

Testimony by
Kathy Gerber
Chair, OhioFIRST
(A Program of the PAST Foundation)

In support of GRF 200597 as part of H.B. 64

“Education Program Support”

FIRST (For Inspiration and Recognition of Science and Technology)

Chairman Smith, Vice Chair Schuring and members of the committee. My name is Kathy Gerber and I am the Chair of Ohio*FIRST*, a program of the PAST Foundation. Ohio*FIRST* is made up of educators, corporate engineers and business people throughout Ohio, involved with helping expand and sustain *FIRST* Robotics Competition teams, and competitions in Ohio.

Thank you for the opportunity to appear before you today in support of a request to appropriate \$4 million over two years in the biennial budget to support the *FIRST* robotics STEM program as part of GRF 200597 – Education Program Support.

FIRST stands for “For Inspiration and Recognition of Science and Technology”. *FIRST* is a 501(c) (3) not-for-profit public charity that has been created by inventor Dean Kamen 25 years ago. Its mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills that inspire innovation, and foster well-rounded life capabilities, including self-confidence, communication and leadership. While the *FIRST* organization designs the program framework, volunteers make this program succeed by mentoring teams and running competitions.

My involvement with *FIRST* began over seven years ago when my daughter joined a *FIRST* Robotics Competition team in high school. I helped mentor her team one of the four years she was on the team. The team’s name was Murphy’s Outlaws and if you know anything about Murphy’s Law then you understand what this team was all about. Yes, anything that could go wrong did, but that was all part of the experience, finding out how to fix the problems. I have been on the board of the Central Ohio Robotics Initiative for six years and co-founded Ohio*FIRST*. All this was done on a purely volunteer basis. I have seen how this experience has impacted my daughter. She is a problem solver that takes leads and works well with others. I believe there is nothing that she cannot do. She

is currently a junior in Material Science and Engineering at The Ohio State University and has held internship positions at Ashland, GE Aviation (this summer will be her second internship there), as well as Entrotech, a fast growing advanced materials company here in Columbus. I truly believe she wouldn't be where she is today without this program, a female in engineering with no boundaries and knowing she can meet any challenge ahead of her.

Around the world, employers are clamoring for people with STEM (science, technology, engineering, and math) skills. In fact, based on the Bureau of Labor Statistics, STEM jobs are expected to grow 55 percent faster than other jobs in the next decade. This is why *FIRST* exists – to help provide the 21st century work skills students need to get a great job in science, technology or any other field they desire.

As a result of being engaged in *FIRST*,

- 87% of the students become more interested in doing well in school, and
- 90% plan on taking more challenging math and science courses.
- 90% of alumni are in a STEM field as a student or professional.
- 91% of *FIRST* participants are more interested in attending college and are twice as likely to major in science or engineering once they get there.
- 33% of girls and 41% of boys, in this program, major in engineering in college, and
- 98% gain improved problem solving skills.

* Source: Brandeis University Evaluations 2011, 2013

FIRST is “More Than Just Robots,” and it is not just for those interested in the sciences. Students interested in the arts, working with others, or just looking for a place where they can fit in with others, can grow. It is also about helping others. From elementary school through high school, students help each other, other teams and younger students. Professional engineers and college students mentor high school students and these high school students in return mentor the elementary and middle school students. It is what *FIRST* is about; helping everyone succeed.

Students from all socio-economic backgrounds can benefit. Inner city students that have trouble just trying to graduate are not only graduating but thriving and seeing their dreams come true. This year a student at Thurgood Marshall High School, an inner city school that is challenged to graduate kids from high school, is not only graduating, but is getting a full ride to Case Western University. He attributes this largely to his *FIRST* experience. East Technical High School located in the center of Cleveland's most impoverished area introduced *FIRST* to its students; 12 students, including 5 girls represented the first class to experience a full four years of the *FIRST* Robotics Competition. All of them not only

graduated high school, but also went on to college and received scholarships. *FIRST* encourages students to dream, while proving that anything is possible.

Companies realize the amount of training that goes into building a robot of competition caliber, and they offer *FIRST* students both internships and part-time positions right out of high school. One example is Henny Penny, a global leader in foodservice equipment solutions in Eaton, Ohio, who hired a high school student for a part-time position after graduation. Each time the team presents to a corporate sponsor, at least one student is handed a business card and they walk away a little more proud, knowing that what they've learned is setting them up for a bright future.

If *FIRST* can teach high-school students to impress even the most professional engineers, just imagine what the workforce of tomorrow would be like if *FIRST* were in every school across America.

As a result of approving the *FIRST* Education Program Support initiative:

- Grants will be provided to support new and existing *FIRST* teams (Kindergarten-12),
- Teams and mentors will be educated about the *FIRST Robotics Competition* program and receive training,
- Mentors will receive a stipend,
- The number of *FIRST* Robotics Competition events will be increased, and
- A sustainable infrastructure will be developed to ensure program success.

I invite you to examine the attachments to this testimony that include:

- Letters of support from Parker Hannifin, Youngstown State, Rockwell Automation, Delphi Foundation, and Alexander and Associates,
- Additional information about the benefits of *FIRST*,
- A list of corporations, educators and legislators that support this effort, that include:
 - Representative Rick Perales, who is sponsoring this appropriation,
 - Senators Peggy Lehner and Joe Schiavoni,
 - Pete Buca, VP, Parker Hannafin,
 - Jim Tressel, President of Youngstown State,
 - Dr. Mark Smith, President of Ohio Christian University and
 - Dr. Todd Hoadley, Superintendent of Dublin City Schools.
- Also included for your review are statistics associated with ten years of evaluation data that demonstrate the transformative effects of *FIRST* programs on students.

Thank you for considering this addition to House Bill 64.



What is *FIRST*?

The mission of *FIRST* (For Recognition of Science and Technology) is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills that inspire innovation, and foster well-rounded life capabilities, including self-confidence, communication and leadership.

[Watch the Video to Really Understand](#)



[Click here](#)

If approved the \$4 million in state funding through the biennial budget will:

- ◆ Provide grants to new and existing *FIRST* teams (K-12),
- ◆ Support recruitment and training of teams and mentors,
- ◆ Promote and expand development of statewide robotics events, and
- ◆ Support development of a sustainable infrastructure to ensure program success.

Legislation sponsored by Representative Rick Perales, District 73 and Chair of the Ohio Aerospace and Aviation Technology Committee.



FIRST Programs Provide Students With ...

- ◆ **A Transformative Experience That Inspires Them in STEM**
- ◆ **Prepares them for College and the Workforce as a Valuable Part of the Community**

They learn

- Strategy
- Business planning
- Marketing and fund raising
- Public speaking
- Project management
- Team management
- Computer programming, animation and website development
- Community outreach and mentoring other students

- ◆ **More Than Just Robots!**

In addition to inspiring kids in STEM it provides a hands-on experience to learn important life skills.

- Teamwork
- Respect
- Self-confidence
- Problem solving
- Knowing that with effort that anything is possible
- “Gracious Professionalism” vs. BattleBots experience

All Students Can Benefit

Students that barely would have graduated from school are not only graduating, but going to college and getting scholarships.

Examples: East Technical High School (Cleveland) and Thurgood Marshall High School (Dayton)

This is not just for those interested in the sciences.

Students interested in the arts, working with others and just looking for something different all will be excited about this experience. Many students have this as their only extra-curricular activity.



Key benefits of the flagship *FIRST* Robotics Competition Program are:

- ◆ Students are eligible for over \$20 million in scholarships from over 180 organizations
- ◆ Students are mentored by experienced professional engineers
- ◆ 87% of students involved in the program reported an increased motivation to do well in school
- ◆ 90% plan on taking more challenging math and science courses
- ◆ Significant increases in enrollment, attendance, and graduation rates have been recorded
- ◆ 88% of students went on to college
- ◆ 90% of alumni are in a STEM field as a student or professional
- ◆ 80% of schools reported this has led to the creation of new courses and/or integration of robotics/STEM instruction into existing classes

Source: Brandeis University Evaluations 2011, 2013



We need this for Ohio! We need this for the kids!

We want to help expand this program, develop our workforce and see kids become valuable additions to the community, rather than a potential drain on our economy.

Join Us in Our Support...

Rick Perales
State Representative
District 73

Peggy Lehner
State Senator
District 6

Pete Buca
VP, Technology & Innovation
Parker Hannifin Corporation

Lindsey C. Williams
VP, Government Relations
Director, Delphi Foundation, Inc.

Joe Schiavoni
State Senator
District 33

Jim Tressel
President
Youngstown State

Dr. Mark A. Smith
President
Ohio Christian University

Nathan Klingbeil
Dean, College of Engineering
and Computer Science
Wright State University

Dr. Todd Hoadley
Superintendent Dublin
City Schools

C. Todd Boothe
Director of Technology
Gallia County Local
Schools

Paul Haggard
Director, Client Communication
Fiserv



Parker Hannifin Corporation
Fluid Connectors Group
6035 Parkland Blvd
Cleveland, Ohio 44124
Phone (216) 896-3000
Fax Number (216) 896-4022

April 14, 2015

To whom it may concern,

Parker Hannifin Corporation has been an active supporter of FIRST Robotics programs for more than 10 years both through its Foundation and its various divisions operating throughout the United States. Parker's support has included national Gold level sponsorship for the entire event, thousands of hours per year of employee volunteer support, and local financial support for dozens of teams. Personally, my entire family has supported FIRST by providing financial support for FIRST Teams, volunteering for FIRST events, and mentoring as well as participating on FIRST Teams. Myself, Diane Sadowski, my wife, and Melody DS Buca, our daughter, have attended the world championships in St. Louis multiple times representing both Parker and the Buckeye Regional Planning Committee of which both my wife and I are members. My wife's business, FirstFuelCells, has also provided financial and mentoring support to FIRST Teams multiple times over the years.

Support of FIRST for both Parker and my family began with our commitment to bettering the world in which we live. The need for STEM education has never been greater in our increasingly technology-dominated world. The key to attract our youth to the challenges of engineering, science, and math lies in our ability to ignite their interest in the application of technology in meaningful ways for their life circumstances. FIRST does this in a way that no other program has accomplished. It is hard to believe that any program could more effectively combine the elements of STEM education in an incredibly challenging technological puzzle whose solution is considered "fun" by the students and yet this is exactly what FIRST does. Parker and my family will remain supporters of this program. We would like to see the benefits of FIRST expanded to reach more of our students in Ohio and would gladly answer any questions we can or provide any guidance needed regarding our experiences. OhioFIRST is an effort to push the state's program into a realm of excellence and outreach that very few other states have attained. We greatly favor this and expect that the result will have long-term benefit for our economy and residents that will return their investment many times over.

Thanks for this opportunity to explain this program. We look forward to communicating with you in the future.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter V. Buca", with a long, sweeping underline that extends to the right.

Peter V. Buca
Vice President,
Technology & Innovation

/clg

DELPHI

March 30, 2015

To Whom It May Concern:

In my role as executive director of Delphi Foundation, Inc., I have had the great pleasure of supporting *FIRST* (For Inspiration and Recognition of Science and Technology) robotics programs since 1999. As part of a larger grant package of funding for *FIRST* in states where Delphi currently has business operations, the Delphi Foundation provides annual financial and in-kind support to four FRC (*FIRST* Robotics Competition) teams in Northeast Ohio, as well as donations to support several FRC and FLL (*FIRST* LEGO League) competitions held in the same region. These efforts are investments in the future of Ohio's youth, as well as youth across our nation.

I have visited with teams and attended *FIRST* competitions on numerous occasions, including the Championship Event at the Edward Jones Dome in St. Louis (and at Disney World in Florida during its early years). It is truly exciting to witness firsthand just how much students gain from the *FIRST* experience as well as the excitement many of them share about pursuing science and technology careers. In addition to delivering an outstanding array of STEM programs for children in grades K-12, few other organizations inject as much fun and excitement for hands-on learning as *FIRST* does with its competitions modeled after real-life sporting events. *FIRST*'s proven formula for success has generated great momentum in growing the talent pool of the next generation of highly-skilled technical professionals. Expanding *FIRST* team growth in Ohio can help fill the demand for skilled talent the State will need to thrive.

Many Ohio-based corporations and universities recognize the benefits *FIRST* programs bring to the state's K-12 students . . . and have contributed their own resources and volunteers in support of Ohio's *FIRST* teams and competitions. The non-profit volunteer organization OhioFIRST is now leading the way toward building *FIRST* team growth, attempting to bring organizations and individuals together to coordinate a unified effort required to attain greater expansion and acceptance of *FIRST* programs statewide. I strongly endorse OhioFIRST's mission and encourage the Ohio Legislature to join the cause by appropriating funding in support of this very worthwhile effort.

Feel free to contact me should you need additional information about the *FIRST* program and its impact on the next generation of leaders.

Best regards,



Lindsey C. Williams
Vice President, Government Relations
Director, Delphi Foundation, Inc.

To whom it may concern:

During my time at Youngstown State University, I have been directly involved with the FIRST (For Inspiration and Recognition of Science and Technology) robotics program. In addition to providing scholarships to FIRST students to attend our university, we were the major sponsor of the Mahoning Valley Region competition where I was the keynote speaker. We even have YSU students involved to mentor teams and volunteer at competitions.

It was exciting to see how much students gain out of this experience. It is more than just robotics, it is: strategy development, business planning, problem solving, public speaking, leadership, community outreach, all while helping each other and other teams grow and develop. Students who might not have been engaged in science and technology now directly see how what they learn in class is used with true hands-on application. There is no other high school program that provides the breadth of experience to help build the skilled workforce that we need in the state.

I strongly support Ohio's FIRST non-profit volunteer organization (OhioFIRST) and having the state provide funding to its efforts.

Sincerely,



James P. Tressel
President



January 30, 2015

To whom it may concern,

Rockwell Automation believes in Engineering Our Future™ and Inspiring Young Minds™ -- our trademarked taglines that describe how we leverage and invest company resources to prepare and inspire students for STEM careers. We are committed to our educational pipeline from K-16 and beyond.

Our top philanthropic priority is to support Science, Technology, Engineering and Math (STEM) education. We support programs that target young people, particularly girls and young women, underrepresented in STEM fields. Our primary focus and outreach is on our two pillar STEM education programs: *FIRST* (For Inspiration and Recognition of Science and Technology) and Project Lead the Way (PLTW). Rockwell Automation has been a *FIRST* Strategic Partner since 2006. Last season Rockwell Automation sponsored over 150 *FIRST* teams as well as local and global tournaments.

Here in Ohio, Rockwell Automation is committed to the success of the *FIRST* Program. Rockwell Automation has hosted *FIRST* workshops at our Landerhaven office in Mayfield Heights, Ohio annually since 2009. Our employees are encouraged to volunteer their time as *FIRST* coaches, mentors, and tournament staff. Rockwell Automation sponsors the Buckeye FRC Tournament, the Cleveland FTC Tournament, the Ohio FLL State tournament, the University of Akron FLL District tournament, as well as a number of Ohio regional FLL tournaments.

FIRST gives students a real world educational experience that is both fun and rewarding. An investment by the state of Ohio in OhioFIRST is an investment in the future of Ohio's workforce.

Best Regards,

A handwritten signature in black ink, appearing to be "MR", with a long horizontal line extending to the right.

Michael Rudder
Rockwell Automation
Mayfield Heights *FIRST* Lead

To whom it may concern:

February 10, 2015

Alexander & Associates has been a supporter of the FIRST (For Inspiration and Recognition of Science and Technology) robotics program for several years. We have been a sponsor of the Lakota East High School team for over 6 years and we have been a sponsor for the Queen City Regional Tournament for the past 5 years. Several of our employees are active in the FIRST as coaches, mentors, and a few have served as judges at the events. One of our employees was once a member of a FIRST Robotics team, went on to Ohio State's Engineering School and now works at Alexander & Associates as an Electrical Engineer. There are countless success stories of the young people who have participated in this program.

I have served as a coach for a FIRST team the past 2 years and can attest to the skills the students get as a result. They learn problem solving, teamwork, presentation skills, and many other skills that will be helpful to them in their future, in addition to the science and technology skills they obtain from building the robots and participating in the competitions.

We feel the investment in the future of our young people in the state of Ohio is well worth the time and money. We strongly recommend that the state assist in funding the OhioFIRST non-profit volunteer organization.

Sincerely,

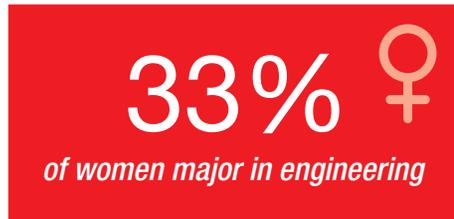
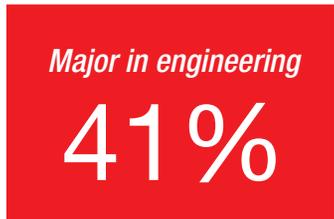


Tom Rowe
Director
Alexander & Associates Co.

FIRST® IMPACT

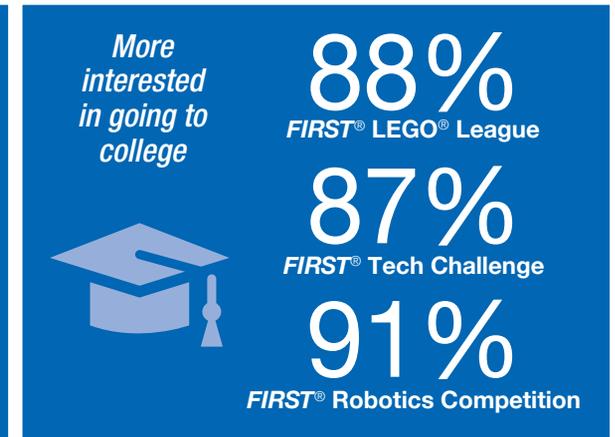
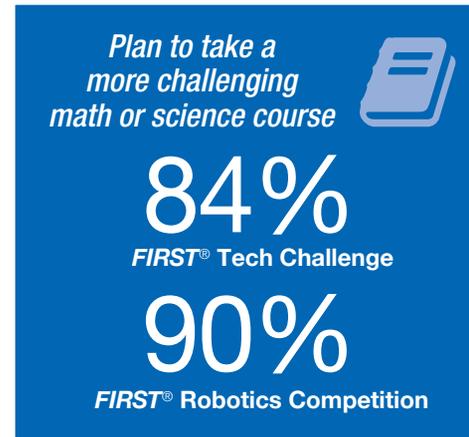
10 years of evaluation data indicates that with participation in **FIRST®**, team members are:

STEM MAJOR CITED BY FIRST PARTICIPANTS



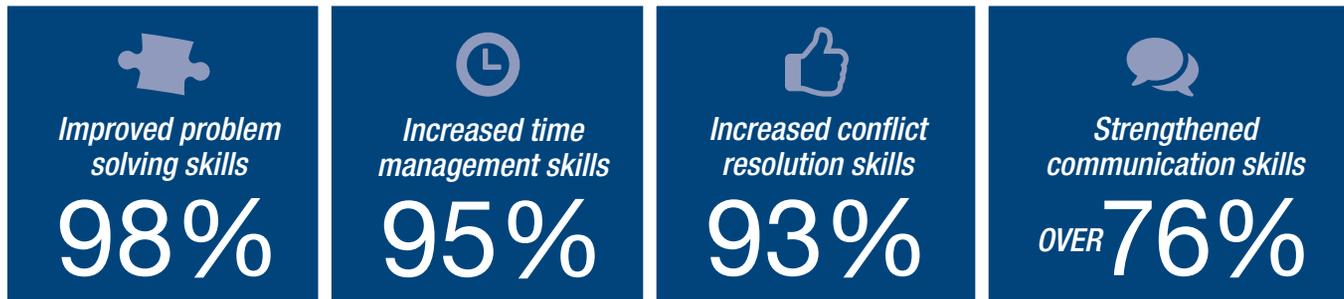
Source: Brandeis University, 2005 Evaluation of FIRST® Robotics Competition (FRC®) Alumni

SCHOOL ENGAGEMENT INCREASES FOR FIRST PARTICIPANTS



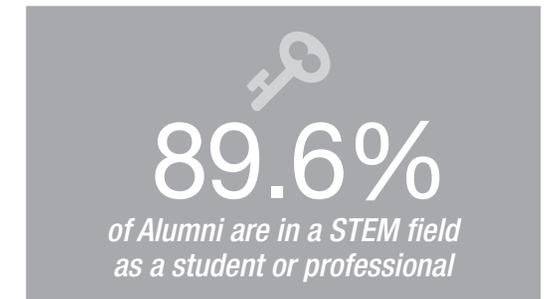
Source: Brandeis University, 2011 FIRST® Tech Challenge (FTC®) – FIRST® Robotics Competition Evaluation and 2013 FIRST® LEGO® League (FLL®) Evaluation

21ST CENTURY WORK-LIFE SKILLS GAINED BY FIRST PARTICIPANTS



Source: Brandeis University, 2011 FIRST® Tech Challenge – FIRST® Robotics Competition Evaluation and 2013 FIRST® LEGO® League Evaluation

FIRST ALUMNI IN STEM CAREERS



Source: FIRST, 2011 Survey of FIRST® Robotics Competition and FIRST® Tech Challenge Alumni



FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY

WWW.USFIRST.ORG

_____ moved to amend as follows:

1 Between lines 75695a and 75696, insert:

2 "GRF 200597 Education Program Support \$2,000,000 \$2,000,000"

3 In line 75696, add \$2,000,000 to each fiscal year

4 In line 75757, add \$2,000,000 to each fiscal year

5 Between lines 77048 and 77049, insert:

6 "EDUCATION PROGRAM SUPPORT

7 The foregoing appropriation item 200597, Education Program
8 Support, shall be distributed to Dublin City Schools. Dublin
9 City Schools shall serve as the fiscal agent and shall award
10 grants associated with the OhioFIRST Grants Program on behalf of
11 OhioFIRST, a program of the PAST Foundation, a nonprofit
12 organization.

13 Of the foregoing appropriation item 200597, Education
14 Program Support, up to three per cent in each fiscal year may be
15 used by Dublin City Schools to fiscally administer the program.
16 Use of administrative funds shall be limited to fiscal
17 management and reporting on program compliance.

18 Of the foregoing appropriation item 200597, Education
19 Program Support, up to \$50,000 in each fiscal year may be used
20 by the Dublin City Schools, in partnership with OhioFIRST, to

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21 operate regional or statewide competitions associated with the
22 program. These funds shall not be considered administrative in
23 nature.

24 Of the foregoing appropriation item 200597, up to five per
25 cent in each fiscal year may be used by Dublin City Schools, in
26 partnership with OhioFIRST, to implement the design and
27 development of a grant application process, criteria for
28 selection, recruitment of teams, and team training; to develop a
29 program timeline; and to promote and develop regional and
30 statewide robotics events and sustainable infrastructure to
31 ensure program success.

32 The remainder of appropriation item 200597, shall be used
33 by Dublin City Schools, in partnership with OhioFIRST, to make
34 the following awards to eligible public schools, including
35 school districts, community schools, STEM schools, and college
36 preparatory boarding schools:

37 (1) Up to \$1,500 to FIRST Technology Challenge teams
38 comprised of students in grades seven through twelve;

39 (2) Up to \$5,000 in matching funds to FIRST Robotics
40 Competition teams that were in existence on or prior to June 30
41 of the previous fiscal year, and are comprised of high school
42 students;

43 (3) Up to \$7,500 in matching funds to FIRST Robotics
44 Competition teams that were not in existence on or prior to June
45 30 of the previous fiscal year;

46 (4) Up to \$500 to FIRST Lego League teams that were not in
47 existence on or prior to June 30 of the previous fiscal year and
48 are comprised of students in grades four through eight;

49 (5) Up to \$100 to Junior FIRST Lego League teams that were
50 not in existence on or prior to June 30 of the previous fiscal
51 year and are comprised of students in kindergarten through grade
52 three.

53 Of these awards, up to \$1,500 per year may be used to pay
54 salaries or stipends for coaches of or advisors to participating
55 teams.

56 In addition to these awards, supplemental grants of up to
57 \$1,500 per team, with no matching funds required, may be awarded
58 to teams with demonstrated economic hardship, as determined by
59 Dublin City Schools in partnership with OhioFIRST.

60 An amount equal to the unexpended, unencumbered portion of
61 the foregoing appropriation item 200597, Education Program
62 Support, at the end of fiscal year 2016 is hereby reappropriated
63 for the same purpose for fiscal year 2017.

64 It is the intent of this appropriation to implement funds
65 fairly and equitably across the state in the six JobsOhio
66 regions."

67 The motion was _____ agreed to.

68

SYNOPSIS

69

Department of Education

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Sections 263.10 and 263.280

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Establishes GRF appropriation item 200597, Education Program Support, with an appropriation of \$2,000,000 in each fiscal year and allocates that amount to support the OhioFIRST Grant Program, to be administered by Dublin City Schools in partnership with OhioFIRST, a program of the PAST Foundation, a nonprofit organization.

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Earmarks up to three per cent of the appropriation to be used by Dublin City Schools to fiscally administer the program.

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Earmarks up to five per cent of the appropriation to be used to develop and implement the OhioFIRST Grant Program.

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Earmarks up to \$50,000 in each fiscal year to be used by Dublin City Schools, in partnership with OhioFIRST, to operate regional or statewide competitions associated with the program.

84

85

Earmarks the remainder of the appropriation to provide grant awards to teams participating in the program.

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Declares the intent of the appropriation is to implement funds fairly and equitably across the state in the six JobsOhio regions.