



NORTH CAROLINA
State Board of Education
Department of Public Instruction

Report to the North Carolina General Assembly

Educational and Competitive After-School
Robotics Grant Program

[SL 2023-134, sec. 7.23](#)

Date Due: October 15, 2024
DPI Chronological Schedule, 2023-2024

STATE BOARD OF EDUCATION

STATE BOARD OF EDUCATION VISION: Every public school student in North Carolina will be empowered to accept academic challenges, prepared to pursue their chosen path after graduating high school, and encouraged to become lifelong learners with the capacity to engage in a globally-collaborative society.

STATE BOARD OF EDUCATION MISSION: The mission of the North Carolina State Board of Education is to use its constitutional authority to guard and maintain the right of a sound, basic education for every child in North Carolina Public Schools.

ERIC DAVIS

Chair: Charlotte – At-Large

JILL CAMNITZ

Greenville – Northeast Region

JOHN BLACKBURN

Linville – Northwest Region

ALAN DUNCAN

Vice Chair: Greensboro – Piedmont-Triad Region

REGINALD KENAN

Rose Hill – Southeast Region

DONNA TIPTON-ROGERS

Brasstown – Western Region

MARK ROBINSON

Lieutenant Governor: High Point – Ex Officio

VACANT

North Central Region

J. WENDELL HALL

Ahoskie – At-Large

DALE FOLWELL

State Treasurer: Raleigh – Ex Officio

OLIVIA OXENDINE

Pinehurst– Sandhills Region

CATTY MOORE

Monroe At-Large

CATHERINE TRUITT

Superintendent & Secretary to the Board: Cary

VACANT

Southwest Region

NC DEPARTMENT OF PUBLIC INSTRUCTION

Catherine Truitt, State Superintendent :: 301 N. Wilmington Street :: Raleigh, North Carolina 27601-2825

In compliance with federal law, the NC Department of Public Instruction administers all state-operated educational programs, employment activities and admissions without discrimination because of race, religion, national or ethnic origin, color, age, military service, disability, or gender, except where exemption is appropriate and allowed by law.

Inquiries or complaints regarding discrimination issues should be directed to:

Thomas Tomberlin, Director of Educator Recruitment and Support, NCDPI
6301 Mail Service Center, Raleigh, NC 27699-6301 / Phone: (984) 236-2114 / Fax: (984) 236-2099

Visit us on the Web: www.dpi.nc.gov

0422

JOINT LEGISLATIVE EDUCATION OVERSIGHT COMMITTEE REPORT REQUIREMENTS

[SL 2021-180, sec. 3.5\(a\)\(31\)](#) established the Educational and Competitive After-School Robotics Grant Program (Program) during the 2021-2023 fiscal biennium. The program was continued per [SL 2023-134, sec 7.23](#). In each case, the purpose of the Program was to (i) promote evidence-based, after-school programs for robotics education and competition, (ii) motivate students to pursue education and career opportunities in science, technology, engineering, and mathematics while building critical life and work-related skills, and (iii) re-engage students and remediate learning loss resulting from the COVID-19 pandemic.

A qualifying school was eligible as follows:

Any public school unit (PSU) is eligible to apply to the Department of Public Instruction for a grant to develop an educational and competitive after-school robotics program with a robotics partner. As used in this subsection, the term "robotics partner" shall refer to a third-party entity, such as a nonprofit organization or institution of higher education, approved by the Department of Public Instruction, that is able to provide adequate support for an after-school robotics program. In order to provide adequate support, a robotics partner must meet at least all of the following criteria:

1. Have a national presence in robotics education and competition.
2. Provide adequate instruction and programming for students and adult volunteers in (i) robotics education, (ii) project-based learning, and (iii) competitive robotics.
3. Promote a safe and equitable social environment.

Applications shall include, at a minimum, the following information:

1. Evidence that the applicant has or will be able to establish a relationship with a robotics partner.
2. A proposed budget for the educational and competitive after-school robotics program.

Funds may be used for any of the following purposes:

1. Establishing a relationship with a robotics partner.
2. Purchasing robotics kits.
3. Providing stipends for coaches.
4. Making payments associated with participation in a robotics league or robotics competition.
5. Paying fees incurred as part of the administration of a robotics team.

Per [SL 2023-134, sec 7.23](#), reporting no later than February 15, 2024, for the 2023-2024 fiscal year and October 15, 2024, for the 2024-2025 fiscal year the Department shall communicate the following information to the Joint Legislative Education Oversight Committee and the Fiscal Research Division:

- Number and amounts of grants awarded
- Identities of the public school units receiving grants
- Identities of public school units that applied for grants but did not receive one
- The extent to which students participating in after-school robotics programs funded by the Program experienced measurable improvement in academic performance, if any

NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION (NCDPI) IMPLEMENTATION

This report is based on the most current activity and processes for the Competitive After-School Robotics Grant based on legislation outlined in both [SL 2021-180, sec. 3.5\(a\)\(31\)](#) and [SL 2023-134, sec 7.23](#).

The allotment policy related to [SL 2021-180, sec. 3.5\(a\)\(31\)](#) was approved by the North Carolina State Board of Education (SBE) on February 3, 2022. This action permitted NCDPI to distribute allotted funds (\$1.6 million) to Public School Units (PSUs) upon approval of applications. The grant application opened in the Comprehensive Continuous Improvement Plan (CCIP) system on April 1, 2022, and closed on May 27, 2022. The allotment application was open to all North Carolina PSUs that meet the qualifications as outlined in the legislation. The application captured actual costs to be provided to those schools that implement the Competitive After-School Robotics Program and collected data from the PSUs that meet the criteria as specified by the legislation including low-performing school status; innovative school district status; and at-risk status. Awards were approved by the SBE on August 4th, 2022, and funds were distributed to PSUs immediately thereafter.

The Department utilized the allotment policy approved by the SBE related to [SL 2021-180, sec. 3.5\(a\)\(31\)](#) to implement the grant process per [SL 2023-134, sec 7.23](#). The Department followed an identical process to advertise and communicate the grant opportunity, receive and review applications from PSUs, and award funds. The grant application opened in the Comprehensive Continuous Improvement Plan (CCIP) system on November 15, 2023, and closed on December 31, 2023. Awards were approved by the SBE on February 1, 2024, and funds were distributed to PSUs immediately thereafter.

In March 2024 the State Board of Education (SBE) approved reallocating \$1,163,446 from the PRC 189 Supplemental Academic Enrichment Program to the PRC 201 Educational and Competitive After-School Robotics Grant Program to support grant applications that could not be awarded due to insufficient funding. Following SBE approval of additional funds, in April 2024, the Department approved twenty-three additional grant applications totaling \$1,123,454.41 in funding.

Grant Applications and Awards

Since the inception of the Competitive After-School Robotics Program, the Department has received 111 grant applications for a total funding request of \$8,288,426.36 over three grant cycles. This represents \$5,688,426.36 beyond the funding allocated.

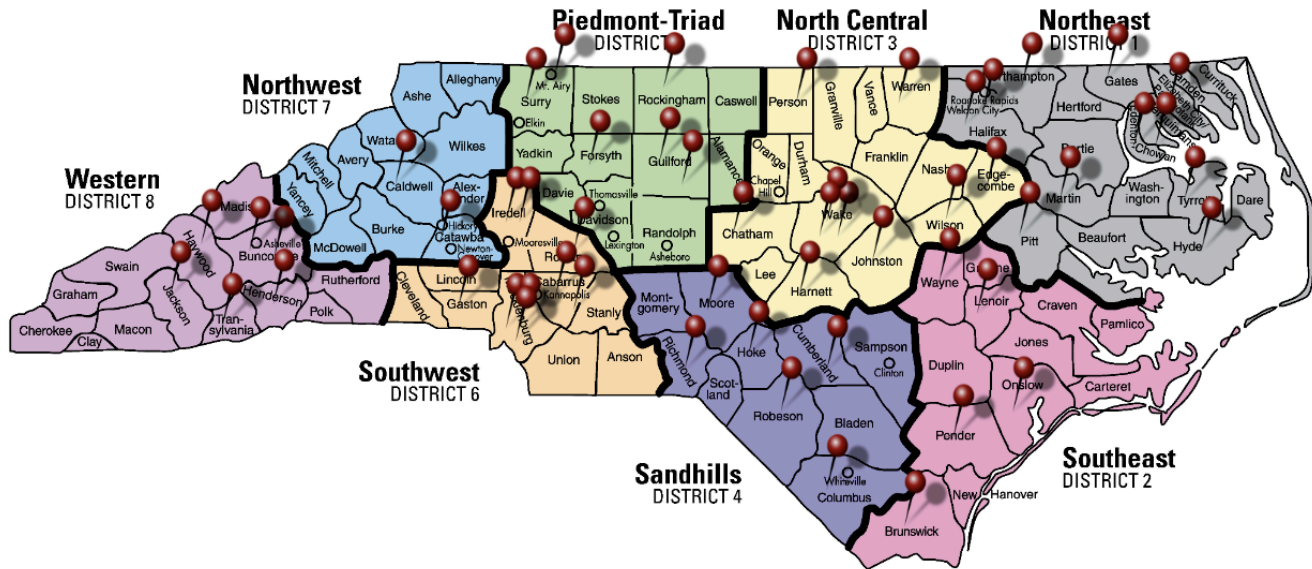
- 2022 - 65 applications with a total request of \$6,122,930.89 for \$1,600,000.00 of allotted funding
- 2024 - 46 applications with a total request of \$2,165,495.47 for \$1,000,000.00 of allotted funding

During the initial grant cycle in 2022, 18 LEAs and 1 charter school were awarded \$1,590,075.45 in grant funding.

Between January and April 2024, two additional grant award cycles were completed. In February 2024, 20 LEAs and 2 charter schools were awarded a total of \$1,000,000.00. In April 2024, utilizing funds transferred from the PRC 189 Supplemental Academic Enrichment Program approved by the SBE in March 2024, an additional \$1,123,454.41 was awarded to 16 LEAs and 7 charter schools.

All eight State Board of Education regions were represented in the grants awarded.

Geographic Distribution of Grant Awards



Grant Reporting Data

NCDPI implemented a biannual survey distributed to all 2022 and 2024 awardees requesting updates on the status of the grant and progress toward meeting their stated goals. Grant recipients were asked to provide updates in March 2023, January 2024, and September 2024. Per [SL 2021-180, sec. 3.5\(a\)\(31\)](#), all applicants were required to provide data from the 2022-2023 and 2023-2024 school years related to:

- Number of schools participating in the grant
- Number of After School Robotics teams utilizing grant funds
- Number of students participating in After School Robotics teams
- Number of staff coaching or mentoring teams
- Number of competitions team(s) attended supported by grant funds

Table 1 lists the name of each requesting PSU, the grant cycle during which the PSU applied, the amount requested, and whether the application was approved. Grants awarded using funds from PRC 189 are noted, all other grant awards were funded through PRC-201.

Table 1

| PSU Name | 2022 | | 2024 | |
|---------------------------------|------------------------|---------------|------------------------|---------------|
| | Total Budget Requested | Grant Awarded | Total Budget Requested | Grant Awarded |
| Buncombe County Schools | \$36,758.00 | Yes | \$54,230.00 | Yes - PRC 189 |
| Catawba County Schools | \$24,600.00 | Yes | \$65,664.48 | Yes - PRC 189 |
| Edgecombe County Public Schools | \$78,305.50 | Yes | \$70,823.38 | Yes - PRC 189 |
| Henderson County Schools | \$82,260.00 | Yes | \$61,940.00 | Yes - PRC 189 |
| Mountain Island Charter | \$20,000.00 | Yes | \$25,000.00 | Yes - PRC 189 |
| Northampton County Schools | \$62,304.12 | Yes | \$34,300.00 | Yes - PRC 189 |
| Pender County Schools | \$243,056.00 | Yes | \$75,000.00 | Yes - PRC 189 |
| Surry County Schools | \$58,980.00 | Yes | \$70,780.00 | Yes - PRC 189 |

| PSU Name | 2022 | | 2024 | |
|------------------------------------------|------------------------|---------------|------------------------|---------------|
| | Total Budget Requested | Grant Awarded | Total Budget Requested | Grant Awarded |
| Wilson County Schools | \$83,660.00 | Yes | \$33,100.00 | Yes - PRC 189 |
| Brunswick County Schools | \$70,430.00 | Yes | DID NOT APPLY | |
| Elizabeth City-Pasquotank Public Schools | \$45,550.00 | Yes | | |
| Gates County Schools | \$51,431.00 | Yes | | |
| Guilford County Schools | \$204,690.00 | Yes | | |
| Hoke County Schools | \$206,487.61 | Yes | | |
| Hyde County Schools | \$30,000.00 | Yes | | |
| Iredell-Statesville Schools | \$22,155.00 | Yes | | |
| Tyrrell County Schools | \$100,000.00 | Yes | | |
| Wake County Schools | \$120,383.22 | Yes | | |
| Warren County Schools | \$49,025.00 | Yes | | |
| Asheville City Schools | \$28,297.00 | No | \$73,671.16 | Yes |
| Cabarrus County Schools | \$451,397.59 | No | \$73,949.94 | Yes |
| Caldwell County Schools | \$400,000.00 | No | \$75,000.00 | Yes |
| Charlotte-Mecklenburg Schools | \$206,200.00 | No | \$49,812.00 | Yes - PRC 189 |
| Cumberland County Schools | \$64,300.00 | No | \$23,466.12 | Yes |
| Harnett County Schools | \$54,770.00 | No | \$42,532.00 | Yes |
| Jackson County Public Schools | \$88,400.00 | No | \$25,000.00 | Yes - PRC 189 |
| Johnston County Public Schools | \$36,500.00 | No | \$57,370.00 | Yes |
| Lenoir County Public Schools | \$31,345.00 | No | \$33,895.00 | Yes |
| Mount Airy City Schools | \$29,295.76 | No | \$16,686.90 | Yes |
| Northeast Academy of Aerospace & AdvTech | \$53,000.00 | No | \$24,500.00 | Yes - PRC 189 |
| Onslow County Schools | \$142,200.00 | No | \$75,000.00 | Yes - PRC 189 |
| Person County Schools | \$49,320.00 | No | \$24,018.00 | Yes |
| Pitt County Schools | \$177,180.00 | No | \$34,000.00 | Yes |
| Public Schools of Robeson County | \$164,630.00 | No | \$74,955.00 | Yes |
| Rockingham County Schools | \$326,000.00 | No | \$40,000.00 | Yes |
| Triangle Math and Science Academy | \$103,000.00 | No | \$37,691.00 | Yes - PRC 189 |
| Wayne County Public Schools | \$79,177.60 | No | \$70,160.00 | Yes - PRC 189 |
| Winston Salem / Forsyth County Schools | \$383,380.00 | No | \$40,139.00 | Yes |
| A.C.E. Academy | \$17,950.00 | No | DID NOT APPLY | |
| Arapahoe Charter School | \$48,943.00 | No | | |

| PSU Name | 2022 | | 2024 | |
|-----------------------------------|------------------------|---------------|------------------------|---------------|
| | Total Budget Requested | Grant Awarded | Total Budget Requested | Grant Awarded |
| Bear Grass Charter School | \$32,540.00 | No | DID NOT APPLY | |
| Beaufort County Schools | \$77,700.00 | No | | |
| Burke County Schools | \$110,000.00 | No | | |
| Camden County Schools | \$18,150.00 | No | | |
| Carter G Woodson School | \$76,261.99 | No | | |
| Carteret County Public Schools | \$31,575.00 | No | | |
| Chapel Hill-Carrboro City Schools | \$67,590.00 | No | | |
| Cherokee County Schools | \$97,926.00 | No | | |
| D.C. Virgo Preparatory Academy | \$14,112.00 | No | | |
| Falls Lake Academy | \$35,337.00 | No | | |
| Gaston County Schools | \$265,643.00 | No | | |
| Greene County Schools | \$63,800.00 | No | | |
| McDowell County Schools | \$35,000.00 | No | | |
| Nash County Public Schools | \$33,104.50 | No | | |
| New Hanover County Schools | \$16,200.00 | No | | |
| Orange County Schools | \$85,975.00 | No | | |
| Pine Lake Preparatory | \$25,500.00 | No | | |
| Queen City STEM School | \$103,000.00 | No | | |
| Research Triangle High School | \$85,500.00 | No | | |
| River Mill Academy | \$6,000.00 | No | | |
| Rocky Mount Preparatory | \$17,255.00 | No | | |
| Scotland County Schools | \$95,500.00 | No | | |
| The New Dimensions School | \$50,000.00 | No | | |
| Yadkin County Schools | \$50,900.00 | No | | |
| American Renaissance School | DID NOT APPLY | | \$75,000.00 | Yes - PRC 189 |
| Brevard Academy | | | \$11,805.50 | Yes |
| Chatham County Schools | | | \$50,332.00 | Yes |
| Columbus County Schools | | | \$39,600.00 | Yes |
| Edenton-Chowan Schools | | | \$62,000.00 | Yes - PRC 189 |

| PSU Name | 2022 | | 2024 | |
|--------------------------------------------|------------------------|---------------|------------------------|---------------------------------|
| | Total Budget Requested | Grant Awarded | Total Budget Requested | Grant Awarded |
| Haywood County Schools | DID NOT APPLY | | \$58,888.04 | Yes |
| Iredell Charter Academy of Arts & Sciences | | | \$6,649.00 | Yes - PRC 189 |
| Kannapolis City Schools | | | \$37,176.74 | Yes |
| Lake Norman Charter | | | \$10,000.00 | Yes - PRC 189 |
| Magellan Charter | | | \$8,778.24 | Yes - PRC 189 |
| Martin County Schools | | | \$25,421.00 | Yes |
| Moore Montessori Community School | | | \$43,131.20 | Yes - PRC 189 |
| Next Generation Academy | | | \$66,493.60 | Yes |
| Richmond County Schools | | | \$75,000.00 | Yes |
| Roanoke Rapids City Schools | | | \$25,600.00 | Yes |
| Rowan-Salisbury Schools | | | \$73,592.57 | Yes - PRC 189 |
| Weldon City Schools | | | \$71,302.54 | Yes - PRC 189 |
| Randolph County School System | | | \$39,991.00 | Yes - PRC 189 Declined award |
| Total Requested | \$6,019,930.89 | | \$2,123,454.41 | |
| Total Funded | \$1,590,075.45 | | \$2,052,151.87 | |

Number of Participating Schools

From July 2022 through the start of the 2024-2025 school year, the After School Robotics Grant has resulted in:

- The number of participating schools increased from 144 to 232 schools
- Support for 381 Robotics teams with 225 new teams expected in the 2024-2025 school year, established specifically as a result of the After School Robotics Grant program
- A total of 344 new robotics teams
- A 61% increase in the number of participating schools and a 109% increase in the number of teams

| Table 2 | 2022-2023 (As of 3/23) | | | 2023-2024 (As of 1/24) | | | Anticipated 2024-2025 | | |
|--------------|------------------------|--------------|---------------|------------------------|--------------|---------------|-----------------------|--------------|------------|
| Grade Span | No. of Schools | No. of Teams | No. New Teams | No. of Schools | No. of Teams | No. New Teams | No. of Schools | No. of Teams | New Teams |
| Elementary | 80 | 103 | 65 | 69 | 93 | 10 | 116 | 167 | 74 |
| Middle | 35 | 57 | 23 | 29 | 51 | 7 | 52 | 78 | 45 |
| High School | 25 | 18 | 4 | 21 | 23 | 6 | 45 | 61 | 36 |
| Other* | 4 | 4 | 3 | 2 | 5 | 1 | 19 | 75 | 70 |
| TOTAL | 144 | 182 | 95 | 121 | 172 | 24 | 232 | 381 | 225 |

*Includes K-4, 5-8, 6-12, K-8, and K-12 programs

Number of Students and Staff Participating

From July 2022 through the start of the 2024-2025 school year, the After School Robotics Grant has resulted in:

- A 218% increase in the number of students participating in Robotics teams, from 1,685 in March of 2023 to September 2024
- A 285% increase in the number of high school students participating in Robotics teams
- A 155% increase in the number of staff supporting Robotics teams

| Table 3 | 2022-2023 (As of 3/23) | | 2023-2024 (As of 01/24) | | Anticipated 2024-2025 | |
|--------------|------------------------|--------------|-------------------------|--------------|-----------------------|--------------|
| Grade Span | No. of Students | No. of Staff | No. of Students | No. of Staff | No. of Students | No. of Staff |
| Elementary | 925 | 131 | 921 | 118 | 1670 | 200 |
| Middle | 447 | 55 | 397 | 48 | 785 | 82 |
| High School | 253 | 37 | 295 | 31 | 975 | 125 |
| Other* | 60 | 7 | 35 | 3 | 1933 | 181 |
| TOTAL | 1685 | 230 | 1648 | 200 | 5363 | 588 |

*Includes K-4, 5-8, 6-12, K-8, and K-12 programs

Number of Competitions

Grant applications submitted to the Department were required to include plans for robotics teams to participate in formal competitions. From July 2022 through the start of the 2024-2025 school year, the After School Robotics Grant has supported in part, or fully, schools being able to participate in local, regional, statewide, and national Robotics competitions. Data provided by participating PSUs indicates:

- An anticipated 144% increase in the number of competitions in which school teams participated
- Growth in the number of competitions attended across all grade spans

Table 4

| No. of Competitions | 2022-2023 | 2023-2024 | 2024-2025** |
|---------------------|------------|------------|-------------|
| Elementary | 85 | 74 | 136 |
| Middle | 35 | 11 | 68 |
| High School | 30 | 25 | 93 |
| Other* | 4 | 25 | 57 |
| Total | 145 | 140 | 354 |

*Includes K-4, 5-8, 6-12, K-8, and K-12 programs

**Based on the number of competitions scheduled as of September 2024

In addition to the data above, PSU responses related to impacts on student outcomes from 2022 through the start of the 2024-2025 school year indicated consistent trends showing:

- Increased student interest in STEM and Robotics
- Increased student collaboration, critical thinking, and ability to problem-solve with peers
- An overall rise in student engagement
- Positive impacts on student attendance
- Decreases in student mental health and behavioral concerns
- Establishment of feeder patterns across K-12 to support robotics teams/programs
- Students, staff, and community interest in maintaining and sustaining newly created robotics programs

PSUs noted challenges and concerns related to:

- Questions around future funding and being able to financially support robotics teams in upcoming years
- Transportation for after-school programming given the target student population often faced challenges to provide transportation after school hours
- Program continuity resulting from changes in school or district-level leadership
- Finding, and keeping, mentors/coaches

Summary

Applications received by the Department demonstrate a significant interest on the part of PSUs from across the State to initiate new, and further expand, existing Robotics programs. Through the application and review process, the Department noted:

- Funding requests from the 2022 and 2024 funding cycles exceeded available funds by \$5 million
- 111 applications were submitted during the two grant cycles from 84 different PSUs
- 64 different PSUs (55 LEAs and 9 Charters) received funding

Through the three grant cycles the After School Robotics Grant program:

- Growth in the number of participating schools and the number of teams across ALL grade spans demonstrates the establishment of feeder programs across the state
- Directly helped establish 225 new Robotics teams out of 381 teams supported by the grant
- Impacted over 5,000 students and involved almost 600 staff members
- Has supported 363 elementary robotics teams between 2022 and 2024, establishing 149 new elementary teams
- As reported by participating PSUs, the grant program has increased interest in STEM, increased student engagement, and increased student use of durable skills such as problem-solving, critical thinking, and collaboration

The overall impact the grant program is having on students is best exemplified by the following response from a participating PSU:

“Overall, the growth observed in all of the students is astounding. **Their teamwork, communication, and ability to handle unexpected challenges have significantly improved from where they started. They support one another, share the workload, and eagerly embrace every opportunity that arises.** Alongside their technical skills, these qualities make their progress truly impressive and a source of pride for everyone involved.”

The Educational and Competitive After School Robotics Program can only be described as a true success, with significant positive impacts on students, schools, and their communities.

The Department, with the support of the State Board of Education, gives the strongest possible recommendation for continued funding to support this program and the hundreds of schools and the thousands of students it has positively impacted.