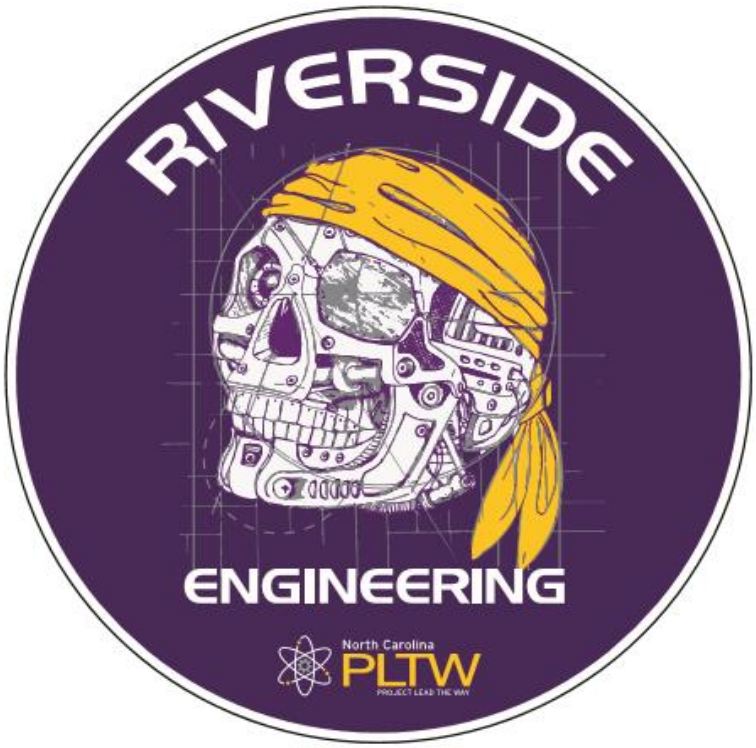
RIVERSIDE HIGH SCHOOL

ENGINEERING PATHWAY

HANDBOOK

2023 - 2024



Riverside High School

3218 Rose of Sharon Road

Durham, NC 27712

(919) 560-3965

www.repac-riverside.org

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I. Welcome

Dear Parents and Students:

Welcome to the Riverside High School Engineering program.

As you are aware, our offering is more than a rigorous four-class academic curriculum. It has evolved into what we believe is one of the best college preparatory courses of study in Durham Public Schools, with many “extras” that lead to an enriching high school experience. Positioned in a school like Riverside, with its emphasis on academics (24 AP courses) and full access to all the arts and athletics choices available elsewhere, we deliver on that promise.

Thanks in large part to the efforts of the Riverside Engineering Parent Action Council (REPAC), we have developed this handbook as a guide to enhance your understanding of the various features the program has to offer. The amount of information can be daunting at first glance. So to help you navigate around, the aim of this handbook is to introduce you to the curriculum, program highlights, history, faculty, calendar, and REPAC. It is our hope that you will find most of the answers to your questions about the program, as well as links to resources that are time sensitive and subject to change.

Established in 2003, this program has come a long way over the years, and we still have plenty of room to improve. From acquiring new equipment to nurturing the development of a professional and alumni network, there is much work yet to do.

As a parent, you will be an integral part of an important volunteer effort to support this growth, as well as the extracurricular events arranged by the staff. We are counting on you to join in the fun and satisfaction of watching your child grow in this unique blending of scholastic endeavor and workplace skills development that the professional experience of our staff provides.

Just like the most successful companies who have survived only through continuous improvement, Riverside Engineering has a culture where we actively seek feedback from all stakeholders. From the end-of-course surveys we administer to students to our continuous interface with parents, our goal is to get better, and it is only through your candid, constructive feedback that we can do so.

So welcome to the team. We hope you enjoy the ride.

Tim Velegol

Engineering Program Director

II. RHS Engineering Faculty

Engineering Program Director

Mr. Tim Velegol tim_velegol@dpsnc.net 919-560-3965 ext. 65170

Mr. Velegol earned a BS in Mechanical Engineering from Ohio State in 1983, a Masters in Nuclear Engineering while working for General Electric, and a Masters in International Business from the University of South Carolina in 1991. He is a certified Nuclear Plant Operations engineer, and has worked for Barnes and Noble and as a NASA subcontractor before entering teaching in 2006. He is certified to teach PLTW Digital Electronics, PLTW Principles of Engineering, and PLTW Computer Science Principles. He is the director for the Riverside Engineering Program and previously served as the faculty sponsor for Riverside's robotics team. Mr. Velegol earned the 2021-2022 PLTW Outstanding Administrator Award and was recognized as the Triangle Education Superhero in June of 2023.

Staff

Ms. Jackie Brown jacqueline_brown@dpsnc.net 919-560-3965 ext. 65168

Ms. Brown earned her BSE in Mechanical Engineering from Duke University's Pratt School of Engineering and an MBA in Finance from Duke University's Fuqua School of Business. Ms. Brown is a 2020- 21 Kenan Fellow of the Kenan Fellows Program for Teacher Leadership and a 2021- 22 District Finalists for CTE Teacher of the Year for Durham Public School. Ms. Brown has previously organized and led FIRST LEGO League Teams and is excited about working with Riverside's Technology Student Association (TSA). She teaches Introduction to Engineering Design.

Ms. Sheena Brooks sheena_brooks@dpsnc.net 919-560-3965 ext. 65330

Ms. Brooks is the Career Development Coordinator for Riverside High School. She earned her BS in Business and Marketing Education from East Carolina University. She worked as a business technology teacher for twelve years before assuming the position as Career Development Coordinator with Riverside's Career & Technical Education Department in 2008. Ms. Brooks is passionate about empowering students to be successful citizens, workers and leaders.

Mr. Mike Dibble mike_dibble@dpsnc.net 919-560-3965 ext. 65172

Mike Dibble received a BS in Computer Science from Shawnee State University. He started his teaching career at Riverside as a long-term sub in March 2023. He teaches Computer Science Applications, Computer Science Principles, and Computer Science

Essentials. He looks forward to working with all students interested in learning computer science and hopes to pilot PLTW's Game Design course in the future!

Mr. William Oakley william_oakley@dpsnc.net 919-560-3965 ext. 65171

Mr. Oakley received a Bachelor of Science in Mathematics from the University of Texas at Austin. He also earned his certification in Math, Science and Engineering at UT, and eventually brought those credentials here to North Carolina after teaching three years in Texas. He loves video games, D&D and his dog, Zeus. He teaches Introduction to Engineering Design, Principles of Engineering and Engineering Essentials.

Mr. Ryan Patridge ryan_patridge@dpsnc.net 919-560-3965 ext. 65162

Mr. Patridge graduated from Cornell University's College of Engineering with a BS in Computer Science. He worked for Motorola and Computer Sciences Corporation for 15+ years as an IT Systems Engineer and System Administrator. He served as a staff engineer and manager of "The Pod" first year design makerspace at Duke University, and currently as an officer at SplatSpace (a non-profit makerspace in Durham). He participated in the Formula SAE student design competition at Cornell, mentored FIRST Team 111 at Motorola, and is an Eagle Scout. He teaches three PLTW courses: Computer Integrated Manufacturing, Computer Science Essentials, and Cybersecurity.

Mr. Seth Stallings seth_stallings@dpsnc.net 919-560-3965 ext. 65169

Mr. Stallings holds a Bachelor of Applied Science from Campbell University and a Masters in Technical Education from North Carolina State University. As a Professional Land Surveyor in North Carolina, he owned a surveying and subdivision design company prior to joining Riverside's faculty in 2012. Mr. Stallings has also worked within the fields of forestry and natural resource conservation. He teaches three PLTW courses: Digital Electronics, Civil Engineering and Architecture, and Computer Integrated Manufacturing. He has also taught Technology Engineering and Design, Career Management, and Honors Pre-Calculus!

Adam Tokonitz adam_tokonitz@dpsnc.net 919-560-3965 ext. 65173

Mr. Tokonitz is a graduate of North Carolina State University with a BS in Technology, Engineering, and Design Education. He loves working on his cars and is also an alumni of Richlands' PLTW Engineering program. He has experience with FIRST and Vex Robotics, TSA, and SkillsUSA. He teaches Introduction to Engineering Design and Digital Electronics.

III. Program Overview

About Project Lead the Way® (PLTW)

Project Lead the Way® (PLTW) is the leading provider of rigorous and innovative STEM (science, technology, engineering and math) education curricular programs used in schools throughout the nation. As a 501(c)(3) charitable organization, PLTW exists to prepare students for the global economy through its world-class curriculum, high-quality professional development, and an engaged network of educators, students, universities and professionals. PLTW's comprehensive curriculum has been collaboratively designed by PLTW teachers, university educators, engineering and biomedical professionals, and school administrators to promote critical thinking, creativity, innovation and real-world problem solving skills in students. The hands-on, project-based program engages students on multiple levels, exposes them to areas of study that they typically do not pursue, and provides them with a foundation and proven path to college and career success. Currently, more than 5,000 schools in all 50 states and the District of Columbia offer PLTW courses to their students. For more information, visit www.pltw.org.

Riverside Engineering is certified by the national Project Lead the Way® (PLTW) Initiative. The Riverside program became accredited by PLTW in 2008.

Through the Riverside Engineering courses, students may be eligible for up to nine 3-hour college credits based on their performance in the classes.

The Riverside Engineering program also fulfills the Durham Public Schools requirement for students to have a “concentration” in high school. Students are not required to be enrolled in the Engineering program in order to take the courses, provided the prerequisite requirements have been met. However, preferential placement in classes is given to those enrolled in the program. For those not in the Engineering program, the classes count toward math requirements.

In 2022 - 2023 Riverside was identified as one of 7 high schools in the state of North Carolina to be designated as a “PLTW Distinguished High School,” and one of only 3 schools in North Carolina to qualify for six consecutive years.

IV. PLTW Course Specifics and Recommendations

Three foundation courses are required for all engineering students. Typically, students take one per year for the 9th through 11th grade years. A fourth course, chosen from the specialty courses, is required to complete the PLTW program, as well as to satisfy the DPS requirement for a 4-course "concentration". With faculty approval, and as scheduling allows, students may choose to take as many additional engineering courses as are offered.

Foundation Courses:

Introduction to Engineering Design (IED)**:** The major focus of this course is to expose students to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. The course assumes no previous knowledge, but students should be concurrently enrolled in college preparatory mathematics and science. Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3-D modeling software and use an engineering notebook to document their work. This course is generally taken in the 9th grade.

Principles of Engineering (POE): POE is a rigorous survey course of engineering. Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation. To be successful in POE, students should be concurrently enrolled in college preparatory mathematics and science. This course is generally taken in the 10th grade.

Digital Electronics™ (DE): From smartphones to appliances, digital circuits, which are used to process and control digital signals, are all around us. This course provides a foundation for students who are interested in electrical engineering, electronics, or circuit design. Students study topics such as combinational and sequential logic and are exposed to circuit design tools used in industry, including logic gates, integrated circuits, and programmable logic devices. This course is appropriate for 10th or 11th grade students. Other than their concurrent enrollment in college preparatory mathematics and science courses, this course assumes no previous knowledge.

Specialty Courses:

Aerospace Engineering (AE): This course propels students' learning in the fundamentals of atmospheric and space flight. As they explore the physics of flight, students bring the concepts to life by designing an airfoil, propulsion system, and rockets. They learn basic orbital mechanics using industry-standard software. They also explore robot systems through projects such as remotely operated vehicles. The course is appropriate for 11th and 12th grade students interested in Aerospace. It is recommended that students are concurrently enrolled in college preparatory mathematics and science courses and have successfully completed of POE.

Civil Engineering and Architecture (CEA): In CEA, students learn important aspects of building and site design and development. They apply math, science, and standard engineering practices to design both residential and commercial projects and document their work using 3-D architectural design software. CEA is appropriate for 11th or 12th grade students, and while completing POE is a pre-requisite, this course assumes no previous knowledge.

Computer Integrated Manufacturing (CIM): Manufactured items are part of everyday life, yet most students have not been introduced to the high-tech, innovative nature of modern manufacturing. This course illuminates the opportunities related to understanding manufacturing. At the same time, it teaches students about manufacturing processes, product design, robotics, and automation. Students will apply knowledge gained throughout the course in a final open-ended problem to build a factory system. CIM is a high school level course that is appropriate for 10th, 11th, or 12th grade students. It is recommended that students are concurrently enrolled in grade level mathematics and science courses and have successfully completed IED.

Computer Science Essentials (CSE): CSE is an excellent entry point for new high school computer science (CS) learners. All students will experience the major topics, big ideas, and computational thinking practices used by computing professionals to solve problems and create value for others, whether it be through app development, web design, or connecting computing with the physical world. CSE introduces students to coding fundamentals through an approachable, block-based programming language where they will have early success in creating usable apps. As students sharpen their computational thinking skills, they will transition to programming environments that reinforce coding fundamentals by displaying block programming and text-based programming side-by-side. Finally, students will learn the power of text-based programming as they are introduced to the Python® programming language.

Computer Science Principles (CSP): Using Python® as a primary tool, students learn the fundamentals of coding, data processing, data security, and task automation, while learning to contribute to an inclusive, safe, and ethical computing culture. The course promotes computational thinking and coding fundamentals and introduces computational tools that foster creativity. CSP students develop programming expertise and explore the workings of the Internet. Projects and problems include app development, visualization of data, cybersecurity, and simulation. All components of this this course are aligned to the AP Curriculum Framework standards and the AP CSP assessment. Students completing the course will be well-prepared for a first course in Java or other object-oriented language. Students should be sophomores in good standing. (This course is called AP Computer Science Principles in the DPS course catalog.)

Computer Science Applications (CSA): Introduces students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language. (This course is called AP Computer Science in the DPS course catalog.)

Cybersecurity (SEC): SEC engages students in interdisciplinary real-world challenges that help them develop the computational thinking and computer science knowledge and skills to be successful in any career path they take. This course exposes students to the ever-growing and far-reaching field of cybersecurity and allows students to explore concepts such as secure information technology systems, protection against cyber threats, and the ethical impact of cybersecurity situations. Students in SEC establish an ethical code of conduct while learning to defend data in today's complex cyberworld.

Course Recommendations:

Riverside offers four computer science courses. While none of them are graduation requirements, they are highly recommended electives due to the fact that so much of engineering and virtually all other STEM fields here in the 21st century require at least a cursory knowledge of computer science.

The North Carolina High School graduation requirements are inadequate for admission to UNC system schools. UNC System schools require two years of the same world language for admission. None are required for high school graduation. In addition, graduation and UNC-system minimum course requirements only require three years of science. Depending on the college and program of study selected, more may be required. Students should carefully review the websites of colleges in which they are interested – engineering programs occasionally have requirements beyond the minimum course requirements needed to earn a North Carolina high school diploma.

V. Grading for PLTW Classes and College Credit

Engineering and Computer Science courses, with the exception of CSE and SEC, are graded similarly to AP courses with 1 extra quality point added for GPA computation. This weighting reflects the rigorous nature of the classes.

The final exams for the Riverside Engineering classes are nationally normed exams produced by the Project Lead the Way® program. As with AP courses, college credit may be earned by achieving a cut score. The student must also earn an 85% or higher grade in the course. After the final exam, students are notified of their eligibility for college credit.

Credit for IED, POE, DE, CIM and CEA is given through Rochester Institute of Technology (RIT). RIT charges $225 for the college credit. Students will receive a transcript from RIT reflecting the grade earned (for RIT). Each course counts for 3 semester hours of college credit. These courses will generally be considered transfer credits and may count toward graduation. Generally, universities do not consider the grades from transfer courses in computing the student's cumulative college GPA.

Rochester Institute of Technology returns $20 from the $225 college credit fee to Riverside High School as a grant. This money is used at the discretion of the Program Director for the continued success of the Engineering program. Application for college credit must be made no later than a November deadline of the ensuing academic year (specific date varies from year to year – see calendar at end of handbook).

At the end of each semester, the Program Director will notify the students who qualify for college credit for any given PLTW course and will send instructions on how to apply.

VI. PLTW® Program Features

The Engineering Faculty supplements the dynamic curriculum with several other elements that comprise the engineering experience at Riverside:

Junior and Senior Year Interviews: The Program Director and Career Development Coordinator conduct one-on-one interviews with all Juniors and Seniors in the program to map out post-high school plans. They discuss the college application process, financial aid, summer jobs, and internship searches.

Faculty Recommendations: The engineering faculty is happy to help students with letters of recommendations for college applications and scholarship programs. However, they **request a 30-day notice** for preparing these recommendations.

Speaker Days: Twice a year, up to 6 speakers from industry, education and government address students on the careers and rewards associated with STEM degrees. All students in the program are invited to attend these semi-annual events.

North Carolina State University Visit: Juniors participating in the Engineering program are invited to attend a day-long field trip to visit both engineering campuses at NCSU each year. They learn details of university life and can tour the Engineering Department of their choice. NCSU is the flagship program for Engineering in the UNC system.

Program-wide and Class-focused Field Trips: The Engineering faculty work to arrange curriculum appropriate field trips for each engineering course during the school year. At the end of the school year, a fun field trip to a STEM related event is offered for all interested students.

Assemblies: Assemblies are held to familiarize students with programs and expectations.

Social Events: The Riverside Engineering Parent Action Council (REPAC) sponsors a "Welcome (Back) Event" to introduce new freshman families to the faculty and returning families in the program. REPAC also sponsors a Senior Celebration for those graduating from the program.

Spirit Wear: REPAC sponsors sales of Riverside Engineering T-Shirts, Sweatshirts, and other gear.

*****Please refer to the Event Calendar starting on Page 24*****

VII. PLTW® Enrichment Opportunities

Community Service: Community service activities are organized for engineering students to help promote a sense of responsibility to the community.

Student Contests: The Engineering Faculty will coordinate and/or make the students aware of contest opportunities such as Girls Go Cyberstart, Ready, Set, App, and National Flight Academy summer program (through Junior Achievement and Delta).

Tallo: The Engineering Faculty strongly encourages students to register themselves on a professional networking website called Tallo. Posting academic and related information can bring students exposure to internships, college opportunities, scholarship applications and availability through RedKite. It's also a great web-enabled place for developing their resumes.

Xello: Riverside Engineering makes extensive use of an online web app, which is supported by the DPS Career and Technical Education central office, known as Xello - a revolutionary future-readiness program. Built with thousands of hours of research with educators, Xello puts students at the heart of their journey of self-discovery. By delivering an engaging student experience, Xello helps students achieve real results in multiples stages of their career and college planning.

FIRST Robotics: The FIRST Robotics Club at the School of Science and Math is open to all Engineering students. In this club, students design, build, and enter competitions with robots. Students not only learn mechanical and design skills, but they also become familiar with programming software. If you are interested in joining, you can find more information on the website for the Zebracorns (www.team900.org).

Local Enrichment Programs: There are many enrichment programs offered through local universities, businesses and organizations. As these opportunities arise, the Engineering Faculty will share details and registration information with the appropriate student cohorts. Here is a list of local enrichment programs recently attended by RHS engineering students:

- District C
- KPMG Future Leaders Program
- Wake Forest Perry Initiative
- DPS Scholars at Work program
- Duke's STAR program
- Chick Tech
- UNC's SPLASH
- UNC Project Summit
- UNC WINSPIRE
- Duke REP (Research in Engineering Program)
- Duke ECHO (electrical/computer engineering) program
- UNC's Young Innovators Program summer internship
- Bank of America Student Leaders Program
- Duke ESSP (Environmental Summer Science Program)
- NC State's summer design camps
- Perkins and Will Architecture Explorers
- TEDx at NCSSM

VIII. Engineering Department Recognitions/Awards

The Engineering faculty annually presents awards to the outstanding senior Engineering and Computer Science students. A perpetual plaque of past winners is on display in the trophy case in the Riverside High School lobby. The awards for the VEX Robotics Championship, Verizon App Challenges and other Engineering student achievements are also displayed in the Lobby.

The National Technical Honor Society provides recognition for students in Career and Technical Education for achievement and leadership. The national organization also seeks to provide scholarship opportunities for its members. At Riverside High School, students are invited to join based on their achievement. To receive an invitation, a student must be enrolled in his/her third CTE (which includes all PLTW courses) class, have an unweighted GPA of at least 3.0, be recommended by a CTE teacher and have a 90 average or higher in CTE classes already taken. Member students may wear honor cords at graduation. For more information, visit NTHS.org.

Project Lead the Way and Riverside High award recognition in the form of graduation regalia based on student performance on the EOC exams in their PLTW tracks and courses.

- In Engineering, students who earn “Distinguished” cut scores on the final exams in ANY four qualifying PLTW courses (IED, POE, DE, AE, CEA, CIM, and CSP) will receive a stole to wear at graduation. Students who earn any mix of “Accomplished” OR “Distinguished” cut scores in the aforementioned courses are entitled to walk with honor cords. The “Distinguished” and “Accomplished” marks will be based on the EOC scores issued by PLTW. The only exception is the use of course grades between 95-100 (Distinguished) and 90-94 (Accomplished) when EOCs are not administered (pandemic). There will be no other exceptions.

- In Computer Science, students who earn “Distinguished” cut scores on the final exams in ANY four qualifying PLTW courses (CSE, SEC, CSP, CSA and DE) will receive a stole to wear at graduation. Students who earn any mix of “Accomplished” OR “Distinguished” cut scores in the aforementioned courses are entitled to walk with honor cords. The “Distinguished” and “Accomplished” marks will be based on the EOC scores issued by PLTW. The only exception is the use of course grades between 95-100 (Distinguished) and 90-94 (Accomplished) when EOCs are not administered (pandemic). There will be no other exceptions.

The faculty also routinely recommends students for various annual scholarships, including the Durham Engineer's Club Scholarship, NC State's Park Scholarship, UNC's Morehead-Cain Scholarship, UNC-Charlotte's Levine Scholarship, the Gates Scholars Program and the Centennial Scholarship with the College of Textiles at NCSU.

IX. Expectations of Students

Admission to the Engineering PLTW program is a privilege. A student may be expelled from the program for behavioral issues, failure to pass classes, or absenteeism. If an expelled PLTW student does not reside in the Riverside HS district, he or she will be recommended for revocation and reassigned to his or her home school at the discretion of the Office of Student Assignment. The pathway transfer agreement form can be found at the end of this handbook on page 29.

X. Riverside Engineering Parent Action Council

History and Mission:

In 2003, Project Lead the Way® was brought to Duke University and placed under the direction of the Affiliate Director, Edmund T. Pratt School of Engineering. Four high schools, including Riverside, were soon invited to participate in this program.

Riverside Engineering Parent Action Council (REPAC) was originally formed in February 2008, for the purpose of supporting and advocating for the accreditation of Project Lead the Way at Riverside High School. Once accreditation was achieved, REPAC evolved into a group of parents acting to support the engineering faculty and to provide extracurricular activities, community service opportunities and social events for the students to enhance their engineering experience.

In July of 2016, REPAC registered as a North Carolina non-profit corporation and was approved as a 501(c)(3) in September of the same year.

All engineering parents are members of REPAC. Parents are encouraged to participate as volunteers. The executive board is elected in May and will recruit parents to lead and support various committees and associated activities. A brief description of our various committees and chair responsibilities can be found below. If you are interested in volunteering as an executive board member, committee chair or volunteer, please contact the REPAC president to obtain more detailed information about the duties involved. A calendar of events can be found at the end of this handbook. Volunteers do not need engineering experience, only the desire to make our children's high school experience the best it can be.

REPAC's agendas and minutes are promulgated via the GoogleGroup emails that members receive monthly. To sign up, contact the REPAC president or use the link on the REPAC website.

Expectations, Financial Policy and Meeting Dates:

REPAC is organized and operated for the charitable and educational purposes of supporting and promoting engineering education at Riverside. Through programs and activities, REPAC supports engineering faculty and students. Past REPAC activities have included organizing events such as the Welcome Back Picnic and Speaker Day, helping students to organize Field Trip fundraising, and pursuing corporate grants for program

equipment and materials. Suggestions for other activities to improve the program are always welcome and should be directed to the engineering program director.

REPAC Financial Policy: REPAC finances are managed through an annual budget. The budget is developed each year by the treasurer, in conjunction with the REPAC Executive Board. The budget is presented to the REPAC membership for approval during the first meeting of the fiscal year. Any proposed amendments to the budget during the year requires the approval of the general membership.

The REPAC treasurer is responsible for maintaining all applicable records and filing taxes and any other paperwork related to REPAC's 501(c)(3) status.

REPAC Meetings: REPAC generally meets on the second Thursday of the month at 6:00 PM, usually in person in the Media Center, although meeting via videoconference has been an option during the pandemic. Refer to the calendar on pages 24 – 25 for specific dates. The Engineering Program Director and other faculty attend these meetings regularly. All parents are encouraged to attend and participate in our events. If you are unable to do so, however, the minutes are distributed to keep you up to date on our activities.

Our meetings typically run 1¼ hours long, consisting of committee reports and planning for upcoming events. Time is also allotted for a town hall-type discussion on a specific topic addressing the needs of the engineering students and parents. Our Engineering Program Director leads the town hall section of the meeting. These topics will be listed on the agenda which is sent out prior to the monthly meeting.

REPAC Officers and Committees:

Officers and Committee Chairpersons for 2023 through 2024

President	Chris Lee
Vice President	Stephanie Brennan
Secretary	Alexandra Spessot
Treasurer	Henry Sommerville
At Large Board Member	Jill Foster
At Large Board Member	Shelagh Kenney
Extracurricular Chair/Service	Kathy Holt
Extracurricular Chair/Trips	Steven Haine
Fundraising Chair	Sarah Musser
Hospitality /Social Chair	Addi Hernandez
Spirit Wear Chair	Teri Lowder
Programs & Grants Chair	Kim Bowers
Speaker Day Chair	Monica Gainey
Chair Emeritus:	Linda Walters
Chair Emeritus:	Karen Seifert
Chair Emeritus:	Jeff Koweek
Chair Emeritus:	Lori Von Alten
Chair Emeritus:	Jennifer Bartnik
Chair Emeritus:	Kirsten Berlin
Chair Emeritus:	Victoria Hurtado
Chair Emeritus	Patti McLendon

REPAC Officer Responsibilities:

President and Vice-President:

- The president presides at all REPAC meetings; vice president to preside in absence of the president.
- With the Executive Board, appoint necessary committees to carry out council functions.
- Work with the Engineering Program Director in developing meeting agendas.
- Assist Engineering Program Director in developing an annual planning calendar.
- Work with the Spirit Wear Chair to coordinate marketing of RHS engineering merchandise (t-shirts, hoodies, car magnets, etc.).
- Research information needed for RHS website and DPS website.
- Work with the Engineering Program Director in establishing the content of the RHS engineering webpage and lobbying the District for more information on the DPS website.
- Update REPAC Handbook in August and January of each new school year and the annual REPAC calendar.
- Responsible for organizing ad hoc committees and overseeing execution of the annual Engineering Welcome Back Event in August, and the Senior Celebration and Awards Evening in May/June (in conjunction with the Program Director).
- Responsible for recruiting new leadership for REPAC and installing new officers at the final REPAC meeting in May. Also assist in the transitioning of these new officers into their new roles the following school year. Per the by-laws, recruiting new leadership is the responsibility of the Nominating Committee, of which the president is one of the members.

Secretary:

- Record minutes at each council meeting.
- Send meeting minutes to the president for distribution to the REPAC membership.
- Send minutes when requested to interested parties (Principal, DPS CTE Director).
- Request posting of meeting minutes to the REPAC website.

Treasurer:

- Manage all aspects of REPAC finances.
- Develop an annual working budget in conjunction with the Executive Board.

- Based on the budget, identify the need for fundraising to cover expenditures. Work with the Executive Board to determine appropriate methods for meeting the financial goals.
- Provide a monthly financial report to the Executive Board and members of the council.
- Manage deposits to and disbursements from the REPAC account.
- File taxes and any other financially related documents to ensure compliance with non-profit status requirements.

REPAC Committee Chair Responsibilities:

Community Liaison Chair:

- Identify opportunities in the Greater Durham Area for building relationships with businesses, nonprofit organizations and government institutions interested in helping to develop the RHS Engineering Program and providing learning opportunities for our students.
- In coordination with RHS Engineering Faculty, identify and help recruit businesses willing to provide internships for RHS Engineering students.
- Identify public relations opportunities to improve the exposure of the RHS Engineering Program.

Extracurricular Chair/Service:

- Organize and lead a subcommittee focused on providing at least two Community Service opportunities for our engineering students each year.

Extracurricular Chair/Trips:

- Work with Program Director to research and make the arrangements for the end of year field trip.

Fundraising Chair:

- Works with a committee to determine fundraising activities and oversees the coordination of those with designated leads.

Hospitality Chair:

- Organize and lead a committee to host the following Engineering Department events:
    - Hospitality during engineering student volunteer week(s) in August
    - Speaker Day Food/Refreshments/Gifts
    - Hospitality during Riverside Engineering Information Night for prospective students

Spirit Wear Chair:

- Organize and lead a committee responsible for the design (in conjunction with the Program Director), updates, ordering and inventory of REPAC merchandise and promotional materials, including items such as T-shirts, hoodies, car magnets, etc.

Nominating Committee Chair:

- Organize and lead a committee (REPAC president, one additional board member, and at least one general member) no later than March that will be responsible for:
    - Seeking nominees and developing a slate of candidates to present for election.
    - Notifying slate to membership as soon as possible, but no later than 72 hours prior to the May meeting.
    - Soliciting additional nominees from the floor during the meeting at which elections are being held.

Programs and Grants Chair:

- Organize and lead a committee responsible for:
    - Identifying, defining and developing funding sources to support existing and planned program activities.
    - Coordinating the development, writing and submission of grant proposals to third-party entities.

Speaker Day Chair:

- Through building business relationships in the community, identify and coordinate information about potential speakers for Speaker Day and/or special programs that can benefit our engineering students.
- Schedule presenters for Speaker Day and serve as host on the day of the event.

XI. General Information and Frequently Asked Questions

ABET Certified College Engineering Programs:

The Accreditation Board for Engineering and Technology (ABET) is the global leader in accrediting Engineering, Science and Technology education (abet.org). The website offers students an opportunity to search for certified programs by discipline (e.g. Mechanical Engineering) and location. ABET accredits Engineering Schools as well as individual programs. The five ABET accredited Engineering programs in North Carolina are: North Carolina State University Engineering, Duke University Pratt School of Engineering, North Carolina A&T University School of Engineering, UNC Charlotte School of Engineering and East Carolina University. There are also a number of accredited Computer Science programs at other North Carolina universities. Other schools with ABET accredited programs can be found on the ABET website.

Riverside High School Grading Scale:

For honors courses, one-half (0.5) point is added to the value of each grade percentage. For AP and PLTW courses, one (1) point is added. For Example: a student making a 94% as a final grade in Introduction to Engineering Design (IED), would receive 4.00 points for the 94% plus 1 point for the PLTW class, giving him/her a 5.00 for the course. A 94% in an honors course would earn a student 4.00 points plus 0.5 points for honors, giving him/her a 4.50 for the course. After the extra points are added, simple averages are computed (scores from all courses taken are added together and divided by the total number of courses) to determine GPA.

RHS Engineering/REPAC Calendar

2023 – 2024

August	Calendar Review
Friday, August 25th	REPAC Back to School Event (at Riverside Open House)
Monday, August 28th	First Day of School
Friday, September 1st	Engineering Assembly
Monday, September 4th	Labor Day Holiday
September 11th – October 31st	Senior Interviews
Thursday, September 14th	First REPAC Meeting
Monday, September 25th	Teacher Workday
Wednesday, October 11th	Early Release Day
Thursday, October 12th	REPAC Meeting
Thursday, October 26th (Tentative)	NCTAP Presentation
Tuesday, October 31st	End of 1st Grading Period
Wednesday, November 1st	Teacher Workday
Thursday, November 2nd	Deadline for RIT college credit
Friday, November 3rd	Freshman Engineering Assembly
Tuesday, November 7th	Teacher Workday
Thursday, November 9th	REPAC Meeting
Friday, November 10th	Veterans' Day Holiday
Friday, November 17th	Fall Speaker Day
November 22nd – 24th	Thanksgiving Holidays
November 29th or 30th (TBD)	Engineering Information Session
December – March	Junior Interviews
Thursday, December 14th	REPAC Meeting
December 20th – December 29th	Winter Holidays
January	Handbook Review
Monday, January 1st	New Year Holiday
Tuesday, January 2nd	Teacher Workday
Monday, January 8th – Friday, January 12th	1st Semester Final Exams
Friday, January 12th	End of 2nd Grading Period

Monday, January 15th	MLK, Jr. Holiday
Tuesday, January 16th	Teacher Workday
Thursday, February 8th	REPAC Meeting
Friday, February 16th	Early Release Day
Monday, February 19th	Teacher Workday
Friday, February 23rd	Spring Speaker Day
Friday, March 8th	Early Release Day
Thursday, March 14th	REPAC Meeting
Friday, March 22nd	End of 3rd Grading Period
Monday, March 25th – Friday, March 29th	Spring Break
Monday, April 1st	Teacher Workday
Wednesday, April 10th	Teacher Workday
Thursday, April 11th	REPAC Meeting
Friday, April 26th	Early Release Day
Thursday, May 9th	REPAC Meeting
Friday, May 10th	Early Release Day
Friday, May 17th	Engineering Field Trip
Monday, May 27th	Memorial Day Holiday
Friday, May 31st	Senior Celebration
Monday, June 3rd – Friday, June 7th	2nd Semester Final Exams
Friday, June 7th	Last Day of School / Early Release
Date TBD	Graduation

XIII. Riverside High School Event General Information

EVENT/PROGRAM	DATE	DESCRIPTION	STUDENT NOTES	PARENT NOTES
Welcome (Back) Event	During the week prior to the beginning of school	Social and informational event to introduce incoming freshmen and their families to Faculty, other students and their families.		In recent years this event has been held in conjunction with the School's Open House.
Engineering Assembly	During the school day near the beginning of the year	Engineering students gather with the Faculty to meet new Engineering students, celebrate academic leadership, discuss the upcoming year's milestones and review best practices for high school success.	ALL students should attend even if not enrolled in a Fall Semester Engineering Course.	Parents do not attend.
REPAC Meetings	Monthly (generally the 2nd Thursday at 6:00 pm in the Media Center)	REPAC is the parent support group for the Engineering program; Meetings involve faculty reports on the program as well as opportunities for parental involvement.	Students are welcome, but this meeting is much like a PTA for the Engineering program.	All parents are members of REPAC.

Fall Speaker Day Spring Speaker Day	Generally, a Friday in October Generally, the Friday of National Engineers Week in February	On Speaker Days, students are exposed to working Engineers, representatives of Engineering colleges and graduates of Riverside Engineering who have gone on to college Engineering programs.	Students are encouraged to attend even if they are NOT currently enrolled in an Engineering class.	Parents are needed to provide refreshments and lunch for speakers and Faculty; parent suggestions for speakers and assistance (working with REPAC Speaker Day chair) in procuring speakers is encouraged.
Rochester Institute of Technology College Credit	Registration due November of the year following course completion	Students may be eligible for college credit for all PLTW classes based on the final exam scores. Students must earn an 85% in the course and a specific score on the nationally normed exams.	For credit, all students must maintain an 85% score in the PLTW class.	Parents will be notified by the Program Director if their child is eligible. Parents and students are then responsible for sending in the fee (currently $225) and appropriate forms. Applying for credit is not mandatory.
NC State Visit	October or November (full day field trip) – or early Spring	Juniors are given the opportunity to visit both Engineering Campuses at NC State.	All Juniors in the Engineering program are encouraged to attend.	Beyond permission slips, parental involvement is generally not needed.
Freshman Assembly	November – after the first report card	Freshman PLTW students meet with the Program Director and Career Development Coordinator.	All freshman PLTW students should attend even if they are not enrolled in an Engineering course Fall Semester.	The faculty conducts the assembly during the school day. Parents do not attend.

National Engineering Week	Mid February	National Engineering Week celebrates the contributions Engineers make to society; Riverside seeks to celebrate with the Spring Speaker Day and a Community Service Project.	All PLTW Students are encouraged to participate in the Spring Speaker Day and the Community Service Project.	Parents may be needed to contribute to Speaker Day (see above) and to make suggestions for community service opportunities to the REPAC Extracurricular Chair for Service. Parents may also be needed to help supervise and provide transportation for community service.
Spring Program-Wide Field Trip	Mid to late May	PLTW students have the opportunity to attend a STEM Day at a theme park or other venue.	All PLTW students are eligible for the trip.	Parent chaperones are needed.
Engineering Senior Celebration and Superlatives presentations	Friday near the end of school	PLTW Seniors are honored by the department and REPAC with a Celebration Dinner.	All Senior PLTW students are invited to attend with their families.	Parents may be needed to assist the Social chair in planning for and hosting this event. REPAC also provides plaques for the Outstanding Student awards.

Career and Technical Education

Career Pathway Transfer

Student and Parent Commitment

Riverside High School

Student's Name _____

Science, Technology, Engineering, and Mathematics

Career Pathway:

_____STEM Education

Participation Guidelines

As a participant in a Career Pathway, we understand that the following commitments are mandatory for the continuation in my selected pathway at Riverside High School:

- Follow the prescribed curriculum for this pathway
- Demonstrate on-going commitment to learning as indicated by:

  - ✓ Maintaining a satisfactory academic progress (promoted to next grade)
  - ✓ Passing all courses in the pathway
  - ✓ 95% attendance in all classes
  - ✓ Conducting myself properly and respectfully in school

We understand that to be eligible to continue enrollment in the Career Pathway checked above, the student must meet the criteria stated above. Failure to meet any of these requirements will result in the revocation of your Career Pathway transfer, and you will be reassigned to the school in your resident attendance district.

_____ Date _____

Student's Signature

_____ Date _____

Parent's Signature