Welcome to CBK Summer!

Welcome to the Center for Bright Kids! This is our 39th year operating summer programs for bright, high interest and high ability students. The logo for the Center for Bright Kids communicates our emphasis on community and energy. As we hope that our programs offer "a bright spot for bright kids," the logo embodies the movement, energy, and connections that CBK can offer, as well as the possibilities for moving forward and transcending layers or borders that often present obstacles to our gifted and talented students. We hope to bring kids together to learn, think, and live in an intellectual community that is safe, while still presenting the challenge, enthusiasm, and rigor that encourage kids to take their experiences with this community and apply them to the lifelong journey beyond CBK.

As such, our summer programs are focused on a talent development model that balances academic experiences with residential life. Residential programs offer students a fresh start with their peers, often enabling them to feel more accepted as they share experiences with other gifted and talented students. Our students have unique interactions, develop leadership skills, exchange ideas, and build friendships with a diverse group of individuals from across the country in an inquiry-driven, hands-on learning environment that provides a space to take risks in thinking differently. The University of Colorado Boulder is our home for offering high interest courses full of academic rigor, new experiences, and fresh challenges as well as dynamic recreational opportunities while we nestle into the Flatirons of the Rocky Mountains for the summer. This summer, there are likely to be modifications in place on campus due to the pandemic. We appreciate your patience as we navigate these shifts with you! Please remember you must set up a family account for CBK Summer that you can sign in and out of to manage your experience! Every family will need to create a new account, as we purge records to protect student data.

This catalogue includes all three summer programs with 2021 course and program information. Every year, many courses and instructors change, but a majority of our students continue coming back as they age through the programs. If summer programs are only part of your CBK participation, please check out the Western Academic Talent Search and our other programs at our website:

www.centerforbrightkids.org

In this year of changes, we especially want to welcome families from DukeTIP to the CBK Family! Join the thousands of kids and families who participate in CBK programs each year. Feel free to give us a call at 303-428-2634 or drop us an e-mail at cbk@centerforbrightkids.org for more information about us and the ways we support the academic, social, and emotional growth of bright youth.

I look forward to seeing you this summer!

Dr. Amy Rushneck, Executive Director
# Table of Contents

- CBK Philosophy and Welcome .......................................................... 4
- Mission and Vision Statements ......................................................... 5
- The University of Colorado Boulder .................................................. 5
- What is Talent Search? ...................................................................... 6
- Frequently Asked Questions ............................................................. 6
- Programs Overview .......................................................................... 7
- Program Eligibility ........................................................................... 7
- Course Selection ................................................................................
  - SHINE Program ............................................................................ 8
    - Aug 1-7, Grades 4-6 in fall 2021 ....................................................
  - GLOW Program ............................................................................ 12
    - June 13-26, Grades 6-8 in fall 2021 ..............................................
  - The Luminary Project .................................................................... 16
    - July 4-24, Grades 8-12 in fall 2021 .............................................
- Student Conduct ............................................................................... 20
- Health Services ...................................................................................
- Homework and Attendance ............................................................... 21
- Student Evaluation and Credit Equivalency ......................................
- Instructors ....................................................................................... 22
- Tuition and Fees ............................................................................... 22
- Financial Aid and Merit Scholarships .............................................. 23
- Application Process and Policies ..................................................... 24
- Portfolio Admission Process .............................................................

3
Since 1982, the Center for Bright Kids has offered summer programs for high-interest, high-ability students. Rooted in the talent development model, CBK summer programs offer students the opportunity to study with bright, motivated peers, enhance their preparation for advanced coursework, and establish long-lasting friendships with students from across the country and around the world. Students with exceptional ability entering grades 4-12 in the fall are offered a varied selection of enrichment and acceleration courses on campus. Together with outstanding instructors, we create courses in which students discover the optimal match of interest, academic ability, and pace of instruction. Residential staff are college students who offer energetic support and insight into the many issues our bright students face. Many staff were once participants themselves! Overall, challenging academics and supervised extracurricular activities enable students to gain academic and social confidence during these intense summer programs. Join us this summer at CBK for the next step on a journey of lifelong learning!

**Mission Statement**

The mission of the Center for Bright Kids is to provide access and opportunities for K-12 students with high interest and/or high ability in quality enrichment and acceleration programming that encourage self-growth, social responsibility, and a positive view toward lifelong learning.

**Vision Statement**

The vision of the Center for Bright Kids is to offer opportunities and experiences that enrich the whole child - intellectual, social, emotional, personal, and ethical.

We believe that it is essential to uphold an authentic commitment to reflect the broad diversity of our families, communities, and region within our programs and to engage community input in those efforts.

We will encourage imaginative thinking, a discovery of the world, a passion for thinking and playing, and a world view that emphasizes recognition of our role as members of a global community.

We promote student independence, confidence, empowerment and positive self-esteem through respectful, responsible, and accountable contributions in a community that is safe and responsive to the need for a sense of belonging.
The University of Colorado Boulder (CU Boulder) is a dynamic community of scholars and learners situated on one of the most spectacular college campuses in the country. CU Boulder is one of 34 U.S. public institutions belonging to the prestigious Association of American Universities (AAU) and has an established reputation for world-class teaching, research, and service to the global society.

At the cornerstone of the university experience are CU Boulder’s innovative academic programs, hands-on opportunities and rigorous course work that will prepare students for a complex global society. Within the supportive learning community, students will interact with world-renowned faculty—which include Nobel laureates, MacArthur “genius grant” fellows, U.S. Professor of the Year awardees and National Medal of Science winners—who listen, question and help students refine their ideas to develop a broad understanding of the world, strong leadership skills and an enhanced ability to think critically.

CU Boulder offers more than 110 undergraduate and graduate programs; 84 bachelor’s majors; 34 concurrent bachelor’s/master’s degree programs; more than 30 minors and 29 certificate programs. The university has 11 research institutes and nearly 90 research centers, with more than 2,000 undergraduate students directly involved in faculty research.

With hands-on experience, world-class education and the ability to think critically, globally and creatively, CU Boulder graduates benefit from a strong salary potential, high employment rates and the opportunity to find and excel in careers they are passionate about.

What is Academic Talent Search?

In 1972, Dr. Julian Stanley, a psychology professor at Johns Hopkins University, introduced the first talent search designed to identify, challenge, and recognize academically able young people. Since 1979, talent search institutions expanded to offer a wide range of academic opportunities and to conduct research, disseminate information, consult with educational organizations, advocate public policy initiatives, and offer diagnostic and counseling services.

Talent Searches identify, assess, and recognize students with exceptional mathematical and/or verbal reasoning abilities. Students qualify for participation in the Academic Talent Search by scoring at or above the 90th percentile on a nationally-normed, standardized aptitude or achievement test. These students are “hitting the ceiling” on these grade comparison tests. The Talent Search gives students the opportunity to take a test designed for older students (above-level), with a higher ceiling. This testing will reveal more about their academic abilities and will allow them to compare their results with those of other highly able students. They will also learn about educational options and opportunities for students with similar abilities, and they will receive recognition for their outstanding achievements. Academic Talent Search is a national model, with only a handful of talent development centers offering this off-level testing opportunity.

The Western Academic Talent Search provides many benefits for high ability students across the western United States. While testing only offers one snapshot of student ability in a portfolio of talent, Academic Talent Search scores are used to help us identify the optimal match of student interest, pace, and ability level as applicants select summer courses and determine what’s next in their academic pursuits.
Frequently Asked Questions

Is my child required to participate in Talent Search in order to attend CBK Summer Programs?
No, students may apply through the portfolio process. Lots of kids access our program this way and do Talent Search later.

Are kids in classes all day long?
No—multiple activity periods are part of the socio-emotional emphasis in all three programs—as much as kids think hard, they play hard. Instructors do not assign extensive homework so that brains can reboot.

Who is in charge on campus? How will I know my child is safe?
Multiple measures are in place to ensure the enjoyment and safety of all participants. All staff are background checked and mandatory reporters, and Campus Safety is part of our team. A CBK administrative team of the Executive Director, Residential Director, and Associate Residential Director are on campus and ALWAYS on call during each program. Please review the Honor Code online for more information on our student policies.

Will my child receive high school or college credit for participating?
Credit transfer cannot be guaranteed, although CBK encourages Luminary Project students to talk with their high school guidance counselors ahead of time to check into this possibility, as equivalency seat hours are met. Full transcripts are provided upon request.

What about the cell phone policy—I am nervous that my student is far from home?
Students are not allowed to have cell phones with them during the program. This policy is for safety and connection to the program. Students arriving by airplane are asked to bring a phone that can be checked in with staff upon arrival. We have found that kids and families very much appreciate this policy once they have experienced it. Most parents are jealous!

Programs Overview

CBK SHINE (Students Headed Into New Enrichment)  
August 1-7
CBK SHINE is a one-week residential program for rising 4th-6th graders who live on campus. Students take one accelerated enrichment course of high interest that offers exploration for four 1/2 hours a day, with a strong, daily, organized residential program to complement the experience.

CBK GLOW (Gaining Leadership, Obtaining Wisdom)  
June 13-26
A transitional program between SHINE and the Luminary Project, rising 6th-8th graders attend this two-week residential experience and focus on one course of study for five 1/2 hours a day that is a blend of academic enrichment and acceleration based on pace, ability, and interest. These courses feel more like high school learning. One full residential weekend provides off-campus activities as part of this program. Students do not go home for the weekend.

The CBK Luminary Project  
July 4-24
The Luminary Project is a three-week residential program for mature rising 8th-12th graders. Students focus on one intensive course of study that is an equivalent to one full year of honors level high school content or one semester of college content. Courses feel more collegiate. Classes meet six hours a day for total high school credit equivalency seat-hours. Two full residential weekends provide off-campus activities and one instructional period. Students do not go home for the weekends.

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Program Eligibility

Students qualify for CBK Summer Programs based on SAT, ACT, PSAT 8/9 test scores or through a portfolio admission process (see page 24 for more information on portfolios). Reading, Writing, or English scores are used to determine eligibility for Humanities courses, and Mathematics or Science scores determine eligibility for STEM courses. Please review the chart below for score requirements and see courses for coding. Scores from any Academic Talent Search for program admission are good for two years (Jan 2019); students are not required to retest each year in order to maintain eligibility for the summer programs unless aging up. Students may attend more than one program. AGE OR GRADE RANGES are indicated as of the first day of the applicable program and on program pages are all indicated as rising grades (grade in fall following summer).

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<th>OR PORTFOLIO</th>
<th>PSAT 8/9</th>
<th>ACT</th>
<th>SAT</th>
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<tbody>
<tr>
<td>SHINE</td>
<td>PSAT registration OR eligibility for WATS</td>
<td>ACT report, no minimum score</td>
<td>SAT report, no minimum score</td>
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<tr>
<td>GLOW</td>
<td>R24, M420, or EBRW 480</td>
<td>M/S21; R/E21</td>
<td>M520; R26; EBRW520</td>
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<tr>
<td>Luminary</td>
<td>Not accepted</td>
<td>M/S22; R/E22</td>
<td>M550; R28; EBRW550</td>
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Course Selection

Students should choose courses to which they are willing to commit time, energy, and enthusiasm, and that are in line with their academic strengths, interests, and educational objectives. These choices will be reviewed for optimal match (p.5). Students will be placed in their first choice courses when possible. First choices are honored on a first-come, first-served basis. Class size for all courses is limited based on enrollments. Courses with too few students will be cancelled and students moved to their next available choice. Applications will not be considered until fully complete including recommendations and required payments. Students should only list courses on their application which they are willing and motivated to attend, if assigned. This includes second and third choice courses. The application fee is nonrefundable for any reason. CBK reserves the right to cancel any course due to insufficient enrollment.
CBK SHINE is a one-week residential program for 4th-6th graders who live on campus. Students take one accelerated enrichment course of interest that offers exploration for **four 1/2 hours a day**, with a strong, daily, organized residential program to complement the experience. This program focuses on conceptual development through hands-on experiences that include inquiry, creativity, aesthetic expression, and problem solving. Residential life and programs promote friendships and social interaction with peers who also have high academic and creative interest.

**STUDENTS:** Students entering **grades 4-6** in fall 2021 or ages 8-12  
**DATES:** Sunday, August 1 – Saturday, August 7  
**ADMISSION:** PSAT 8/9 registration, ACT or SAT score report  
OR 90% or higher on a national test as eligible for WATS or portfolio application

**2021 SHINE Courses**

- Tools of Gameplay: Developing Mechanics in Video Games (M/S)  
- “Making” History: Artistic Techniques Over Time (H)  
- The Alphabet of Life: Intro to Organic Chemistry (M/S)  
- Newton at the Theme Park: The Physics of Tummy Flips (M/S)  
- Narratives of East Asia: The Who, What, and Why of Stories (H)  
- Hacking Biology: Rewriting the Genetic Code (M/S)

*(denoted by (H)umanities, (M)ath, and/or (S)ciences focus for eligibility)*
Tools of Gameplay: Developing Mechanics in Video Games
What does it take to make a video game? In this course we’ll use Python with Pygame to create our own video games and learn how to make those games fun. We’ll start with simple "games" and figure out how to add more and more mechanics to improve our enjoyment. We’ll investigate the ways in which we can create many different styles of games and see how we can combine their pieces and use quick prototyping to make the result fun. Along the way, we’ll learn about the core principles of good programming practices, so that we can make changes easily and understand what our games will do. Our investigation of good game design and programming will culminate in the creation of our very own games we’ll be able to play and add to at home.

($80 lab fee: computer access, software, and login)
Ben Sattelberg received his B.S. and M.S. in Applied and Computational Mathematics from the Colorado School of Mines. He is currently pursuing a Ph.D. in Computer Science at Colorado State University, focusing on mathematical understanding of artificial neural network behavior. Ben has been involved with CBK for many years in a variety of positions, and loves coming back to the CBK family every summer.

“Making” History: Artistic Techniques Over Time
Do we make art the same way we always have? What’s changed across artistic techniques, and why are these changes important in understanding art history across cultures and peoples? Together we’ll explore many styles and methods of creation including Dada collage, 3D string “drawing,” and relief printing. We’ll also learn from artists both old and new - from the more traditional styles of DaVinci’s illustration methods and Hokusai’s wood-block prints, to the contemporary abstraction of Bridget Riley’s optical illusions and Yayoi Kusama’s obsessive swarms of pattern and texture. Follow in the footsteps of amazing artists and begin your own journey in artistic technique within the foundations of art history!

($60 lab fee)
Emaline Gotthoffer-duCharme has shown art in the Colorado Springs Gallery of Contemporary Art multiple times and studied fine arts for several years. She’s won state-level snow carving competitions as well as assisting teaching courses in Illustration and Design at the University of Colorado, Colorado Springs. Emaline spends her work time at a pottery studio inventing new sample techniques. She is thrilled to be back for another creative summer!

The Alphabet of Life: Intro to Organic Chemistry
Taste, smell, color - life is a rich experience made possible through the world of organic chemistry, specifically studying molecules that contain carbon. Hydrogen, oxygen, and nitrogen are also crucial atoms we investigate in organic and biological chemistry that help us explore the sensations that make up our lives. Did you know there are more than 16 million carbon-containing compounds known to chemists? In fact, chemists make thousands of new compounds each year, and more than 90% of these contain carbon! We will learn about atoms and molecules, why we should study chemistry, how to classify matter, the importance of measurement, the basics of how molecules are built from atoms, and the organic chemistry of everyday things – ranging from gasoline to vinegar, to nail polish remover to aspirin, and even to DNA!

($50 lab fee)
Dan Reddy completed his B.S. in Chemistry and a B.S. in Clinical Health from Liberty University and an M.S. in Organic Chemistry from Purdue University, studying amine-borane chemistry in the H.C. Brown Center for Borane Research. At Purdue, he received a first-year teaching award. He has been a TA with Johns Hopkins CTY and DukeTIP programs and is looking forward to a summer with CBK. He has also interned with the Naval Nuclear Laboratory and Merck in their analytical departments. Dan is planning to start his PhD this fall at the University of Cambridge working with metal-organic compounds.

Newton at the Theme Park: The Physics of Tummy Flips
Have you ever wondered why you don’t fall out of a roller coaster when you go through a loop? Why don’t you fall to the ground in a spinning ride when the floor drops out? In this course, we will learn how these thrills work. First, we will start by analyzing what happens when a tower ride drops and leaves your stomach behind. Then, we’ll investigate how rides like The Rotor seem to defy gravity just by spinning your body in a bucket, discussing non-inertial reference frames and the spin of Earth. Finally, we’ll analyze the best elements of roller coasters using Newton’s Laws, including banked turns, brake runs, lift hills and launch tracks, helixes, rolls, corkscrews, and loops. As we learn about how these elements work, we’ll ride coasters virtually to see what we learned in action!

($20 lab fee)
Ben Chapel is an undergraduate at the University of Colorado Boulder studying Engineering Physics and Applied Mathematics. He has worked as a Learning Assistant in various physics courses at CU, as well as tutoring for math and physics courses. He plans to attend grad school and eventually become a researcher, continuing to teach physics in some form throughout. Ben has a passion for physics and is excited to teach at CBK this summer!
Narratives of East Asia: The Who, What, and Why of Stories

Who was Hua Mulan, the legendary female warrior who took her father’s place in the Chinese army? Why was the state of Manchukuo allowed to split from the Republic of China? And do these stories, more than 1500 years apart, have more in common than we think? In this class, we’ll explore these unexpected links as we discover how history gets made, who makes decisions about what stories get written, and why these “deciders” choose to tell the tales we read. By reading and analyzing first-hand accounts and comparing them with “historic” perspectives, students will learn to question the ways stories get passed on and understand how to look at history as a process. We will then craft our own narratives of history in order to experience the challenges of how history gets told.

Jasper Howald is currently finishing his degree in East Asian Studies with a focus on Japanese studies at Columbia University. He spends his free time practicing karate and martial arts from around the world. He also loves to turn the untold history of the pre-modern world into settings for stories and tabletop games. He is incredibly excited to return to the CBK family and help create the experiences that keep him coming back every summer.

Hacking Biology: Rewriting the Genetic Code

We live in an exciting age of discovery in biology. We have the potential to eliminate many of the problems that have plagued our society since the beginning of human life, ranging from hunger and disease to cancer and aging. The discovery of DNA, and the Nobel Prize-winning means to change it through CRISPR/Cas9 means that we could be on the verge of a biological golden age. To understand this incredible feat and the potential of this breakthrough, we’ll look into the cell and what makes life possible. We’ll examine the many developments that have led to gene editing and consider the ethics of this field. Finally, students will engage in a multidisciplinary approach to discover how genetic engineering could allow us to make many disease-related problems history.

($40 lab fee)

Jordan Kassanoff is studying molecular, cellular, and developmental biology at CU Boulder. From humble roots studying neighborhood pond scum through the microscope in his basement, he’s gone on to research microbiology at labs at Anschutz Medical Campus and in Boulder. Jordan attended CBK for many years, and is excited to return to the family this summer.
SHINE Program Format

Student Housing and Supervision
Students will be housed in a smaller traditional residence hall, which is locked at all times to outsiders. We are the only program in this building during the summer. Students live in wings of no more than 14 participants per Residential Assistant. Students live in nicely-sized rooms with two XL twin beds. The shared floor bathroom offers private showers. Students will be assigned a roommate approximately the same age and in a different course unless they have made specific requests—both students must request one another on their acceptance forms. Roommate requests cannot be guaranteed to be filled and roommates are not reassigned. Siblings will not be placed on the same wing as we are able. In this program, students are escorted to all activities and are not unsupervised at any time. Residential Assistants are thoroughly screened and selected for their ability to relate to students of this age and they participate in a rigorous pre-program training that includes other campus personnel who are present throughout the program to ensure student safety. Access to e-mail and phone calls will be available on a very limited basis to prevent homesickness. Students may not bring personal computers, cell phones, or any transmitting devices. Kids will not do laundry during this program due to time constraints. Students are required to live on campus and to participate in both the academic and residential life of the program. This may mean that students will miss sports practices or other extracurricular commitments at home. CBK is unable to accommodate competitions, performances, physical training regimens or lessons schedules. CBK operates as a closed campus and visitors are not allowed at any time during the program for student safety.

Daily Schedule

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<td>7:30am-9:30am</td>
<td>Breakfast and Morning Wing Time</td>
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<td>9:30am-11:30am</td>
<td>Morning Instruction</td>
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<td>11:30am-12:30pm</td>
<td>Lunch</td>
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<td>12:30pm-3:00pm</td>
<td>Afternoon Instruction</td>
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<td>3:00pm-4:30pm</td>
<td>Afternoon Activities</td>
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<td>4:30pm-5:30pm</td>
<td>Quiet Time on Wings</td>
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<td>5:30pm-6:30pm</td>
<td>Dinner</td>
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<tr>
<td>6:30pm-8:00pm</td>
<td>Evening Activities</td>
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<tr>
<td>8:00pm-8:30pm</td>
<td>Wing Meetings</td>
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<tr>
<td>8:30pm-9:30pm</td>
<td>Quiet Time on Wings</td>
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<tr>
<td>9:30 pm</td>
<td>Lights Out</td>
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The schedule for this program is extremely structured. We have a wide range of activities planned for afternoons and evenings for students to choose from as part of the community life of the program. Students are expected to adhere to the outlined schedule, regardless of how it may differ from life at home, for the safety and well-being of all students.

Activity Periods
During each activity period, residential staff offer a variety of options from which students choose to participate. From athletics to academics to fine arts, these opportunities give kids a chance to do something they love or try something new, and to take a well-deserved break from class. They also provide a great time to meet other kids in the program from different courses and wings as the community learns more about one another. All activities are supervised and vary each day and each period. Some are held in or near the residence hall, while others take place at the NIRSA award-winning CU Boulder Recreational Center, such as dance, yoga, jogging, racquetball, basketball, indoor soccer, and limited visits as possible to the pool and climbing wall. Finally, due to our proximity to the foothills, activities may also take place in the near vicinity at parks or on marked hiking paths.
A transitional program between CBK SHINE and The Luminary Project, **CBK GLOW** is for 6th-8th graders. These participants attend a two-week residential experience held on campus and focus on one course of study for **five 1/2 hours a day** that may be either an accelerated enrichment opportunity or an intensive, accelerated, rigorous experience. CBK GLOW serves to help students move from enrichment work to more intensive study with a dynamic group of high-interest peers. Residential life and programs promote friendships and social interaction with peers who also have high academic and creative interest. A rich weekend program is a required experience.

**STUDENTS**: Students entering **grades 6-8** in fall 2021 or ages **10-14**

**DATES**: Sunday, June 13—Saturday, June 26

**MATH/SCIENCE ADMISSION (M/S)**

SAT-M 520  
ACT-M or S 21  
PSAT 8/9 M 420

**HUMANITIES ADMISSION (H)**

SAT-R 26 or EBRW 520  
ACT-R or E 21  
PSAT 8/9 R 24 or EBRW 480

**or portfolio application**

**2021 GLOW Courses**

What Does It Take to Be a Superhero? Identity and Power in Comics (H)  
Acceleration, Rotation, and Elation: Roller Coaster Physics (M/S)  
Strategy and Statistics: Winning Games with AI (M/S)  
Masterpieces to Fridge Magnets: The Material World of Art (H)  
Reactions and Responses: Functional Groups in O-Chem (M/S)  
Bronze Swords to Soda Cans: Metallurgy and Humanity (H/S)  
Narratives of East Asia: Okinawa and Unheard Voices in History (H)

*(denoted by (H)umanities, (M)ath, and/or (S)cience focus for eligibility)*
What Does It Take to Be a Superhero? Identity and Power in Comics
Who people are and what they can do combine in complex ways to make a regular character into a superhero. For generations, people have been fascinated and inspired by these incredible characters and the larger-than-life universes these characters exist within. When we study those universes and study our society's responses to them, it is possible to glean an understanding of the way that different identities - and the powers they wield - function in our own world. One of the most fundamental identities at work in both comic books and the real world is gender, and the superpowers that individuals of different genders are represented as having in comics hold a faceted mirror up to the way that gender and power play out in American society. In this course we will trace several patterns and threads of identities and power in comic books dating back to the Golden Age through today, and explore the way gender roles and expectations either grant or deny power, super or not.

Jess Kern is an English Language Development teacher at a social justice high school in Denver. She is also a longtime CBK family member, and has been a student, a TA, an RA, an instructor, and a co-instructor so far in her time at CBK. She completed her B.A. at University of Colorado Boulder in History and Spanish Literature and received her M.A. from University of Chicago in Social Science, focusing on queer history and literature in Cuba. Beyond her passions for teaching, learning, and social justice, Jess enjoys pottery, cats, and reading and writing science fiction and fantasy.

Acceleration, Rotation, and Elation: Roller Coaster Physics
Are you a roller coaster enthusiast or theme park adrenaline junkie? Do you love those weird feelings you get in your body when you ride coasters, drop towers, or spinners all day? Amusement parks are lots of fun, but how can rides move around at 100 mph and not go flying off their bases? In this course, we will begin by looking at the physics of drops and spinning, leading into the investigation of non-inertial reference frames and what centrifugal force really is. This will allow us to apply Newton’s Laws, the conservation of energy, and classical mechanics to roller coasters to figure out how they can stay together. After a brief introduction to calculus, we will take our investigations to the next level, using Lagrangian mechanics as applied to the dynamics of particles when we solve for the equations of motion in roller coasters. This class will culminate with students working together to design roller coasters of their own that not only stay on the tracks, but allow humans to safely ride! (S40 lab fee)

Prerequisites: Algebra 1 or content equivalent with equations and expressions that will allow for intro to calc

Ben Chapel is an undergraduate at the University of Colorado Boulder studying Engineering Physics and Applied Mathematics. He has worked as a Learning Assistant in various physics courses at CU, as well as tutoring for math and physics courses. He plans to attend grad school and eventually become a researcher, continuing to teach physics in some form throughout. Ben has a passion for physics and is excited to teach at CBK this summer!

Strategy and Statistics: Winning Games with AI
Deep Blue, AlphaGo, and IBM Watson demonstrated that computers can be better at games than people. Can we approximate the success of artificial intelligence (AI) on simpler games without the months or years of training? In this course we’ll teach artificially intelligent agents how to win! We’ll look at optimization methods for artificial intelligence, including minimax, alpha-beta pruning, reinforcement learning, and search techniques. Using those methods, we’ll teach AI to play optimally in games such as tic-tac-toe and reversi, and approximate optimality in more complex games like chess. While analyzing these games, we’ll examine topics in game theory, decision theory, and Bayesian statistics so that our agents can create effective strategies in the face of opposition and uncertainty. In order to understand the potential consequences of those strategies, we’ll discuss the implications of “intelligent” AI that can make decisions and think - as partially explored in science fiction media such as WarGames and 2001: A Space Odyssey. To implement our AI agents and the systems they work in, we’ll learn core principles of programming in Python, including topics such as recursion, object-oriented design, and functions.

(S80 lab fee: computer access, software, and login)

Prerequisites: some programming experience preferred

Ben Sattelberg received his B.S. and M.S. in Applied and Computational Mathematics from the Colorado School of Mines. He is currently pursuing a Ph.D. in Computer Science at Colorado State University, focusing on mathematical understanding of artificial neural network behavior. Ben has been involved with CBK for many years in a variety of positions, and loves coming back to the CBK family every summer.

Masterpieces to Fridge Magnets: The Material World of Art
Why would an artist choose to use LEGO’s instead of oil paints for a work of art? How do artists make decisions about which materials to use for their pieces? What do different materials "mean?" In this course, students will pick a famous work of art to recreate using several styles as we explore the history of artistic revolutions. By exploring the use of materials across various art forms through the lens of the same core piece, we’ll learn about intersections among cultural movements as various as Hannah Höch’s dadaist collages or Piet Mondrian’s minimalist idealism. We will travel around the world to understand the history of these cultural movements and the influences that art, medium, and materials have had in shaping that history. At the same time, we’ll investigate the impact and importance of smaller scale artists as surprising as cake decorators on Instagram in influencing culture using social media!

(S80 lab fee: studio materials and software)

Emaline Gotthoffer-duCharme has shown art in the Colorado Springs Gallery of Contemporary Art multiple times and studied fine arts for several years. She’s won state-level snow carving competitions as well as assisting teaching courses in Illustration and Design at the University of Colorado, Colorado Springs.
Reactions and Responses: Functional Groups in O-Chem
What makes sugar sweet? Why are Sour Patch Kids sour? Why does cologne or perfume smell so good? Aldehydes, carboxylic acids, and ketones - in this course we will take a look at the major “families,” or functional groups, that make up the world of organic chemistry and the unique properties that these families possess. By learning about different functional groups, you will be aware of encounters with chemistry on a daily basis, from food, pharmaceutical labels, and gasoline pumps, to current headlines in chemical developments. Research chemists synthesize new compounds, develop new reactions, uncover chemical properties that were previously unknown, find new applications for known compounds, and refine theories based on the chemistry of organic compounds as dominated by the nature of their functional groups. We will learn about the structures of these functional groups and the major reactions that they can undergo, as well as their relevance to the organic chemistry laboratory.
($40 lab fee)
Prerequisites: some introductory or general chemistry background preferred
Dan Reddy completed his B.S. in Chemistry and a B.S. in Clinical Health from Liberty University and an M.S. in Organic Chemistry from Purdue University, studying amine-borane chemistry in the H.C. Brown Center for Borane Research. At Purdue, he received a first-year teaching award. He has been a TA with Johns Hopkins CTY and DukeTIP programs and is looking forward to a summer with CBK. He has also interned with the Naval Nuclear Laboratory and Merck in their analytical departments. Dan is planning to start his PhD this fall at the University of Cambridge working with metal-organic compounds.

Bronze Swords to Soda Cans: Metallurgy and Humanity
Humanity has been fascinated by metal for the entirety of written history, and even earlier into prehistoric times. Metallurgy is the study of metallic elements and mixtures of metallic and certain nonmetallic elements, called alloys. In this course, you will uncover our history with metal by exploring the different Ages of history defined specifically by the utilization and industrialization of metals. We will also work directly with metals by exploring annealing - the heating and cooling of metals to toughen them - and work-hardening - the physical processes of deforming metals. We will learn about phase diagrams and atomic structures by experimenting with metals and alloys, such as copper, aluminum, and iron to find their properties - and determine how these metals might be utilized. From aviation to fabrication, medicine to welding - metal has shaped the human experience. No experience required, but creative ideas welcomed!
($60 lab fee)
Christopher Creason is currently studying at Metropolitan State University, Denver, to be a high school science teacher. He previously earned a degree in Applied Sciences for Welding Engineering and spent three years working as a fabricator and pressure vessel welder. Christopher has a deep passion for science, and he also loves being a Maker, reading science fiction and fantasy, and playing video games.

Narratives of East Asia: Okinawa and Unheard Voices in History
Okinawa Prefecture, the southernmost part of Japan, has a beautiful tropical climate, a rich culture of art and dance, and some of the healthiest and long-lived people in the world. This tiny island chain has played a gigantic part in the culture, trade, and military history of much larger nations, from bringing sugar cane and the matchlock rifle to Japan, to connecting China to trade partners throughout the Pacific, and even being the first country to see American ships dock in their harbors. So why are stories of Okinawa so absent in historical narratives of “East Asia”? We will be focusing on how the writing of history both creates meaning and privileges certain perspectives, and comparing primary sources with more modern retellings to both reveal crucial gaps and explore how to fill in those gaps and empower those voices. This class will prioritize looking at the interconnectedness of various East Asian cultures and historical narratives, without overlooking their uniqueness and individual cultural identities.
Jasper Howald is currently finishing his degree in East Asian Studies with a focus on Japanese studies at Columbia University. He spends his free time practicing karate and martial arts from around the world. He also loves to turn the untold history of the pre-modern world into settings for stories and tabletop games. He is incredibly excited to return to the CBK family and help create the experiences that keep him coming back every summer.

“The residential program was wonderful – it was a very positive growing experience. The program was very organized and I felt very comfortable leaving my child.”

“The top thing I learned about myself is that there are other people similar to me and that makes me think, ‘I am as special as anyone else.'”
**Student Housing and Supervision**

Students will be housed in a smaller traditional residence hall, which is locked at all times to outsiders. We are the only program in this building during the summer. Students live in wings of no more than 14 participants per Residential Assistant. Students live in nicely-sized rooms with two XL twin beds. The shared floor bathroom offers private showers. Students will be assigned a roommate approximately the same age and in a different course unless they have made specific requests—**both students must request one another** on their acceptance forms. Roommate requests cannot be guaranteed to be filled and roommates are not reassigned. Siblings will not be placed on the same wing as we are able. In this program, students are escorted to all activities and are not unsupervised at any time. Residential Assistants are thoroughly screened and selected for their ability to relate to students of this age and participate in a rigorous pre-program training that includes other campus personnel who are present throughout the program to ensure student safety. Access to e-mail and phone calls will be available on a very limited basis in order to prevent intensified homesickness. Students may not bring personal computers, cell phones, or any transmitting devices. **Kids will do laundry only once** during this program due to time constraints. Students are required to live on campus and to participate in both the academic and residential life of the program. This may mean that students will miss sports practices or other extracurricular commitments. CBK is unable to accommodate competitions, performances, physical training regimens or lessons schedules. CBK operates as a closed campus and visitors are not allowed at any time during the program for student safety.

**Daily Schedule**

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The schedule for this program is extremely structured. We have a wide range of activities planned for afternoons and evenings for students to choose from as part of the community life of the program. Students are expected to adhere to the outlined schedule, **regardless of how it may differ from life at home, for the safety and well-being of all students**. A full residential weekend program and off-campus local group activity is part of this experience.

**Activity Periods**

During each activity period, residential staff offer a variety of options from which students choose to participate. From athletics to academics to fine arts, these opportunities give kids a chance to do something they love or try something new, and to take a well-deserved break from class. Down time is built into the schedule due to program intensity. The weekend is a required experience critical to socio-emotional growth. All activities are supervised and vary each day and each period. Some are held in or near the residence hall, while others take place at the NIRSA award-winning CU Boulder Recreational Center, such as dance, yoga, cross-training, jogging, basketball, indoor soccer, swimming, and limited visits as possible to the climbing wall. Finally, due to our proximity to the foothills, activities may also take place in the near vicinity at parks or on marked hiking paths.
The Luminary Project is a three-week residential program held on campus for mature 8th-12th graders. Students focus on one intensive course of study for six hours a day that is an equivalent to one full year of honors level high school content or one semester of college content. Many schools consider these courses for high school credit, although CBK cannot guarantee this transfer. As much as students think hard in the accelerated courses, they play hard in this deepened residential experience. Many students find that life-long friends are made during this program, and full required community weekend activities and trips are part of an energetic, structured residence life program. Our students describe this program as “transformational.”

**STUDENTS**: Students entering grades 8-12 in fall 2021 or ages 12-17.

**DATES**: Sunday, July 4—Saturday, July 24

**MATH/SCIENCE ADMISSION (M/S)**
- SAT-M 550
- ACT-M or S 22

**HUMANITIES ADMISSION (H)**
- SAT-R 28 or EBRW 550
- ACT-R or E 22

or portfolio application

**2021 Luminary Project Courses**
- Art As Activism: Power and Representation on Display (H)
- Pandemics and Pathologies: A Timely Intro to Epidemiology (M/S)
- Escaping Inadequate Equilibria: Changing Your Mind and When Not to Win (M/S)
- Searching for Self in Mass Media: Gender and Sexuality (H)
- Historiography of East Asia: Ethnocentrism and Privilege in Narrative (H)
- Kekulé’s Dream: Envisioning Organic Chemistry (M/S)
- Gold, Bronze, and Steel: Metallurgy for the Ages (H/S)

(denoted by (H)umanities, (M)ath, and/or (S)cience focus for eligibility)
Art As Activism: Power and Representation on Display
What is the difference between doing art For or As a community? What kind of art do we "need" to make? How has, and can, art change the world for the better? In this course, we'll discuss historical and modern movements/projects with the shared aim of having positive sociocultural impact. We'll find ways to identify and solve cultural, creative, and logistic problems as they relate to large-scale artistic endeavors, from sculptures and monuments to murals and installations. Examining the work of artists such as Christo, Anish Kapoor, Doris Salcedo, Antony Gormley, Tom Rollins + KOS, and Judy Baca, we will discover how public works encourage discussion, inspire passion, and incite social action and cultural discourse. Many times, that inquiry directly affects change that can help set public policy or result in broader sociopolitical change. Our workshop will culminate with each artist designing a piece specific to current issues about which we are passionate, creating a project proposal that includes consideration for solving issues of creative design, intended cultural impact, and practical implementation and installation. ($80 lab fee: studio materials and software)
Prerequisites: foundational art course required
Emaline Gotthoffer-duCharme has shown art in the Colorado Springs Gallery of Contemporary Art multiple times and studied fine arts for several years. She's won state-level snow carving competitions as well as assisting teaching courses in Illustration and Design at the University of Colorado, Colorado Springs.

Escaping Inadequate Equilibria: Changing Your Mind and When Not to Win
What changes are necessary to improve a system? How can you make effective choices? What does it mean to win? In this course we will scrutinize the mathematical underpinnings of inefficiency. To do that, we will explore computational and mathematical models, drawing from domains such as differential equations, game theory, and stochastic modelling, to analyze potential steady state behaviors of various systems. We'll use those models to identify when potential steady states exist, examine their stability, and determine what changes can be made to lead a system to a desirable solution. To understand which solutions are "best," we'll investigate the concept of utility and see when a win might actually be a loss (or when a "loss" might be a win). Along the way, we will build an intuitive understanding of Bayesian statistics, common fallacies, and rational thinking to understand how decision-making operates both psychologically and mechanically - only then, can we know what "winning" and "losing" really mean to us! ($80 lab fee: computer access, software, and login)
Prerequisites: Algebra 1 or equivalent; experience with programming is recommended (we will be using Python)
Ben Sattelberg received his B.S. and M.S. in Applied and Computational Mathematics from the Colorado School of Mines. He is currently pursuing a Ph.D. in Computer Science at Colorado State University, focusing on mathematical understanding of artificial neural network behavior. Ben has been involved with CBK for many years in a variety of positions, and loves coming back to the CBK family every summer.

Pandemics and Pathologies: A Timely Intro to Epidemiology
Two years ago, we could never have predicted the potential impact a pandemic would have on everyday life - or could we? Step into the shoes of an epidemiologist and learn what it takes to prevent the next pandemic pandemonium. Investigate how cells work in concert in homeostasis and in duress. Develop a treatment plan for a patient with specific conditions by researching pharmacological reports. Evaluate real analytical studies to identify and advocate for the most effective vaccine for your hospital to purchase. Design a rigorous epidemiological study, and develop a proposal to convince the board to approve your funding. Model frequency distributions and calculate appropriate measures of center, spread, and reproductive value to describe the presence and propagation of an infectious disease in a population. Pinpoint the source of an outbreak by conducting a field investigation. Apply all of your epidemiological expertise to develop a pandemic playbook with your task force by analyzing mistakes of the past to outline procedures and policies for combating future pandemics! ($40 lab fee)
Prerequisites: some experience with algebra is recommended
After earning her Bachelor's degree in Chemistry from Colorado School of Mines, Chelsea Silies initially worked as a chemist in Kansas City in the fields of Quality Assurance and R&D. While she loved working in the lab, Chelsea found her way into the classroom teaching 6th grade math after earning her Master's in Education from Park University. After missing the last 2 years to earn her newest title, "Mom," Chelsea is thrilled to be back with her CBK family this year!

Searching for Self in Mass Media: Gender and Sexuality
When you look for examples of human diversity in media texts, you’ll find they very rarely match the extent of true human diversity. Originally published as a comic strip, the criteria that became to be known as the “Bechdel Test” brought the issue of gender representation in film to public consciousness in the 1980’s. Since then, critics and scholars have developed other metrics to help us understand the ways things like gender and race appear in media, but it wasn’t until 2013 that GLAAD developed the Vito Russo test to help measure LGBTQ+ representation. But what is the importance of representation in the first place? Why should the worlds that media texts represent resemble our own world? The ways media creators choose to represent human identities and social issues influences the ways society knows and understands those topics. In this course, we will explore the way gender and sexuality as well as intersectional identities are represented in media through history and today, and then we will be able to critically evaluate the kinds of representation that might either empower or do harm to the diverse human society that we inhabit.

Jess is an English Language Development teacher at a social justice high school in Denver. She is also a longtime CBK family member, and has been a student, a TA, an RA, an instructor, and a co-instructor so far in her time at CBK. She completed her B.A. at University of Colorado Boulder in History and Spanish Literature and received her M.A. from University of Chicago in Social Science, focusing on queer history and literature in Cuba. Beyond her passions for teaching, learning, and social justice, Jess enjoys pottery, cats, and reading and writing science fiction.
Historiography of East Asia: Ethnocentrism and Privilege in Narrative
Korea, Tibet, Vietnam, China, and Japan are all unique areas with distinct art and cultural heritages. But are there more connections between the histories of these countries and regions than meets the eye? Who gets to draw the boundaries between these cultures, and why are certain stories told more than others? These are some of the questions that hang over the field of East Asian regional studies and history writing in general, and in this class, we’ll be examining historiography to better understand how the narratives of history can move beyond dates and places to form stories that reveal as much about their writers as their subjects. By exploring and comparing primary sources from history, and seeing the evolution of the portrayal of certain events, students will discover the important process of converting historical data into stories and analyzing the trends that these stories can reveal, which continue through to the modern world. We’ll also explore the social dynamics that have prevented people from telling their own stories, so we can help better elevate those voices.

Jasper Howald is currently finishing his degree in East Asian Studies with a focus on Japanese studies at Columbia University. He spends his free time practicing karate and martial arts from around the world. He also loves to turn the untold history of the pre-modern world into settings for stories and tabletop games. He is incredibly excited to return to the CBK family and help create the experiences that keep him coming back every summer.

Kekulé’s Dream: Envisioning Organic Chem
“Let us learn to dream...then, perhaps we shall find the truth...But let us beware of publishing our dreams till they have been tested by waking understanding.” This quote is attributed to August Kekulé, who is credited with the first description of the ring structure of benzene, one of the most notable carbon-based molecules in organic chemistry. This course will be an integrated introduction to both electron-valence theory and organic chemistry. We will place an emphasis on chemical bonding and reactivities of the major classes of molecules such as aldehydes, alcohols, aromatics, carboxylic acids, and ketones. We will study the IUPAC standards of chemical nomenclature for major compounds like alkanes, alkenes, and alkynes. Along the way, we’ll explore the concepts of R and S stereoisomers, diastereomers and enantiomers, spectroscopic tools that we use to determine structures, general reaction categories, and other special topics in the chemistry of plant and animal life. From food science to drug discovery, organic chemistry permeates our lives, as British chemist Professor H.E. Armstrong is quoted as saying, “The element carbon stands out as the central luminary in the great mystery of life.”

Prerequisites: Algebra 1 or equivalent
Dan Reddy completed his B.S. in Chemistry and a B.S. in Clinical Health from Liberty University and an M.S. in Organic Chemistry from Purdue University, studying amine-borane chemistry in the H.C. Brown Center for Borane Research. At Purdue, he received a first-year teaching award. He has been a TA with Johns Hopkins CTY and DukeTIP programs and is looking forward to a summer with CBK. He has also interned with the Naval Nuclear Laboratory and Merck in their analytical departments. Dan is planning to start his PhD this fall at the University of Cambridge working with metal-organic compounds.

Gold, Bronze, and Steel: Metallurgy for the Ages
Metallurgy has existed in one form or another for over 8,000 years, and has had a heavy influence on the inexorable march of civilization. Metallurgy is the study of metallic elements, compounds, and mixtures of metallic (and sometimes nonmetallic) elements, called alloys. In this course, you will dive into our storied past with metals and perform experiments to determine properties and utilization of metals and alloys. You will be working with metals most common in our human history, such as aluminum, copper, and iron, and producing a copper alloy you will then cast in a mold you design. From Aviation to Fabrication, from Medicine to Welding - the world relies upon metallurgy in ways you might not expect. Topics covered will include processes such as alloying, recrystallization, deformation, phase changes, and heat treatment. Concepts covered will include impurities, effects of temperature, phase diagrams, crystalline structures, and work-hardening. Additionally, we will examine our relationship with metallurgy over the course of human history. No experience required, but creative ideas welcomed!

($60 lab fee)
Christopher Creason is currently studying at Metropolitan State University, Denver, to be a high school science teacher. He previously earned a degree in Applied Sciences for Welding Engineering and spent three years working as a fabricator and pressure vessel welder. Christopher has a deep passion for science, and he also loves being a Maker, reading science fiction and fantasy, and playing video games.
**Student Housing and Supervision**

Students will be housed in a smaller traditional residence hall, which is locked at all times to outsiders. We are the only program in this building during the summer. Students live in wings of no more than 14 participants per Residential Assistant. Students live in nicely-sized rooms with two XL twin beds. The shared floor bathroom offers private showers. Students will be assigned a roommate approximately the same age and in a different course unless they have made specific requests—both students must request one another on their acceptance forms. Roommate requests cannot be guaranteed to be filled and roommates are not reassigned. Siblings will not be placed on the same wing as we are able. In this program, students have more autonomy, but are still supervised. Residential Assistants are thoroughly screened and selected for their ability to relate to students of this age and participate in a rigorous pre-program training that includes other campus personnel who are present throughout the program to ensure student safety. Access to e-mail and phone calls will be available on a very limited basis in order to prevent intensified homesickness. Students may not bring personal computers, cell phones, or any transmitting devices. **Laundry is scheduled only twice** during this program. Students are required to live on campus and to participate in both the academic and residential life of the program. This may mean that students will miss sports practices or other extracurricular commitments at home. CBK is unable to accommodate competitions, performances, physical training regimens or lessons schedules. CBK operates as a closed campus and visitors are not allowed at any time during the program for student safety. Weekends are a required critical part of the socio-emotional development of our community.

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The schedule for this program is not as structured as younger students’ programs. We have a wide range of activities planned for afternoons and evenings for students to choose from as part of the community life of the program. However, in this program, students will have more unstructured time to schedule as they choose. **Students are expected to adhere to the outlined schedule, regardless of how it may differ from life at home, for the safety and well-being of all students. Students are still held accountable for their whereabouts and personal responsibility at all times.** Two full residential weekend programs and an off-campus trip are included.

**Activity Periods**

During each activity period, residential staff offer a variety of options from which students choose to participate. From athletics to academics to fine arts, kids have a chance to do something they love or try something new and to take a well-deserved class break. Activities are supervised and vary each day and each period. Due to the intensity of Luminary Project, down time is built in to the schedule. Activities occur across campus, including at the NIRSA award-winning CU Boulder Recreational Center, such as dance, yoga, cross-training, jogging, basketball, indoor soccer, swimming, and limited visits to the climbing wall. Finally, due to our proximity to the foothills, activities may also take place in the near vicinity at parks or on marked hiking paths into the mountains.
Student Conduct

CBK Summer Programs maintain high expectations for student conduct. As residential programs, students live and learn together in collaborative, supportive, and safe environments both in and out of class. Students from all walks of life attend these programs, and the CBK Programs Honor Code must be followed, regardless of higher levels of independence that students may be accustomed to at home in order to ensure a safe experience for everyone. All participants are expected to treat students across programs, instructors and TAs, residential staff, program staff, and university employees and students with respect as representatives of CBK programs. Behavioral expectations and program rules are sent to families with acceptance packets. Applicants must sign the Honor Code after fully reviewing the form. Specific expectations are outlined for each program in the Welcome Packet, which is again reviewed during orientation. Bullying, sexual harassment, teasing of a sexual nature or regarding sexuality or gender, curfew abuses or hall access violations, vandalism, physical or emotional violence including excessive horseplay or threats to self, and use of any controlled substances are grounds for immediate dismissal from the program without refund. We pride ourselves on providing a safe environment, both physically and emotionally, in which our students thrive and to which they can feel comfortable returning. As a result, the majority of our students do come back to their second “family” each summer. Our behavioral expectations are in place to protect our participants and to ensure an enjoyable stay on campus. These are zero tolerance policies due to program length and intensity. Should a student be dismissed from the program, the Executive Director of CBK will contact the student’s family. Families are required to remove the child from campus or make arrangements to remove the child from campus within 6 hours. Parents must make immediate travel arrangements at their own expense. Program fees will not be refunded. If you have any questions, please contact CBK immediately.

Health Services

Although we may be able to schedule a visit to a local health clinic for acute diagnoses, most injuries and illnesses require transport to the emergency room. Personal health insurance is required for attendance at any program and the Medical Release Form in the acceptance packet must be completed. All medications, including all non-prescriptions such as pain relievers or vitamin supplements must be stored in the Residential Director’s office. The only exceptions to this policy will be for emergency life-saving medications such as epinephrine devices or insulin. CBK staff members will not administer medications (they will only be monitored), except in the event of a life-saving emergency. Transportation costs to clinics and/or hospitals are the responsibility of the family—CBK attempts to use the least expensive transportation mode when possible. Campus health service is not available. Mental health crises may require transportation to and evaluation by hospital staff at the discretion of CBK.
Homework and Attendance

Because of the intensity of the academic portion of the program, and because we stress the importance of residential activities, extensive homework will not be assigned to students in the summer programs. Students in GLOW and Luminary may be assigned short readings or practice problems for the evening, but the expectation is that students fully participate in playing hard after class as much as thinking hard during class. Both of the older students’ programs also include an evening class period during which the majority of extended work should be completed. Students unable to keep up with the course pace during the day should speak with their instructors immediately so that we can help them to be successful. Participation is required for the duration of the program. Non-participation may result in dismissal. Because sharing activities and responsibilities with classmates is such an important part of the experience, families should not plan to visit or pick up their child for other activities during the program. For the security of your children, such arrangements may only be considered at least two weeks in advance of the program or in an emergency with the Executive Director. We hope that families will encourage the self-confidence that comes with independence and the self-esteem that comes from interacting with peers for the entirety of the program.

Student Evaluation and Credit Equivalency

Instructors use a variety of assessment techniques, including observation, project-based evaluation, rubrics, and pre-assessments throughout the programs. Skills are assessed, but there are no grades or point scales for SHINE or GLOW Programs. Luminary Project participants will be assigned a grade for the purpose of transfer. Due to the rigor and acceleration of courses in comparison to traditional environments, no grade lower than a B– will be assigned. A grade of P indicates that the student participated but will not be eligible for credit. Students should talk to their guidance counselors in advance of the program to determine whether a course will be considered for equivalency. On the final Saturday of each program, students and their families participate in a mandatory exit interview with the instructor to discuss their achievements in class and final evaluation. This interview is followed by an essential closing ceremony at which students are recognized for their accomplishments and participation. Plan to attend.

Instructors

Summer Program courses are typically taught by outstanding secondary teachers, college and university faculty/instructors, content experts, and advanced graduate students. Instructors participate in a thorough application and interview process, and are selected based on their knowledge of the subject area as well as their ability to work with students. We hold our instructors to the expectation that they will provide a challenging, inquiry-driven, and enjoyable educational experience for all students. Brief bios are available by program.
Tuition and Fees

CBK Summer Programs tuition is comparable to other programs offering the same type of residential experience. Hourly rates reduce to $16/hour even without including the cost of overnight and weekend supervision. Tuition covers campus room and board and facilities charges (the majority of tuition goes to CU Boulder), staff salaries/housing, planning and evaluation for the courses, publications, books, materials, program shirt, and residential events and trips. Additional student expenses not covered in tuition include a lab fee for materials-based courses, and may include souvenirs from the campus bookstore, snacks, laundry, or other optional activities.

Payments must be made online.
Lab fees and shuttle fees are paid upon ACCEPTANCE. Discounts are applied at initial application only.

Application Fee
All applicants must submit a nonrefundable $50 application fee. This fee is not applied to program tuition. Applications not including this fee (even when seeking aid) will be canceled.

Regular COMPLETED application deadline is MARCH 31.

Tuition Deposit
A 50% tuition deposit is due with the application before March 31. This deposit is applied directly toward tuition and is rarely refunded. If applying for financial aid, the tuition deposit is waived and any monies remaining due following the award must be paid by May 1. All applications after March 31 must include full payment.

Refund Policy
The $50 application fee will not be refunded for any reason.

1) a student is not accepted to the program
2) a student cannot be placed in any of the three listed course choices and declines a 4th choice phone offer
3) a student withdraws in writing before 4pm, May 1st (a 10% fee is assessed with all withdrawals)
4) a family applies for financial aid and does not receive a sufficient award
Students who must withdraw during a program due to hospitalization or the death of a parent, guardian, or sibling will receive a prorated refund not to exceed 50% of program fees paid, less the deposit and a 10% fee. If a student withdraws for any other reason after the first day of the program has started, or if a student is dismissed from the program, no monies will be refunded. Refunds take 4-6 weeks to process.

Tuition Pricing
Please note that applications are queued by a date and time stamp for course placement. This stamp does not occur until the application is COMPLETE, meaning application fee, 50% tuition, submitted application, and both letters of recommendation have been submitted. Students with an outstanding balance at deadline may have their applications canceled. Total tuition for each program is:

Tuition Only:  SHINE  $1980   GLOW  $3580   Luminary  $4580   PLUS app, late, lab, shuttle fees

Residential Damage Fees
CBK will maintain a $150 security deposit for any incidental fees for each student attending programs. Damage fees will be invoiced to families within 10 days following each program. Fees are heavily documented and indisputable. Damages beyond $300 will be reported as vandalism to Campus Security for investigation and collections. Most common sample fees include late or lost library book fees, lost or missing Buff Card fees, double-paid meals due to forgotten Buff Cards, medications following a doctor visit, or lockouts. Any remaining security deposit will be refunded 2-4 weeks following each program.

Late Fees and Deadlines
Late applications will be accepted with an additional $100 fee if RECEIVED no later than:
GLOW MAY 1; Luminary MAY 15; SHINE JUNE 1. Late applicants cannot be considered for financial aid. FULL PAYMENT of all tuition and fees is due WITH late application or an additional $100 fee will apply.
Airport Shuttle Service
Service to/from DIA can be arranged by CBK for unaccompanied student arrivals and departures at $90 roundtrip or $45 one way and are paid at acceptance. If someone is traveling with your student, please make your own arrangements using SuperShuttle. Students must plan to adhere to program arrival and departure schedules – additional housing and supervision CANNOT be provided. Students electing this service will be met at the gate.

Flight arrangements must be made in the following windows: Arrivals (8:30am-11:00am); Departures (7:00am-9:30am). CBK MUST be notified of any flight for a student to/from the program. A student MAY NOT travel unaccompanied and make separate arrangements solo via any form of ground transportation. Please contact CBK for more information on this service or for gate clearance identifications three days prior to arrival. Arrivals or departures outside of these times cannot be supervised or met by CBK staff, as they are required elsewhere.

Financial Aid and Merit Scholarships
CBK offers limited financial aid awards to applicants demonstrating significant economic need. This aid ranges from partial tuition to smaller awards. Awards are determined by committee using a scale based on financial need and family circumstances. It is also our recommendation that you seek out sources of support in your community. Please note that the average annual income of the last several years’ award groups was $32,000. To be considered, please complete the Financial Aid and Merit Scholarship Application, most recent IRS tax return form and W-2 forms, and Statement of Need detailing extenuating circumstances during the current year.

A limited number of competitive merit scholarships are also available. Awards typically range from $50 to $300. To be considered, please complete the Financial Aid and/or Merit Scholarship Application.

COMPLETED APPLICATION DEADLINE for consideration is March 15th—NO EXCEPTIONS.

All award notifications will occur by April 12th. Additional expenses, such as the application fee and damage fees, lab fees, purchases on weekend trips, snacks, or other student choices are not covered by CBK.

Financial Aid applications must still include the $50 Application Fee to be processed.

CBK is able to set up payment plans upon request but all payments must be received before program start.

Please note that applications are queued by a date and time stamp for course placement. This stamp does not occur until the application is COMPLETE, meaning application fee, 50% tuition, submitted application, and both letters of recommendation have been submitted. Classes do fill on the very first day of registration. APPLY EARLY
Application Process and Policies

Summer Programs Applications are evaluated as they are received on a rolling basis. **Apply early since classes fill very quickly.** Course choice equity is determined by time stamp for priority and time stamp will occur once the application is fully complete (application submitted, tuition deposit/application fee paid, both letters of recommendation received). If a student’s first choice class is full, he or she will be put on the waiting list, and then assigned to the second choice or third choice. Waitlisted students sometimes get into their first choices. It is important that students list only those courses in which they would accept enrollment. If all class choices listed on the application are full, a phone call will be placed to the applicant to discuss options. **APPLY EARLY**

**DO NOT BEGIN YOUR ONLINE APPLICATION UNTIL YOU HAVE ALL REQUIRED PIECES UPLOADED AS FILES**

**REGULAR COMPLETED APPLICATION DEADLINE IS MARCH 31**

**SUMMER ACCOUNT ACCESS**  
Every family will need to create a new summer account for security. Application (including portfolio documents), payments, and acceptance forms will all be submitted through your summer account—letters of recommendation for new students may be submitted online early! Lab and shuttle fees should be paid AT ACCEPTANCE, not application—paying lab fees early does not guarantee a spot in the course, and those fees will not be refunded. Acceptance forms must be completed no later than **MAY 1st**, or a $100 late fee for processing will be assessed. These will show in your online account.

**WELCOME EMAILS** will be sent as classes fill beginning in late February. Please do not call CBK to check on course assignment status. This email will include class assignment and critical opening day information, maps, and directions. **Roommate assignments** will go out by email approximately one week prior to your arrival.

**APPLICATION CHECKLIST**—have in hand before you apply

**RETURNING STUDENT Application**
- 3 course choices, application fee, and 50% tuition deposit
- Students aging up to the next program may be asked for additional score information or an interview

**OR FOR FIRST-TIME APPLICANTS:**
- $50 Nonrefundable Application Fee included with your 50% deposit total online (required of ALL applicants)
- 50% Tuition Deposit (waived if applying for Financial Aid)
- 3 course choices and student essay ready to be uploaded as PDF, JPG, GIF, or PNG
- Copy of Talent Search score report (SAT, ACT, or PSAT 8/9) from WATS or any other Talent Search
  - OR Portfolio Admission Application responses and all supporting documents
- 2 recommendations completed by education professionals who can speak to program fit for your student submitted on the CBK Summer Recommendations site. These may be submitted in advance.
- Financial Aid/Merit Application and supporting documents if applying [DEADLINE by March 15]

**Portfolio Admission Process**

CBK offers alternate application by portfolio for students who do not have the necessary test scores through a Talent Search. All required materials for the Portfolio Admission Application must be uploaded with the full Summer Programs Application before portfolio admission candidates will be considered. Portfolio applications will be included in the same course placement process according to date/time stamp of completed submission. **See online requirements for materials submission.** In this way, the portfolio review process, which takes a bit longer than the score review process, will not affect admission to specific courses that may fill quickly. **Early application is highly recommended as courses do fill in one day.** Students are encouraged to participate in the Western Academic Talent Search to achieve qualifying scores for future summers.

**Special Incentives**

**EARLY BIRD PROMOTION** any application fully complete by Feb 15th or prior will be issued a discount of $50.

**CU BOULDER FACULTY AND STAFF** receive one additional $50 discount per application (shows on final balance).

**MULTIPLE KIDS/MULTIPLE PROGRAMS** members of the same family for summer 2021 receive one $100 discount per additional application after the first (shows on final balance)