WE'RE LAUNCHING ROCKETS!

### Engineering, Physics, Mathematics

It is the dawning of a new age. Reusable rockets are landing on drone ships. Private companies have sent people to space. Humankind is preparing for its first manned mission to Mars. The commercialization of the space industry has renewed public interest in rocketry, and upcoming generations will soon master interplanetary travel. In order to understand the intricacies of space travel, you must first understand and appreciate the laws of physics that dictate our universe. Bridge theory and practice as you put yourself in the shoes of an aerospace engineer. Work with a team of classmates to build, design, and test your own rocket following a rigorous rocket-science crash course. Prepare for the challenge of reaching a target altitude by applying the theories and concepts you have learned along the way. You will be not only a participant in this competition, but also a judge for each team's phase of flight. This is no walk in the park. This is launching rockets!

—Darren Tinker

## BEHAVIORAL ECONOMICS

### Psychology, Economics, Sociology

Have you ever wondered how a celebrity millionaire could find himself bankrupt? Or how a giant corporation can influence our decision to buy a cool new device? What factors influence the way we spend our money? Behavioral economists work

to explain what motivates people to make certain financial decisions and uncover why people spend their money the way they do. In this course, you will get a primer in basic economic theory and replicate famous psychological experiments in order to better understand and predict humans' often irrational behaviors. People may not always make expected and reasonable financial decisions, but the right research can help us understand why. Through case studies, research, debates, and discussion, we will learn about the impulsiveness of humans and how emotions can play a powerful role in financial decision making and spending. By the end of this course, you will be thinking like an economist and won't look at commercials or the stock market in the same way!

—Blake Dunshee

## CONSERVATION PALEOBIOLOGY

### Paleontology, Ecology, Biology, Statistics

Can past climate events help us prepare for the future? This is the essential question that paleobiologists attempt to answer. Paleobiology is an emerging field that uses established tools and methods to understand ancient ecosystems and develop predictive models of climate patterns. In this class, the tools of professional paleobiologists will become your own. Through lab investigation, field work, and fossil analysis, you will gain a deeper understanding of the diverse factors that shaped ancient ecosystems and begin to apply those newfound insights to the world that you will inherit.

—Greg Smith

“One of the best aspects of VSA was that I was able to learn something that I didn't know before and that I now love!”

## IS GREEN ENERGY THE ANSWER?

### Environmental Science, Social Science

The global reliance on fossil fuels has massive impacts on our health, environment, and way of life. Are green technologies, however, really the best solution? Is an all-renewable energy use desirable, cost-efficient, and possible? The debate within academia and the public sector is more complex and divided than you may imagine.

In this class, we will study coal, natural gas, solar, and wind energy to understand how each technology impacts people in different parts of the world. We will discuss how different forms of energy production generate varying human costs. You will learn about global human connections that drive energy production and develop your own proposal for sustainably meeting our global energy demands.

—Emma Banks

## MATH AND MUSIC

### Music Theory, Mathematics

What music dominates your playlists? Did you know math is hidden everywhere in music—in tempo, rhythm, and musical notes themselves? The dance between math and music is an intricate one. From Brahms to the Beatles, Bartók to Beyoncé, the points at which mathematics and music collide open up both worlds as expressions of beauty and wonder. This course will examine topics such as set theory, musical scales, frequency, matrices, serialism, compositional techniques, and the Fibonacci sequence to help you reach a synthesis between the fields of math and music. We will dissect famous songs from a variety of well-known artists to examine patterns within and across genres, so a musical background is helpful but not required. After this class, you may have a new mathematical appreciation for music of all kinds!

—Dawson Gray

## NEUROSCIENCE AND MUSIC

### Neuroscience, Music, Biology

Music, often considered a human universal, exists in every culture. How do cognitive neuroscientists begin to answer questions about how music is processed in the brain? How do individuals with language and memory impairments still have a preserved capacity to sing and recall music? This course will survey the ongoing research in music cognition and basic neuroscience topics, including brain anatomy. We will cover methods (EEG, fMRI) cognitive neuroscientists use to study the brain and learn how to parse scientific papers, particularly focusing on music studies.

—Anna Kasdan

## PHILOSOPHY OF LAW

### Politics, Morality, Legal Studies

What ideas shape the creation and formation of laws? What is the relationship between law and morality? This course will examine the philosophical foundations of the philosophical underpinnings of law, legal reasoning, and the relationship between law and morality. We will learn how to analyze philosophical and legal documents in order to engage in robust discussion and reflection upon legal theories and systems in Western cultures. In this course, you will also create works that reflect your own critical perspective as these relate to contemporary issues that influence law. If you are interested in social justice, want to become an informed citizen, are considering a career in law, or just want to learn more about what influences laws and policies, then this course is for you! Become equipped with new information that will help you examine policies or advocate for your own ideas in your local area, and analyze current state and national issues and policies through a legal and philosophical view.

—Sarah Beth O'Brien

## RHETORICAL ADVOCACY AND CRITICISM

### Writing, Public Speaking

Do you want to be a better public speaker? Do you want to understand how society determines what is true and what is hyperbole? Do you want to be able to effectively research and organize arguments and make sense out of the massive amounts of information you are exposed to? In this class, you will learn how to research, develop, and organize arguments, adapt persuasive appeals to specific audiences, and, perhaps, even change minds. We will also analyze arguments as we learn basic rhetorical theories and apply them to historical speeches. Be prepared to engage in discussions and critically analyze arguments and texts. Become a more involved and informed citizen, a better public speaker, and a critical consumer of information.

**Note:** This course will involve scholarly consideration of politics and the public sphere.

—John Koch

## THE SCIENCE AND ETHICS OF GENOME EDITING

### Biology, Law, Philosophy

Topics in genetics are becoming more popular, and genetics research is a fast-growing field with long-lasting implications for society. In this class, we will tackle some of the big issues surrounding genetic engineering. Is genome editing safe? Should there be federal regulations concerning which genomes can



be edited and to what extent? We will begin with an overview of molecular biology and genome editing processes. You will learn how methodologies used to edit genomes have been applied in basic science research, agriculture, and therapeutics, while also examining the long-term implications of genome editing as it affects daily life. With an emerging understanding of the science behind this issue at the center of public consciousness, we will then consider ethical questions and work to participate in informed scientific conversations about this important topic. Be prepared to ask questions, conduct interdisciplinary research, and defend your own stance on this issue.

**Note:** This course will include scholarly discussions about topics that are controversial and have the potential to be polarizing. Students and parents should consider whether they are comfortable with participation in this course.

—Andrea Perreault

## SENSORS AND BIG DATA ANALYSIS

### Data Analysis, Programming, Social Science

How do city planners decide how to alleviate traffic? How do scientists measure and analyze how air quality is related to issues such as public health and socio-economic dynamics?

Data analysis is behind many important decisions that are being made on a daily basis. In this class, you will explore sensor and data technology, assemble real sensor prototypes and collect and analyze data that answer questions you have. With unique access to large datasets from Vanderbilt and the City of Nashville, derived from air quality sensor systems, pedestrian movement detection, and even electric scooter-sharing systems, you will formulate and explore inquiries that affect the very flow of society. Gain hands-on experience with electrical engineering, big data analysis techniques, programming languages, and geographic mapping software as you discover answers to your own questions and gain a behind-the-scenes look at how data-driven decisions are made for city planning.

—William Barbour

## STELLAR ASTRONOMY

### Astronomy, Computer Modeling, Data Analysis

Get ready to contribute your own voice to our global, astronomical dialogue! We will study the life cycle of stars and the remnants they leave behind. (Black holes, anyone?) You will learn how to access publicly available data and use astronomical software tools and methods as you think like an astronomer. A culminating project will challenge you to develop a strong scientific research question and use software tools to model



scenarios, pursue verifiable answers, and communicate the results of your research to your classroom colleagues via a poster presentation. This course is a great fit for those planning a career as an astronomer and those who want a closer look at the scientific process while dabbling in astronomical questions.

—Erika Grundstrom

## WRITING POETRY AND FREE VERSE

### Creative Writing, Literary Theory

Led by a published author, this writing class will help you find and express your poetic voice and gain confidence and expert feedback about your work. By studying different kinds of poetry through creative and engaging creative writing activities, group collaboration, analysis, and peer review, you will work toward building a comprehensive collection of your own original poems. We will pay particular attention to free verse and the frontier of poetry beyond meter, with a focus on finding your own voice and platform. The writing skills you learn will not only help enhance your poems, but also allow you to engage in scholarly conversations with other classmates and express your ideas in unique ways, while having a lot of fun along the way.

—Jan Harris

“I enjoyed the academic atmosphere in the classroom—no one judged anyone. We all learned together.”

# Session II Course Catalog

**RIISING 9TH AND 10TH GRADERS • JUNE 16–28 • \$2,975**

(For students who will be entering 9th or 10th grade in fall 2019)

Session II strives to reach the right balance of free time coupled with structured activities outside of class, allowing you to choose recreational and social experiences that appeal to you. On the Session II weekend, we arrange an all-VSA off-campus recreational event such as bowling, roller skating, or miniature golf. Throughout your session, you will also find a diverse selection of evening activities from seminars on choosing a college to intramural soccer tournaments to film screenings to low-key time for hanging out with new friends. Our goal is to offer VSA Session II students an age-appropriate sampling of campus life, living in a residence hall, and creating a close-knit community among like-minded peers.



## A WORD ABOUT COURSE CHOICE

Please consider course choices carefully. As you review the course descriptions in this section of the catalog, rank-order as many of the courses as you like, knowing that you may not get placed in your first-choice course. While we do our best to place students in their first-choice courses, we often have to place students in second- or third-choice courses, based on availability. Please note that ranking more than one course never hurts the possibility of receiving your top-choice class, and ranking several courses increases the chances of being placed in a class. If you get placed in a lower-ranked course, you will remain on the waiting list for higher-ranked courses, but be aware that a spot may not open in a higher-ranked course. Rank only those courses that you are truly willing to take. Rank thoughtfully to ensure you will enjoy your VSA experience!

## A DAY IN THE LIFE AT VSA SESSION II\*

### Weekday Schedule

8:00 – 8:45 a.m.	Breakfast
8:45 – 11:45 a.m.	Class
11:45 a.m.–12:45 p.m.	Lunch
12:45 – 3:45 p.m.	Class
4:00 – 5:00 p.m.	ACE
5:00 – 6:00 p.m.	Free Time
6:00 – 6:50 p.m.	Dinner
7:00 – 9:00 p.m.	Recreational Activities
9:00 – 10:00 p.m.	Proctor Meeting and Free Time on Hall
10:00 p.m.	Room Curfew**
10:30 p.m.	Lights Out**

\*Subject to change.

\*\*Curfew and Lights Out times may be extended on Friday and Saturday nights.

## Session II Course Titles\*

- Agents of Change or Hot Rhetoric
- Astrophysics
- The Avengers Meet the Hero with a Thousand Faces*
- Destabilizing History
- Fantasy Fiction Writing
- Gold, God, and Glory in the Making of the Modern World
- Mapping Mentalities
- Math and Music
- Nanoscience and Engineering
- Philosophy of Law
- Policy Making and Quantitative Analysis
- Strengths and Structures of Engineering Materials

\*As summer courses are subject to change, keep an eye on our website for the most up-to-date course information.



## AGENTS OF CHANGE OR HOT RHETORIC

### Rhetoric, Public Policy, Law/Politics

Do you want to make a difference in the world? Here's a place to stoke that fire. This course will help you apply Aristotelian rhetoric to influence political, economic, and social change. You will identify and research multiple sides of contemporary social issues, make your case, and defend it. You will learn and practice fundamentals of public speaking, and, more importantly, you will learn how to think critically, argue effectively, and mobilize support for the issues that matter to you.

—Courtney Travers

## ASTROPHYSICS

### Physics, Astronomy, Computer Science

Do you have a lot of questions about the universe but don't know how to find the answers? There are a lot of things that we don't know about the universe (yet), but fortunately, the study of astrophysics gives us many of the tools we need to find the answers. Astrophysicists use computer modeling and advanced mathematics to answer their research questions. You can too! In this course, we will discover how to construct a good research question, find and analyze data, and use computer models to test your hypotheses. We'll observe the laws of physics on Earth and see if our

observations match what computer models predict. This course will help you answer questions as wide and diverse as the universe itself.

—Erika Grundstrom

## THE AVENGERS MEET THE HERO WITH A THOUSAND FACES: EXPLORING INTERSECTIONS OF THE MARVEL CINEMATIC UNIVERSE AND LITERARY CRITICISM

### Literary Theory, Film Theory, Cultural Studies

How has the development of shared cinematic universes affected the design and structure of storytelling? When the Avengers team up against Thanos, are we really witnessing something structurally novel, or are we revisiting tried and true narrative tropes? Is there ever more than one story in the multiverse?

With Joseph Campbell's theory of the Hero's Journey as backdrop, you will mine the Marvel Cinematic Universe for themes and patterns, then move to mapping your findings onto classic story structures that have existed for thousands of years. As the stories of the MCU align (and misalign) with classic structures, you will create emerging theories of meaning that build on and expand Campbell's classic work.

—David Ian Lee

“Taking classes with other students from all over the country and the world was interesting. There were diverse perspectives in the classroom.”



## DESTABILIZING HISTORY

### Cultural Studies, History, Deconstruction

A history book is not what you may think it is. It is not simply the “truth” based on facts. It is, instead, an argument for the truth based on the prioritization of some facts over others. Living in a more diverse society with better access to information for all has led to widely disparate notions of the “truth,” so that some people argue that we live in a “post-truth” age. How best to handle this new reality is one of the most pressing intellectual issues of our time, one that historians should productively and eagerly engage. In this course, students will look at various pivotal moments in North American history, from English colonization to the rise of the United States as a global superpower, from multiple and complex perspectives. Through this analytical process that challenges reigning narratives, students will develop their own historical understandings while becoming better prepared to handle the formidable intellectual challenges of the present day.

—Kevin Vanzant

## FANTASY FICTION WRITING

### Creative Writing, Literature

Did you know that J. K. Rowling invented quidditch because of a fight she had with her boyfriend? Or that Tolkien’s Elvish has an elaborate phonology and variety of dialects that you can learn to speak? These authors drew on their own life events to create elaborate worlds with history and detail that many readers might never notice. Do you have what it takes to create magical and mysterious worlds? What life experiences can you build upon to set you on a path toward writing the next bestselling novel? Join the quest not just to read classic works of fantasy, but also to begin writing a classic of your own. In this course, we will experiment with short stories, novels, and poems. You will produce a portfolio of creative writing that will set you on the path to discover the secret worlds hidden in your imagination.

—Jan Harris

## GOLD, GOD, AND GLORY IN THE MAKING OF THE MODERN WORLD

### History, Social Science, Economics

How does the past inform the present? What role does one’s geographic location and culture play in the monetary success of their country? And in shaping their political and religious beliefs? From the Crusades, to the Silk Road, to the process of colonization, humanity continues to be driven by a lust for “Gold,” a religious faith in “God,” and a yearning for “Glory.” In this course, we will follow the emergence of trade relations, religious communities,

and nation-building projects in Asia, Africa, Europe, and the Americas. By examining exactly how “Gold,” “God,” and “Glory” became driving forces for the accumulation of wealth, territorial expansion, and social consciousness, we will learn how our world’s past informs the present and future. Be ready to engage in debates on how modern-day capitalism came into existence, and participate in intriguing discussions about how greed, desire, and faith shape societal behaviors and traditions.

—Danyelle Valentine

## MAPPING MENTALITIES: FROM IDYLIC PARADISES TO MONSTROUS CREATURES

### History, Critical Theory, Cartography

The maps and voyage accounts of the seventeenth and eighteenth centuries were full of exaggeration and imagination. Faced with blank or uncertain spaces, writers and cartographers described everything from idyllic paradises to monstrous creatures. Despite their inaccuracies, these maps shaped how many Europeans understood the people and world beyond their borders. Many of these dominant views towards outsiders and otherness persist to this day.

In this class, we analyze influential maps and voyage accounts and examine how assumptions about other lands and societies are formed. Rather than blindly accepting preconceived notions about the outside world, this class will use a variety of critical methodologies to evaluate, confront, and rethink common assumptions in the world around us.

—Bonnie Griffin

## MATH AND MUSIC

### Music Theory, Mathematics

What music dominates your playlists? Did you know math is hidden everywhere in music—in tempo, rhythm, and musical notes themselves? The dance between math and music is an intricate one. From Brahms to the Beatles, Bartók to Beyoncé, the points at which mathematics and music collide open up both worlds as expressions of beauty and wonder. This course will examine topics such as set theory, musical scales, frequency, matrices, serialism, compositional techniques, and the Fibonacci sequence to help you reach a synthesis between the fields of math and music. We will dissect famous songs from a variety of well-known artists to examine patterns within and across genres, so a musical background is helpful but not required. After this class, you may have a new mathematical appreciation for music of all kinds!

—Dawson Gray



## NANOSCIENCE AND ENGINEERING

### Engineering, Nanotechnology, Chemistry

Get ready to don your protective coveralls and enter the exciting world of nanoengineering. In this class, you will get an introduction to key nanoparticles and their properties while stretching your creative problem-solving skills to their limits. You can expect advanced lectures, labs, and extensive study with faculty, grad students, and postdocs at the Vanderbilt Institute of Nanoscale Science and Engineering (VINSE). You will also spend significant time in one of Vanderbilt's newest, biggest, and cleanest cleanrooms. These experiences will challenge you to see the world the way a nanoscientist does—how manipulating the smallest of particles might address some of the world's biggest problems.

**Note:** Be advised that the special lighting, clothing, and atmosphere of the cleanroom may act as a “trigger” for students with anxiety disorders and tactile sensitivities. Please call our office if you'd like to discuss the specifics of the cleanroom.

*Tennessee students from backgrounds historically underrepresented in science may be eligible to apply for a competitive full tuition scholarship funded directly through the Vanderbilt Institute of Nanoscale Science and Engineering (VINSE) for this course. Call our office to learn more about the VINSE scholarship criteria and how to apply.*

—Greg Walker and other VINSE Faculty

## PHILOSOPHY OF LAW

### Politics, Morality, Legal Studies

What ideas shape the creation and formation of laws? What is the relationship between law and morality? This course will examine the philosophical foundations of the philosophical underpinnings of law, legal reasoning, and the relationship between law and morality. We will learn how to analyze philosophical and legal documents in order to engage in robust discussion and reflection upon legal theories and systems in Western cultures. In this course, you will also create works that reflect your own critical perspective as these relate to contemporary issues that influence law. If you are interested in social justice, want to become an informed citizen, are considering a career in law, or just want to learn more about what influences laws and policies, then this course is for you! Become equipped with new information that will help you examine policies or advocate for your own ideas in your local area or analyze current state and national issues and policies through a legal and philosophical view.

—Sarah Beth O'Brien

## POLICY MAKING AND QUANTITATIVE ANALYSIS

### Politics, Statistics, Social Science

What impact do statistics and past history have on future policy initiatives? What are the unintended versus unanticipated consequences of creating policy? How does one negotiate public opinion and quantitative data into a well crafted policy when the two conflict? Step into the role of a policy analyst, and examine key issues through the lens of social science and economics. Participate in policy debate, and support your arguments using both classical and emerging political theory, historical precedent, public opinion, and quantitative analysis. Be prepared to grapple with current political topics such as health care, taxation, education, and foreign policy. Using the same quantitative methodologies and statistical coding software as policy analysts, you will leverage theory and technical skill to engage contemporary hot-button policy issues.

—Walt Ecton

## STRENGTHS AND STRUCTURES OF ENGINEERING MATERIALS

### Engineering, Materials Science, Mathematics

If you've ever wondered how engineers know an airplane won't fall apart mid-flight, then this is the course for you! Learn principles of engineering, and apply this information to machine parts and assemblies. You will examine topics such as the stress/strain relationships within different materials, investigate failure theories, and learn how engineers predict failure. You will also have the opportunity to visit Vanderbilt engineering labs and put your newfound knowledge to the test by stressing materials until they break and examining how and when the failure occurred. It's time to examine stress and learn from failure in true engineering fashion!

—Kelsay Neely

“My course was interesting and comprehensive, and it completely changed how I perceive the world. It renewed my interest in learning about policy.”



# Session III Course Catalog

**RISING 11TH AND 12TH GRADERS • JULY 8–27 • \$3,975**  
 (For students who will be entering 11th or 12th grade in fall 2019)

VSA Session III offers rising juniors and seniors a three-week immersive experience at Vanderbilt University. Highlights include campus living with a particular focus on each individual’s role in creating a positive and supportive community. Session III students exercise personal responsibility, develop lifelong friendships, and challenge themselves and each other to engage fully with all facets of the program. To promote these goals, students in Session III have more free time and greater discretion in how to use it. During designated hours, you will have the option to sign out and walk to nearby Hillsboro Village with a group of your new VSA friends.

Weeknights offer a variety of recreational, educational, and relaxing activities from which to choose and may include a casual volleyball match, a panel discussion on college life, a trip to Vanderbilt’s rec center, or an impromptu dance party. You’ll also have plenty of time to hang out in The Commons Center, Vanderbilt’s first-year student dining hall and gathering space, engaging in discussions or grabbing a coffee, maybe joining a game of foosball with your fellow VSA classmates.

Weekends feature dances, group outings, friendly house competitions, open mic night, and much more. On Sunday mornings, you’ll have the option of attending religious services or sleeping until 11:00 a.m. Sunday afternoons may include group activities, outings, and opportunities for relaxation to give time to build connections and prepare for the week ahead.

## A DAY IN THE LIFE AT VSA SESSION III\*

### Weekday Schedule

8:00 – 8:45 a.m.	Breakfast
8:45 – 11:45 a.m.	Class
11:45 a.m.–12:45 p.m.	Lunch
12:45 – 2:45 p.m.	Class
2:45 – 3:45 p.m.	Study Hall
4:00 – 5:00 p.m.	ACE
5:00 – 6:00 p.m.	Free Time
6:00 – 6:50 p.m.	Dinner
7:00 – 9:30 p.m.	Free Time (Mon.–Thurs.) or VSA-sponsored seminars, activities, and outings
9:30 – 10:30 p.m.	Proctor Meeting and Free Time on Hall
10:30 p.m.	Room Curfew**
11:00 p.m.	All Quiet**

\*Subject to change

\*\*Later Curfew/All Quiet on weekends

### Session III Course Titles\*

- The Bard in 2019
- Computational Thinking, Programming, and Agent-based Modeling
- Geology in the Twenty-first Century
- Gold, God, and Glory in the Making of the Modern World
- Le Voyage Imaginaire
- Med School 101
- Microscopy of Nanomaterials
- Perfect Shuffles, Permutations, and Decimal Expansions
- Policy Making and Quantitative Analysis
- Rhetorical Advocacy and Criticism
- Sensors and Big Data Analysis
- Treating the Whole Person
- Writing Short Stories

\* As summer courses are subject to change, keep an eye on our website for the most up-to-date course information.

## A WORD ABOUT COURSE CHOICE

Please consider course choices carefully. As you review the course descriptions in this section of the catalog, rank-order as many of the courses as you like, knowing that you may not get placed in your first-choice course. While we do our best to place students in their first-choice courses, we often have to place students in second- or third-choice courses, based on availability. Please note that ranking more than one course never hurts the possibility of receiving your top-choice class, and ranking several courses increases the chances of being placed in a class. If you get placed in a lower-ranked course, you will remain on the waiting list for higher-ranked courses, but be aware that a spot may not open in a higher-ranked course. Rank only those courses that you are truly willing to take. Rank thoughtfully to ensure you will enjoy your VSA experience!



## THE BARD IN 2019: READING AND PERFORMING SHAKESPEARE TODAY

### Literature, Identity, Literary Theory

What does William Shakespeare—who wrote plays for the English theatre four centuries ago—have to say about our world in 2019? How can his words and stories remain visceral and relevant? What can he tell us about identity, race, religion, gender, and other current societal topics? How are these concepts and others portrayed through his plays? Has society really changed in the past 400 years? In this interactive and thought-provoking class, we will analyze and give voice to some of Shakespeare's writings in order to better understand the meaning behind them—and to apply ageless instruction to some of today's most urgent issues. Be prepared to let your guard down and to try your hand at acting, debating, analyzing, and discussing philosophical questions. As Shakespeare writes in *Hamlet*, "...we know what we are, but not what we may be."

—David Ian Lee

## COMPUTATIONAL THINKING, PROGRAMMING, AND AGENT-BASED MODELING

### Algorithms, Logic, Systems Design

Our connected world and information-driven societies are filled with complex systems. In any career you choose, and in any major you elect to study, you will encounter emergent phenomena rooted in complexity. Agent-based modeling is a powerful tool for analyzing and creating models of such phenomena, and it is also a great setting for learning many core ideas of programming. The course will give you an introduction to identifying complex systems in the world, reasoning about them, and modeling them to understand how they behave. No prior programming experience is required: beginning with visual tools to build programming fundamentals, we will support you as you develop your computational modeling toolkit and complete an in-depth modeling project of your own design. Agent-based approaches are increasingly being used in cutting-edge research in the sciences, the social sciences, and even the humanities, so you will be able to choose a project that explores deep ideas about complexity that are important to you, in any subject area.

—Corey Brady

## GEOLOGY IN THE TWENTY-FIRST CENTURY

### Geology, Environmental Science, Statistics

How does the geological record inform our understanding of current and future climate change?



How can geology help us solve the crisis of ever dwindling energy resources?

Geology is undergoing a revolution in the new millennium as technological advances and global interconnectedness enable exciting new approaches to old and new problems alike. As an effect of this shift, geologists are asking increasingly interdisciplinary questions of relevance to climate scientists, oceanographers, policy makers, and other experts to work together and make informed decisions.

In this class, you will, through the lens of computer programming, statistical analysis, and geological theory, study the Earth as an interconnected system with inputs and outputs affecting all aspects of modern life. From the emergence of complex life to the science and sensation behind natural disasters and the impacts of climate on agriculture, medicine, and human civilization, you will consider how the vast interconnectedness of nature provides answers to a wide range of twenty-first-century questions.

—Gregory Smith

## GOLD, GOD, AND GLORY IN THE MAKING OF THE MODERN WORLD

### History, Social Science, Economics

How does the past inform the present? What role does one's geographic location and culture play in the monetary success of their country? And in shaping their political and religious beliefs? From the Crusades, to the Silk Road, to the process of colonization, humanity continues to be driven by a lust for "Gold," a religious faith in "God," and a yearning for "Glory." In this course, we will follow the emergence of trade relations, religious communities, and nation-building projects in Asia, Africa, Europe,

and the Americas. By examining exactly how “Gold,” “God,” and “Glory” became driving forces for the accumulation of wealth, territorial expansion, and social consciousness, we will learn how our world’s past informs the present and future. Be ready to engage in debates on how modern-day capitalism came into existence, and participate in intriguing discussions about how greed, desire, and faith shape societal behaviors and traditions.

—Danyelle Valentine

### LE VOYAGE IMAGINAIRE: VOYAGE ACCOUNTS, FRENCH HISTORY, CRITICAL INQUIRY

#### History, Critical Theory, French Literature

How do people form opinions about places and cultures they have never encountered? What if these opinions were shaped by inaccurate sources? In early modern history, explorers and writers took creative liberties when describing foreign lands. While you may immediately question the validity of outlandish exaggerations and bizarre monsters, such accounts were often taken as fact! This course investigates how significant seventeenth- and eighteenth-century French voyage accounts—both “authentic” and “imaginary”—provided authoritative and influential accounts of foreign places and peoples and how such accounts shaped views of otherness that persist today. Be prepared to challenge assumptions, deconstruct worldviews, and explore how seventeenth- and eighteenth-century voyage accounts can inform contemporary ethics.

—Bonnie Griffin

### MED SCHOOL 101

#### Medicine, Biology, Chemistry

Vanderbilt University Medical Center (VUMC) is one of the top hospitals in the country, so it is no surprise that Vanderbilt University School of Medicine is at the forefront when it comes to technology and teaching. In this course, you will work with many of the same computer and other virtual medical simulations as Vanderbilt medical students do and use problem-based learning to analyze and diagnose real medical case studies. Taught by a team of medical students, this course will use small group discussions, faculty lectures, lab exercises, and the latest resources and technologies from the School of Medicine to learn about the the practice, ethics, and social impact of modern medicine.

**Note:** VUMC insurance and safety regulations state that students must be 16 years old by July 7 to participate. This policy is non-negotiable.

**Prerequisite:** Biology, Chemistry (transcript required)

**Additional requirement:** One letter of recommendation

—Vanderbilt School of Medicine Students and Faculty



### MICROSCOPY OF NANOMATERIALS

#### Chemistry, Medicine

Today, some of the BIGGEST problems in medicine, science, and engineering are being solved with some of the smallest technologies. Nanoparticles are used in everything from computer science to cancer treatments. You will get an introduction to key nanoparticles, their properties, and the ways scientists synthesize and manipulate them. In addition to lectures and research, this class will involve hands-on learning, laboratory experiences, and state-of-the-art imaging tools to give you a greater understanding of the potential of nanoparticles and to gain the skills to develop your own scientific research project.

**Prerequisite:** Chemistry (transcript required)

—Susan Verberne-Sutton

### PERFECT SHUFFLES, PERMUTATIONS, AND DECIMAL EXPANSIONS: MAKING MATH REAL

#### Mathematics, Computer Science, Physics

Have you ever been in a higher level math course and heard or even asked the question, “When will I ever use this?” The new mathematics you will learn in this course will provide a multi-faceted and exciting answer to that question. Physics, computer programming, and cryptography are just a few of the practical applications of the new theories and advanced mathematical techniques that will be explored in this course, all starting from the same humble base: card shuffles. Using the techniques learned in this seemingly simple analysis, you will explore the topics of number theory, permutation groups, and expansion of numbers in various bases and discuss how these relate to real-world issues and current innovation.

—Jason Brasel

### POLICY MAKING AND QUANTITATIVE ANALYSIS

#### Politics, Statistics, Social Science

What impact do statistics and past history have on future policy initiatives? What are the unintended versus unanticipated consequences of creating policy? How does one negotiate public opinion and quantitative data into a well-crafted policy when the two conflict? Step into the role of a policy analyst, and examine key issues through the lens of social science and economics. Participate in policy debate, and support your arguments using both classical and emerging political theory, historical precedent, public opinion, and quantitative analysis. Be prepared to grapple with current political topics such as health care, taxation, education, and foreign policy. Using

the same quantitative methodologies and statistical coding software as policy analysts, you will leverage theory and technical skill to engage contemporary hot-button policy issues.

—Walt Ecton

## RHETORICAL ADVOCACY AND CRITICISM

### Writing, Public Speaking

Do you want to be a better public speaker? Do you want to understand how society determines what is true and what is hyperbole? Do you want to be able to effectively research and organize arguments and make sense out of the massive amounts of information you are exposed to? In this class, you will learn how to research, develop, and organize arguments, adapt persuasive appeals to specific audiences, and, perhaps, even change minds. We will also analyze arguments as we learn basic rhetorical theories and apply them to historical speeches. Be prepared to engage in discussions and critically analyze arguments and texts. Become a more involved and informed citizen, a better public speaker, and a critical consumer of information.

**Note:** This class will involve scholarly consideration of politics and the public sphere.

—John Koch

## SENSORS AND BIG DATA ANALYSIS

### Data Analysis, Programming, Social Science

How do city planners decide how to alleviate traffic? How do scientists measure and analyze how air quality is related to issues such as public health and socio-economic dynamics?

Data analysis is behind many important decisions that are being made on a daily basis. In this class, you will explore sensor and data technology, assemble real sensor prototypes, and collect and analyze data that answer questions you have. With unique access to large datasets from Vanderbilt and the City of Nashville, derived from air quality sensor systems, pedestrian movement detection, and even electric scooter-sharing systems, you will formulate and explore inquiries that affect the very flow of society. Gain hands-on experience with electrical engineering, big data analysis techniques, programming languages, and geographic mapping software as you discover answers to your own questions and gain a behind-the-scenes look at how data-driven decisions are made for city planning.

—William Barbour

## TREATING THE WHOLE PERSON: A MULTIDISCIPLINARY UNDERSTANDING OF HEALTH CARE AND SOCIAL CONTEXT

### Nursing, Health, Social Science, Public Health

How do personal characteristics such as race, sexual identity, religion, or economic status impact one's health? This course will focus on the necessity of combining an understanding of social determinants with scientific knowledge to maximize quality of health. Simulated and real-life experiences are presented to stimulate critical thinking and novel approaches to the ways health care should be provided while considering individual circumstances and identities. Be ready to discuss health issues from multiple and diverse perspectives. If you are analytical, enjoy challenging assumptions and engaging in data driven discussions, or are considering a career in health care, then this course will set you on your way toward ongoing discovery and learning in this amazing field.

**Note:** This class will involve scholarly consideration of issues relating to race, class, ability, gender, sexuality, etc. Students (and parents) should carefully consider whether this course is a good fit for them at this time.

VUMC insurance and safety regulations state that students must be 16 years old by July 7 to participate. This policy is non-negotiable.

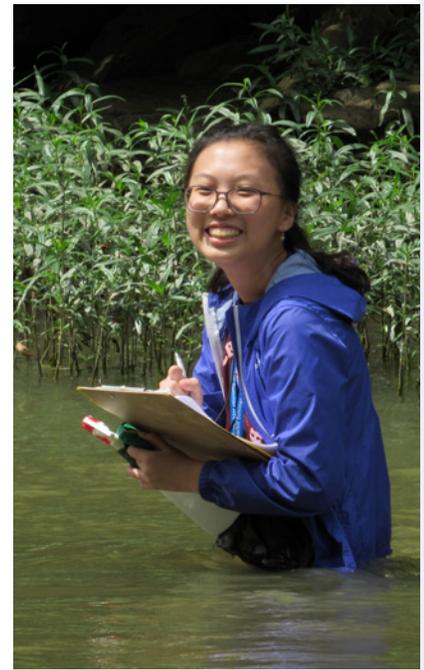
—Vanderbilt School of Nursing Students and Faculty

## WRITING SHORT STORIES

### Creative Writing, Literature

As aspiring authors know, short fiction can be what William Faulkner called "the most demanding" form of prose. This class will help you to develop the skills necessary to rise to Mr. Faulkner's challenge. You will explore the short fiction genre through critical reading of classic and cutting-edge examples from authors such as Flannery O'Connor and Michael Chabon. Daily writing and review will help you refine your craft. You will conclude this class having completed several of your own short stories that evince your stronger skills of critical analysis and that more clearly convey your own voice, rhythm, and style.

—Jan Harris



"I thoroughly enjoyed my class at VSA. Not only did I learn a lot, but also it was highly engaging, interactive, and hands-on."

## Vanderbilt Summer Academy Faculty

“I really enjoyed my VSA class because of the content and how I was able to interact with my instructor and the content.”

**Anna Kasdan** is a first-year graduate student in the neuroscience program. She completed her undergraduate degree in neuroscience, with a minor in piano performance, at Boston University and then worked as a research assistant at NYU studying music aesthetics, music perception, and neuroeducation. At Vanderbilt, her research broadly focuses on the brain basis of music processing abilities in clinical populations, such as individuals with developmental language disorder, aphasia, or William’s Syndrome. Committed to STEM outreach and education, Anna is involved with research projects at the Adventure Science Center in Nashville. Anna enjoys hiking, biking, and cheering on the Boston Red Sox.

**Emma Banks** recently earned her Ph.D. from Vanderbilt’s anthropology department. Her research and activism center on the impacts of coal mining in rural communities in La Guajira, Colombia. She remains deeply involved and committed to her research site, working in solidarity with displaced communities to improve their living conditions. In Tennessee, she keeps a small hobby farm with her husband.

**Will Barbour** is a Ph.D. candidate in the Department of Civil and Environmental Engineering and the Institute for Software Integrated Systems. His interdisciplinary research is focused on transportation, big data, sensing, and artificial intelligence. He is passionate about the sustainability and public policy implications of his research. In his free time, Will enjoys woodworking, cycling, kayaking, and hiking with his dog. He is also an Eisenhower Transportation Fellow and an Eno Leadership Fellow. He graduated with an M.S. from the University of Illinois at Urbana-Champaign and a B.S. from the University of Tennessee, Knoxville.

**Corey Brady** is an assistant professor of learning sciences at Vanderbilt. His research focuses on computational modeling and the collective learning of classroom groups. Before entering academia, he worked in industry, leading the design and development of Texas Instruments’ TI-Navigator system (2001–2006) and running two education technology startups. He has also been a classroom teacher, at middle school, high school, and community college levels. He holds degrees in pure mathematics (M.S.), English literature (M.A.), and mathematics education (Ph.D.).

**Jason Brasel** is a math teacher and math education researcher at the University of Michigan. He is interested in the interplay between teachers’ mathematical knowledge and teaching practice. He holds a bachelor’s degree in mathematics from the

University of California, Berkeley, and a master’s in learning, teaching, and diversity from Vanderbilt University. He lives in Nashville with his wife, three daughters, and catahoula.

**Blake Dunshee** is a Ph.D. student in the mathematics department at Vanderbilt University. His wide-ranging interests span any subject that can be mathematically analyzed and those that he wishes could be. These include (but are definitely not limited to) graph theory, investing, behavioral economics, sabermetrics, bioethics, and theology. Blake is a sports fanatic as well as a board, card, and lawn game enthusiast. He considers himself living proof that sound strategy can marginally make up for an otherwise mediocre skill set. If he got to choose his own sponsors, they would be Investopedia, Spikeball, Dominion, and Les Misérables.

**Walt Ecton** is a Ph.D. student in the Department of Leadership, Policy, and Organizations at Vanderbilt University. His research focuses on the role of public opinion and politics in education and on the policies affecting students’ transitions from high school into college and the workforce. Prior to his doctoral studies, Walt taught high school history in Atlanta, Georgia, and worked in student success technology and consulting with the Education Advisory Board in Washington, D.C. In his free time, Walt loves running, listening to podcasts (usually while running!), and checking out all the great art, theatre, and music that Nashville has to offer!

**Dawson Gray** is in his fifteenth year with Vanderbilt Programs for Talented Youth and his thirteenth year as an instructor. He currently teaches at Battle Ground Academy in Franklin, Tennessee, where he serves as the mathematics department chair for grades 5–12 and teaches AP statistics, AP calculus, and college preparatory calculus. He graduated from Vanderbilt University with a double major in piano performance and mathematics, and he completed a master’s degree in secondary education with an emphasis on mathematics at Vanderbilt Peabody College.

**Bonnie Griffin** is a fourth-year Ph.D. student studying French literature at Vanderbilt University. For her dissertation research, she studies allegorical and physical voyages to utopia in seventeenth- and eighteenth-century French voyage literature. She investigates how such voyages to imagined places provide insight into the articulation of dominant cultural institutions and give clues about how such literature both upholds and subverts social norms. When she isn’t reading or writing, Bonnie enjoys rock climbing, hiking, and traveling.

**Erika Grundstrom** loves sharing the wonder of the universe with everyone young and old and has done so for ten years with Programs for Talented Youth. She is the director of astronomy labs and outreach in the Department of Physics and Astronomy at Vanderbilt University, and her research combines interests in massive stars, spectroscopy, and astronomy education. She received a doctorate from Georgia State University in 2007. Education and outreach have brought her (and often an inflatable planetarium) into schools throughout the Nashville region and have provided opportunities to develop and teach curriculum for fifth-, sixth-, and ninth-grade students. Outside the classroom, she loves to play with her husband and toddler, partner dance, play sand volleyball, and travel.

**Jan Elaine Harris** is an associate professor of English and writing at Lipscomb University. Jan earned her Ph.D. from the University of Alabama in 2008. Six poems from her collection in progress, *Voyager*, were featured in *Waxing and Waning's* fall 2017 Issue. She has given readings of her work at SCMLA (2017), PCA/ACA (2018), and RMMLA (2018). One of her poems was featured on Spokane Public Radio in February 2018. Other poems of hers have appeared in *Anthology*, *Event*, and *Exposition*. When Jan is not teaching or writing, she is probably hanging out with her GSPs, Malloy and Astrid.

**John P. Koch** is a senior lecturer and the associate director of debate in the Department of Communication Studies. He has a Ph.D. in communication studies, with an emphasis in rhetoric, from Wayne State University. His primary research interests include argumentation and debate, citizenship, democratic theory, and presidential rhetoric. His other areas of interest are public memory and the intersection of political culture, rhetoric, and sports.

**David Ian Lee** currently serves as full-time faculty for the Theatre and Dance program at Tennessee State University and as co-producing artistic director for Nashville's Pipeline-Collective, an organization that creates guerrilla-style theatre, with emphasis on the craft of the actor, dynamic storytelling, and theatrical magic on a shoestring budget. He is a freelance actor and director, having worked in New York for companies including Pearl Theatre Company, Manhattan Theatre Source, Boomerang, Gideon, and Flux Ensemble; for regional theatres including Actors Theatre of Louisville, Milwaukee Rep, Arizona Rep, and Tennessee Rep; and for classical companies including New York Classical Theatre, Arkansas Shakespeare, Illinois Shakespeare, Sedona Shakespeare, Utah Shakespeare, and Nashville Shakespeare. He is an internationally produced playwright, with recent productions of his work in Canada, South Africa, Scotland, and Greece. He has presented at conferences including the

Association for Theatre in Higher Education (ATHE) and the Mid-America Theatre Conference (MATC) and will present again at MATC 2019. A graduate of the William Esper Studio, he received his M.F.A. in directing in 2015 from Illinois State University, where he was honored with an Outstanding Teaching Award. He has proudly taught with Vanderbilt's Programs for Talented Youth since 2016. Favorite credit: his son, Beckett Harrison Lee.

**Kelsay Neely** is a NASA Space Grant Fellow in the mechanical engineering department at Vanderbilt. Her doctoral work focuses on energetic material architectures and in-space manufacturing. In her free time, Kelsay enjoys watching cooking shows, playing racquetball, and trivia.

**Sarah Beth O'Brien** loves sharing her passion for discussing the big questions of life with everyone and empowering them to turn thought into action. Sarah is a Ph.D. candidate in philosophical and theological studies at Drew University with concentrations in women's and gender studies and ecology. A 2013 graduate of the Vanderbilt University College of Arts and Science, Sarah completed her master of theological studies at Iliff School of Theology. Her research interests center around questions of ontology, justice, and power as they relate to gender-based violence and the environment, at the intersections of legal studies, twentieth-century continental philosophy, feminism, posthumanism, environmental philosophy, and ethics. Sarah has taught philosophy of law at Kean University and is excited to bring this course to Programs for Talented Youth. When she is not teaching and researching, Sarah enjoys climbing mountains, experimenting with flavors in the kitchen, and challenging her assumptions through foreign travel.

"I can honestly say that I feel more motivated across the board and understand more of what I want from my education, myself, and my future. This program challenged me and brought me out of my comfort zone in ways that I didn't know were possible. I also met fellow classmates who I believe will be lifelong friends."



“My teacher and TA were wonderful and inspired me to learn for the joy of learning.”

**Andrea Perreault** is a fourth-year Ph.D. student in the Chemical and Physical Biology program at Vanderbilt University. She earned a B.A. in mathematics and a B.S. in biology from High Point University. Her dissertation research investigates gene regulation in erythroid cell differentiation, focusing on chromatin interactions and modeling transcriptional dynamics. In her free time, Andrea enjoys running, cooking with friends, and listening to all the live music in Nashville.

**Greg Smith** is a fourth-year Ph.D. candidate in the Department of Earth and Environmental Sciences at Vanderbilt and a graduate teaching fellow at the Vanderbilt Center for Teaching. His research is in the field of paleoecology, which uses the fossil record as a tool to extend the natural environment back in time. He is interested in the ecological interactions between extinct relatives of African and Asian elephants and hopes to use insight into how past organisms responded to climatic and environmental change to make predictions about how modern elephants may respond to similar changes today. In his free time, Greg enjoys backpacking, rock climbing, kayaking, and yoga with his wife, Lauren. Greg loves teaching and hopes to help inspire future generations of ecologists, geologists, and paleontologists to follow their dreams!

**Darren Tinker** is a NASA Space Technology Research Fellow in the mechanical engineering department at Vanderbilt. He is a Kentucky native and spent his childhood launching (or rapidly disassembling) model rockets. Presently, he is working on his Ph.D. on compact augmented spark igniters.

**Courtney Travers** is a senior lecturer in communication studies at Vanderbilt University. Her research and teaching focus on American political and popular culture, particularly during the early Cold War era. Her current project examines Jacqueline Kennedy's visual rhetorical influence on the Kennedy administration. She teaches public speaking and history of speechmaking courses for Vanderbilt University.

**Kevin Vanzant** received his Ph.D. from Vanderbilt in 2013 and now teaches history at Tennessee State University. He believes that the central challenge facing history teachers today is how to keep historical instruction current and relevant in an ever-changing world. His classes are always experimental, and he is constantly gathering feedback from students about how they see a history class fitting into their world.

The result has been history classes that are far from frozen in time but change dramatically from year to year. History classes, as Vanzant has learned, can be whatever teachers and students want them to be or, alternatively, whatever the world, no matter how much it changes, needs them to be. Vanzant is full of optimism that historical instruction can be as important today as ever.

**Danyelle Valentine** is completing her Atlantic-world history Ph.D. at Vanderbilt University. She is interested in the forced and voluntary migration of enslaved peoples from the United States to islands in the British West Indies from the late eighteenth through the early nineteenth centuries. Her dissertation, *Embarking on Revolutionary Migrations: The Black Loyalists' Southern Campaign for Freedom during the Revolutionary Era, 1775–1862*, explores the relocation and settlement experiences of “Black Loyalists” in Jamaica and other islands throughout the British Caribbean. In addition to her dissertation research, Danyelle investigates the intersections between race, gender, and capitalism within Creole societies in the British Caribbean.

**Susan Verberne-Sutton** is a senior lecturer in the Department of Chemistry in the College of Arts and Science at Vanderbilt University. She has over eight years of experience teaching courses from freshman chemistry to senior-level nano-based courses with Oak Ridge National Laboratory. She draws from her experience as a synthetic chemist in Silicon Valley, as well as her time as director of a nanoscience laboratory, to build a course that will showcase contemporary skill sets in the materials industry. She earned her Ph.D. at Louisiana State University where her dissertation focused on surface science, the interface between chemistry and devices, using nanotemplating technologies to develop surface architectures for polymer-based photovoltaics (plastic solar cells).

**Greg Walker** is an associate professor of mechanical engineering and holds several other appointments at Vanderbilt, including in the Interdisciplinary Materials Science program, the Thermal Engineering Lab, the Advanced Computing Center for Research and Education, and the Vanderbilt Institute of Nanoscale Science and Engineering. His research interests include the modeling and simulation of nonequilibrium, coupled energy transport in electronics, and energy conversion materials.

**“In my experience, universities can play a role in encouraging and supporting the most talented young learners. And it is important that we do so—for their well-being and for our common future.”**

*Dean Camilla Benbow, an internationally recognized researcher of gifted and talented youth, co-director of the Study of Mathematically Precocious Youth, and Patricia and Rodes Hart Dean of Education and Human Development at Peabody College, founded Vanderbilt Programs for Talented Youth (PTY) in 2000 as a summer residential academic program on the campus of Vanderbilt University.*



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# Vanderbilt University Programs for Talented Youth

**Developing talent in gifted students and those who work with them**

## FOR STUDENTS

### **SAVY—Saturday Academy at Vanderbilt for the Young**

Day Program—Held each fall and spring. Students in grades K–6 engage with like-ability peers in accelerated courses on Saturdays.

### **SAVY—Summer Academy at Vanderbilt for the Young**

Day Program—Each summer, rising 1st–6th grade students take part in a variety of advanced courses taught by content experts. Weekly sessions are available for all grades in the months of June and July.

### **Career Connections at SAVY**

Day Program—Career Connections, a rising 7th-grade program within Summer SAVY, immerses students in a topic of study as they experience how expert knowledge and skills are applied in different fields, industries, and/or research.

### **WAVU—Weekend Academy at Vanderbilt University**

Day Program—An intensive Saturday of career-focused courses in a hands-on laboratory environment. Fall and spring options for advanced learners in grades 7–10.

### **VSA—Vanderbilt Summer Academy**

Residential Program—For students entering grades 7–12, VSA offers accelerated courses in 1–3 week summer sessions. Students live on campus and take advanced level courses taught by VU faculty and graduate students in a challenging yet supportive environment.

## FOR EDUCATORS AND PARENTS

### **GEI—Gifted Education Institute**

GEI offers professional development opportunities to educators and parents of high-ability learners. Access summer conferences, academic-year workshops, and courses on our website: [pty.vanderbilt.edu/educators/gifted-education-institute](http://pty.vanderbilt.edu/educators/gifted-education-institute)

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