In a biennial survey, members of the National Fluid Power Association (NFPA) consistently rank the recruitment of a skilled workforce as the most challenging issue their companies face. This is likely because not enough technical colleges or universities are teaching hydraulics and pneumatics, nor preparing their students for careers in the fluid power industry.

As a result, NFPA has identified growing the fluid power workforce as one of its primary strategic priorities. It is central to its mission of strengthening the fluid power industry. NFPA seeks to increase the number of technical college and university students educated in fluid power, and to connect them to jobs in our industry.

The NFPA Education and Technology Foundation is a tax-exempt, charitable organization, affiliated with NFPA, that is dedicated to meeting this workforce development need. Through the generous support of our donors, we are:

- Creating more educated fluid power technicians, by funding student outreach and education programs, designed to create a pathway into the fluid power industry; and
- Creating more educated fluid power engineers, by funding research and education programs, designed to better engage academic faculty in the teaching of fluid power.

Because of your support, our programs are helping to change the talent pool available to our industry. More young people are aware of the fluid power industry. More 2-year technical college and 4-year university graduates have specific training in fluid power. More universities have research facilities and education programs focused on fluid power. And more partnerships between these schools and our industry are increasing access to highly talented candidates.

This is truly our mission—yours and ours—and it is working. Your donations will make sure it works for many years to come.

Best Regards,

Eric Lanke
President and CEO
NFPA Education and Technology Foundation
YOUR GIFTS AT WORK

Creating More Educated Fluid Power Technicians

To create more fluid power-educated Technical College graduates, the NFPA and the NFPA Foundation conduct a number of student outreach and education programs, designed to create a pathway into the fluid power industry. We are building a series of programs that first introduce fluid power in middle schools, then provide fluid power educational experiences in high schools, then fluid power degrees and certificates in tech schools, and finally connections to jobs in the fluid power industry.

Many of these programs are now being organized under our FAMTEN initiative, also known as the Fast Track to Fluid Power. FAMTEN, or “Fast Track,” is a workforce development pathway that connects local technical colleges with industry partners and high school teachers. The network creates awareness and interest in fluid power and leads students along a path that leads to careers in our industry.

Outreach and Education Programs Building a Pathway into the Fluid Power Industry

FLUID POWER ACTIONChallenge

Engages thousands of middle school students in learning about and having fun with fluid power. It raises awareness among students, educators, and parents. Industry partners serve as coaches and judges.

FAST TRACK TECHNICAL COLLEGES

Are each equipped with fluid power lab equipment and curriculum. They teach real-world fluid power and generate interest in fluid power careers. Industry partners visit the schools frequently and provide mentorship and career encouragement.

FLUID POWER SCHOLARSHIPS

A variety of scholarships are offered to graduating high school students in order to pursue fluid power degrees or certificates at designated technical colleges and universities. Industry partners serve on the scholarship review committee that makes funding decisions.

FAST TRACK HIGH SCHOOLS

Are each equipped with fluid power lab equipment and curriculum. They teach real-world fluid power and generate interest in fluid power careers. Industry partners serve on the scholarship review committee that makes funding decisions.

FLUID POWER ACTION CHALLENGE

Engages thousands of middle school students in learning about and having fun with fluid power. It raises awareness among students, educators, and parents. Industry partners serve as coaches and judges.

30 NFPA member companies and education partners from across the country have been recognized as Fluid Power Action Challenge Champions for their efforts in organizing and running Fluid Power Action Challenge events in their local communities. In doing so, they have not only made serious investments of both time and money, but have also helped spread information about our industry and reaped the benefits that come with connecting their organizations to the schools and science classrooms where the industry’s future employees are learning fluid power for the first time. These Fluid Power Action Challenge Champions are:

- Bennett Mills Middle School
- 2 annual events, engaging 80 total students
- Caterpillar
- 4 annual events, engaging 273 total students
- Cleveland Community College
- 5 annual events, engaging 173 total students
- Cooper Middle School
- 2 annual events, engaging 122 total students
- Daman Products Company
- 9 annual events, engaging 815 total students
- Distrol Fluid Products
- 50 annual events, engaging 2,388 total students
- Eisenhower Junior High
- 2 annual events, engaging 36 total students
- Florida Technology Student Association
- 2 events, engaging 55 total students
- FORME America
- 4 annual events, engaging 268 total students
- Georgia Tech University
- 2 annual events, engaging 136 total students
- Gulliver
- 1 annual event, engaging 90 total students
- Husco and Waulesha STEM Academy
- 4 annual events, engaging 323 total students
- HydroTech
- 1 annual event, engaging 20 total students
- Jerling Middle School
- 3 annual events, engaging 572 total students
- Komatsu Mining Corp Group
- 2 annual events, engaging 96 total students
- LonaStar Community College
- 1 annual event, engaging 36 total students
- Master Pneumatic
- 5 annual events, engaging 692 total students
- Mequon School District
- 1 annual event, engaging 36 total students
- Micromatic
- 1 annual event, engaging 20 total students
- Milwaukee School of Engineering
- 11 annual events, engaging 1,106 total students
- Parker Hannifin
- 2 annual events, engaging 66 total students
- Pennsylvania Small Business Education Fund
- 5 annual events, engaging 60 total students
- Price Engineering
- 4 annual events, engaging 472 total students
- Purdue University
- 5 annual events, engaging 276 total students
- University of Minnesota
- 5 annual events, engaging 392 total students
- Triton Girls Summer Camp
- 2 annual events, engaging 80 total students
- Wajans Supply Company
- 5 annual events, engaging 876 total students
- SMC Business Councils
- 1 annual event, engaging 112 total students
- Valley View Junior High School
- 1 annual event, engaging 54 total students

In total, our Fluid Power Action Challenge Champions have organized 106 events impacting 10,306 students.
As each “FAMTEN: Fast Track to Fluid Power” program comes online in communities around the country, the NFPA Foundation provides grants so area high schools can purchase the fluid power training platforms they need to offer targeted fluid power education to their students.

In our 2018-19 fiscal year, the first Fast Track Technical College was established at Waukesha County Technical College (WCTC) in suburban Milwaukee, Wisconsin. Eight local high schools signed on as part of that Fast Track network, and are now teaching fluid power to their students:

- Brookfield Central High School
- Hamilton High School
- Hartland Arrowhead High School
- Kettle Moraine High School
- Menomonee Falls High School
- New Berlin Eisenhower High School
- New Berlin West High School
- Oconomowoc High School

WCTC, as the affiliated Fast Track Technical College, provided training to the teachers in these high schools so that they can more effectively teach the fluid power curriculum associated with their chosen training platform. As a result, 155 high school students received hands-on instruction in hydraulics and pneumatics.

In addition, members of our industry donor coalition, who are helping to support these activities and the growth of future Fast Track networks, are visiting the high school classrooms, and offering mentorship and information on careers in fluid power. WCTC’s industry partners include:

- FORCE America
- Husco
- Poclain Hydraulics
- Price Engineering
- SunSource

As a result, five of the students have expressed interest in continuing their fluid power education at WCTC following their high school graduation. This is a first initial sign that the Fast Track pathway is working, leading students into fluid power careers.
FLUID POWER SCHOLARSHIPS
15 Scholarships Awarded to Further Fluid Power Education

Fluid Power Scholarships are offered to graduating high school students in order to pursue fluid power degrees or certificates at designated technical colleges and universities. Thanks to a transfer of assets from the now-defunct Fluid Power Educational Foundation, and an on-going series of annual gifts from the International Fluid Power Society, the NFPA Foundation has set up a dedicated scholarship fund that has already awarded thirteen $2,000 scholarships to students interested in studying fluid power at one of our education partner institutions.

2018-19 Fluid Power Scholarship Awardees:

- Brendon Eminger
  Arkansas State University
  Jonesboro, AR
  (Robert Mackey Memorial Award)

- Robert German
  Hiram College, Norco, CA

- James Gile
  Rosedale Technical College, Pittsburgh, PA

- Michael Kaestel
  SUNY Cobleskill, Cobleskill, NY

- Ivan Karpich
  University of Minnesota, Minneapolis, MN
  (Raymond F. Hanley Memorial Award)

- Katherine Larson
  Iowa State University, Ames, IA

- Macumba Manga
  Southeast Community College, Milford, NE

- Connor Parrish
  Oklahoma State University, Stillwater, OK

- Joshua Plunkett
  Iowa Tech Community College, Columbus, IN

- Allisson Potts
  College of Central Florida, Ocala, FL

- Thomas Wallace
  Texas A&M University, College Station, TX

- Brandon Waltz
  Minnesota West Community & Technical College, Granite Falls, MN

- Christian Womer
  Minnesota State University, Mankato, MN

STUDENT TESTIMONIALS:

- “The Fluid Power Scholarship has allowed me to continue my education in agricultural equipment technology. By pursuing this major, I will strive to advance my knowledge of fluid power. This means a great deal to me because it will allow me to become a more educated and well-rounded technician.”

- “Winning this fluid power scholarship will assist me in finishing my studies within my major, especially my mechanical and lab-based senior year classes. This scholarship also lessens the overall burden of my student loans, which I thoroughly appreciate. Finally, it also satisfies that what I learned in my fluid power class truly was worthwhile and will be beneficial knowledge to have as I join the workforce.”

Industry partners serve on the scholarship review committee that makes funding decisions.

FLUID POWER ROBOTICS CHALLENGE

The Fluid Power Robotics Challenge is a scholarship program that launched with the 2016-17 school year. In collaboration with FIRST Robotics and the National Robotics League (NRL), each year the NFPA Foundation offers one merit-based scholarship to a high school student using fluid power in their robot design. The scholarship, set at $10,000 per year for up to four years, may be utilized for an Engineering course of study at any United States tech school/college or university that holds accredited status.

The goal of the Fluid Power Robotics Challenge is to bring awareness of fluid power options in robotics to high school students and to stimulate increased use of fluid power products in the FIRST and NRL competitions. In our third year, 7% applications were received for our scholarship.

FIRST Robotics has reported that the number of teams using fluid power in their robot has increased from 2,035 last year to 2,659 this year, an increase of more than 30%. Using fluid power in their robot has increased from 2,035 last year to 2,659 this year, an increase of more than 30%.

FIRST Track Technical Colleges are schools with a 2-year degree program validated to teach core fluid power competencies. As determined by NFPA’s Tech Education Committee, those core competencies are:

- Read circuit diagrams and understand function of components in fluid power systems
- Specify and size components for fluid power systems (e.g., pumps, valves, cylinders, hoses, filters, reservoirs, accumulators)
- Analyze and troubleshoot problems with fluid power systems
- Program and connect electronic controls for fluid power systems
- Promote safe working conditions with pressured systems

In our 2018-19 fiscal year, the first Fast Track Technical College was established at Waukesha County Technical College (WCTC) in suburban Milwaukee, Wisconsin. Advantages of the fluid power degree program at WCTC are:

- Developing skills in WCTC’s state-of-the-art Terry Lutz Integrated Manufacturing Center.
- Hands-on training includes programming state-of-the-art equipment.
- Gaining experience integrating the robots with manufacturing processes such as welding and machining.
- Applying and reinforcing skills in a structured off-campus internship site.

In its first year of operation, the fluid power degree program at WCTC provided advanced-level training to 205 students. Those students were supported by the coalition of industry partners, who actively engage to provide internship and employment opportunities. WCTC’s industry coalition includes:

- FORCE America
- Husco
- ProLine Hydraulics
- Price Engineering
- SunSource

TEACHING AND LABORATORY GRANTS

Many more 2-year technical colleges are teaching fluid power to their student bodies as a result of Teaching and Laboratory Grant programs. These grants provide schools with the teaching materials and state-of-the-art teaching laboratories that are needed to embed fluid power into their training curriculum.

FAST TRACK TECHNICAL COLLEGES
Connecting Tech School Grads to Fluid Power

To date, 8 schools have received Teaching Grants and 9 schools have received Laboratory Grants.

TEACHING GRANTS

- Central Community College
  Grand Island, NE

- Cleveland Community College
  Shelby, NC

- Hennepin Technical College
  Eden Prairie, MN

- Ivy Tech Community College
  Columbus, IN

- Kaskaskia College
  Centralk, IL

- Texas State Technical College
  Waco, TX

- Triton College
  River Grove, IL

- Vernon College
  Vernon, TX

LABORATORY GRANTS

- Angelina College
  Lufkin, TX

- Central Community College
  Grand Island, NE

- Cleveland Community College
  Shelby, NC

- Eastern Iowa Community College
  Davenport, IA

- Hennepin Technical College
  Eden Prairie, MN

- Macomb Community College
  Warren, MI

- Marshalltown Community College
  Marshalltown, IA

- South Central College
  North Mankato, MN

- Triton College
  River Grove, IL

As a result of these investments, more than 3,400 students are taught fluid power each and every year.
Creating More Educated Fluid Power Engineers

Research and Education Programs Creating Educated Fluid Power Engineers

RESEARCH SUPPLEMENTS
Provide funds to academic faculty with fluid power research grants to facilitate their presentation and at the participation of their graduate students in designated industry conferences and research summits.

EDUCATION GRANTS
Allow academic faculty to either develop or acquire the necessary educational tools or resources to teach validated fluid power curriculum in their undergraduate engineering programs.

FLUID POWER VEHICLE CHALLENGE
Is a design/build competition that embeds in the capstone design course of participating universities. It teaches hands-on fluid power and directs students to jobs in the fluid power industry.

• Support an industry/academic forum where research and education topics in fluid power can be explored and acted on for mutual benefit.
• Support the careers of current and future academic faculty who are and who will be in a position to teach fluid power to undergraduate engineering students.

In our 2018-19 fiscal year, we awarded our first ten Research Supplements to the following university faculty members:

- Thomas Chasa of the University of Minnesota for the project “High Efficiency Hydraulic Pump-Motors Employing Partial Stroke Piston Pressurization”
- Tequila Harris of the Georgia Institute of Technology for the project, “Science of Pattern Coating onto Heterogeneous Surfaces Using a Hybrid Tool”
- Pierre Li of the University of Minnesota for the project “Liquid Piston Gas Compression/Expansion for Compressed Air Energy Storage (CAES) and CO2 Sequestration”
- Ashlie Martin of the University of California at Merced for the project: “Polymer-Enhanced Fluid Effects on Mechanical Efficiency of Hydraulic Pumps”
- Paul Michael of the Milwaukee School of Engineering for the project, “Polymer-Enhanced Fluid Effects on Mechanical Efficiency of Hydraulic Pumps”
- Eric Severson of the University of Wisconsin for the project “Seamless Electric to Hydraulic Conversion”
- Zongxuan Sun of the University of Minnesota for the project “Understanding the Transient Nature of Wind Turbine Response to Create Advanced Controls to Improve the Efficiency of a Hydraulic Driven Wind Turbine”
- Kim Stelson of the University of Minnesota for the project “Modeling and Optimization of Trajectory-Based HCCI Combustion”
- Andrea Vacca of Purdue University for the project “Individually Electro-Hydraulic Drives for Off-Road Vehicles”
- James Van de Ven of the University of Minnesota for the project “Efficient, Compact, and Smooth Variable Propulsion Motor”

These research projects independently represent more than $4.9 million in funding from a variety of organizations, including the U.S. Department of Energy, the National Science Foundation, and the Center for Compact and Efficient Fluid Power (CCEFP). They are an excellent sample of the growing body of fluid power research being funded by the federal government and other research organizations.

The research supplements from the NFPA Foundation provide travel support so that each faculty member and one of their graduate students can attend and present their research at a series of designated industry conferences and research summits. In our 2018-19 fiscal year, the designated conferences were the October 2018 and June 2019 summits of the CCEFP.

RESEARCH GRANTS
In addition to our Research Supplements, the NFPA Foundation has also funded individual pre-competitive research projects designed to connect graduate students to the study of fluid power and expand the capabilities of their host institutions to research and teach fluid power.

To date, 7 universities have received 14 of these research grants.

- Iowa State University
  • Dielectric Spectroscopic Sensor Development for Hydraulic Fluid Contaminant Detection
  • An Investigation of Dielectric Spectroscopic Contamination Sensing in a Compressed Air Stream

- Marquette University
  • Efficient, Integrated, Freeform Flexible Hydraulic Actuators

- Milwaukee School of Engineering
  • Simulators, Rheology, and Efficiency of Polymer Enhanced Fluids (joint project with the University of California at Merced)

- Purdue University
  • Design, Simulation and Control of Hydraulic System Topographies with Integrated Energy Recovery
  • Control and Prognostics of Electro-Hydraulic Machines
  • Four-Quadrant Multi-Fluid Pump/Motor
  • Investigation of Noise Transmission through Pump Casing

- University of Illinois at Urbana-Champaign
  • Portable Pneumatically Powered Orthoses

- University of Minnesota
  • Free Piston Engine Based Off-Road Vehicles
  • Hybrid MEMS Proportional Fluid Control Valve
  • Variable AC Hydric Pump/Motor (joint project with Vanderbilt University)

- Vanderbilt University
  • Pneumatic Exhaust Gas Recovery
  • Controlled Stirling Power Unit

Through these research projects, the NFPA Foundation is engaging current and helping to build the careers of future academic faculty who will be in a position to teach fluid power to thousands of undergraduate engineers on their campuses.
EDUCATION GRANTS

7,500+ Undergraduate Students Taught Fluid Power Each Year

Curriculum Grants allow academic faculty to either develop or acquire the necessary educational tools or resources to teach validated fluid power curriculum in their undergraduate engineering programs. As determined by NFPA’s University Education Committee, the validated curriculum is designed to teach at least one of the following core competencies:

- Understand fluid power benefits and limitations
- Conceptual and theoretical understanding of fluid power laws and principles (including energy transfer and power efficiency)
- Understand fluid power components and circuits
- Understand machine level requirements and translate into fluid power system requirements
- Apply design, simulation and analysis tools to fluid power components and systems
- Appropriately size components in fluid power systems
- Integrate sensing and electronic control functions with fluid power components and systems
- Cite hands-on experience with fluid power components and systems
- Inspect, analyze and develop corrective action for product failure

A variety of different funding programs support this model curriculum. To date, 16 schools have received teaching grants, 2 schools have received laboratory grants, and 4 schools have received curriculum grants.

TEACHING GRANTS

- Georgia Institute of Technology
  Atlanta, GA
- Illinois Institute of Technology
  Chicago, IL
- Iowa State University
  Ames, IA
- Lawrence Technological University
  Southfield, MI
- Marquette University
  Milwaukee, WI
- Massachusetts Institute of Technology
  Cambridge, MA
- Milwaukee School of Engineering
  Milwaukee, WI
- Montana State University
  Bozeman, MT
- Purdue University
  West Lafayette, IN
- Rochester Institute of Technology
  Rochester, NY
- University of Illinois at Chicago
  Chicago, IL
- University of Illinois at Urbana-Champaign
  Urbana-Champaign, IL
- University of Minnesota
  Minneapolis, MN
- Western Michigan University
  Kalamazoo, MI
- Western New England University
  Springfield, MA
- Worcester Polytechnic Institute
  Worcester, MA

LABORATORY GRANTS

- Milwaukee School of Engineering
  Milwaukee, WI
- Western Michigan University
  Kalamazoo, MI

CURRICULUM GRANTS

- Lawrence Technological University
  Southfield, MI
- Ohio University
  Athens, OH
- University of Missouri
  Columbia, MO
- Western Michigan University
  Kalamazoo, MI

Each grant creates curriculum that facilitates the teaching of fluid power to dozens or hundreds of students on each campus.

At last count, NFPA’s 4-year university school education partners collectively report teaching fluid power to more than 7,500 students.

FLUID POWER CAREERS PORTAL

The Place for Students and Employers to Find Each Other

NFPA’s Fluid Power Careers Portal is a tool designed to provide students being taught fluid power with information about job openings, employment statistics and scholarship opportunities. Companies that are at least Bronze-level donors in our Pascal Society—whose funding is critical if we are to continue the outreach and education programs that result in these fluid power candidates—can use the portal to post their available positions.

The Careers Portal is promoted heavily to university and technical college students. Since the site was launched in 2016, the posted job listings have been viewed over 4,000 times.
Student teams from 15 universities participated in the third year of the NFPA Vehicle Challenge:

- California Polytechnic State University
  San Luis Obispo, CA
- Cleveland State University
  Cleveland, OH
- Colorado State University
  Fort Collins, CO
- Iowa State University
  Ames, IA
- Kennesaw State University
  Marietta, GA
- Montana State University
  Bozeman, MT
- Murray State University
  Murray, KY
- Purdue University
  West Lafayette, IN
- Purdue University Northwest
  Hammond, IN
- University of Akron
  Akron, OH
- University of Cincinnati
  Cincinnati, OH
- University of Denver
  Denver, CO
- University of Utah
  Salt Lake City, UT
- West Virginia University Institute of Technology
  Morgantown, WV
- Western Michigan University
  Kalamazoo, MI

The team from Cleveland State University won the overall competition, with teams from multiple universities placing competitively in the program’s other award categories, including best presentation, best design, best workmanship, and the program’s three head-to-head competitions: a sprint race, and efficiency and endurance challenges.

Additional support for this year’s program was provided by:

- Bimba Manufacturing (as part of IMI Precision Engineering), event host
- Lubefitch, the program’s official fluid supplier
- Parker Hannifin
- SunSource/Eaton Corporation/Source Fluid Power, the program’s official parts suppliers

Many student participants admitted that the Vehicle Challenge was their only exposure to fluid power in their four-year engineering curriculum, greatly underscoring the need for this program. This year, the Vehicle Challenge again achieved all four of its key objectives:

- Stimulate education in practical hydraulics, pneumatics, and sustainable energy devices for motion control.
- Provide students with experience in real world engineering under a strict timeline of designing, simulating, ordering, building, testing and demonstrating their designs.
- Stimulate innovative thinking for designing and testing potential new technologies or concepts integrated into a vehicle platform.
- Provide an industry recruitment opportunity for high potential engineering seniors by engaging directly with practitioners in the field.

**FLUID POWER VEHICLE CHALLENGE COMMUNITY**

The Fluid Power Vehicle Challenge Community is the volunteer structure tasked with mentoring, coaching, and judging the student teams participating in the Vehicle Challenge. Its membership includes major donors to the NFPA Foundation, including those at the Gold and Silver levels of the Pascal Society. Fourteen companies participated in the community’s year-long mentoring program or sent representatives to the final event to act as competition judges and to meet the student participants in person:

- Bimba Manufacturing
- Danfoss
- Dura-Bar
- FORCE America Inc.
- Gates
- Husco
- HydraForce
- IMI Precision Engineering
- Iowa Fluid Power
- Trelleborg Sealing Solutions
- Parker Hannifin
- Source Fluid Power
- SunSource
- Woodward

As a result of these interactions, several Vehicle Challenge students have been hired by companies in our industry network, greatly enhancing the value of the program to industry participants.
The Pascal Society

The Pascal Society is the NFPA Foundation’s annual giving society that has raised more than $3.1 million for fluid power outreach, education, and research programs. Pascal Society funds support the full range of Foundation programs highlighted in this report. Pascal Society donors combine their financial and volunteer contributions in one concerted effort, developing the resources, tools, and people needed to meet the future technology and workforce needs of the U.S. fluid power industry.

Pascal Society Donors as of June 30, 2019

GOLD DONORS
Danfoss
Enfield Technologies
International Fluid Power Society
IMI Precision Engineering
Iowa Fluid Power
Parker Hannifin
IMI Precision Engineering
Linde Hydraulics
Lubrizol
Main Manufacturing Products
Micromatic
Moseys Production Machinists
Muncie Power Products
National Tube Supply
Orange Seal
PARTsolutions
ROSS Controls
Schrabmz
Stauff Corporation
Steelhead Composites
Sun Hydraulics
Walvoil Fluid Power
Wandfluh of America
Yates Industries

SILVER DONORS
Bosch Rexroth
Clippard Instrument Laboratory
Deltrol Fluid Products
Evonic Oil Additives
FORCE America
Gates
Moog
OEM Controls
Poclain Hydraulics
Price Engineering
Quality Control Corporation
Swiss Automation
Trelleborg Sealing Solutions
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Hydraulics & Pneumatics Magazine
Lehigh Fluid Power
Linde Hydraulics
Lubrizol
Main Manufacturing Products
Micromatic
Moseys Production Machinists
Muncie Power Products
National Tube Supply
Orange Seal
PARTsolutions
ROSS Controls
Schmalz
Stauff Corporation
Steelhead Composites
Sun Hydraulics
Walvoil Fluid Power
Wandfluh of America
Yates Industries
LEGACY BUILDERS

The NFPA Education and Technology Foundation extends gratitude to the many generous donors who share our mission of meeting the workforce development needs of the U.S. fluid power industry.

The following organizations have achieved Legacy Builder status—cumulative giving of $25,000 of more—as of our last recognition year, ending April 30, 2019:

CLASS OF 2019
- Clippard Instrument Laboratory
- Festo
- Hitachi
- Iowa Fluid Power
- OEM Controls
- Trelleborg Sealing Solutions

CLASS OF 2018
- FORCE America
- Husco
- International Fluid Power Society
- Quality Control Corporation

CLASS OF 2017
- Linde Hydraulics
- Lubrotool
- Proportion Air
- Woodward

CLASS OF 2016
- Altron Chemical Corporation
- Bobcat Company
- Chevron
- Donaldson Company
- Evonik Oil Additives USA
- ExxonMobil
- HYDAC Technology Corporation / Schroeder Industries LLC
- Hydra-Power Systems
- Hydraulics
- Netshape Technologies
- Procan Hydraulics

CLASS OF 2015
- CSI Industrial
- Fall Corporation
- Moog

CLASS OF 2014
- Danfoss
- Eaton
- Gates
- ROSS Controls

CLASS OF 2013
- Bimba Manufacturing Company
- Bosch Rexroth
- Caterpillar
- Delroy Fluid Products
- Parker Hannifin Corporation

CLASS OF 2012
- Enfield Technologies

CLASS OF 2010
- Sun Hydraulics

THANK YOU DONORS

The NFPA Education and Technology Foundation extends gratitude to the many generous donors who share our mission of meeting the workforce development needs of the U.S. fluid power industry.

The following individuals and organizations made a donation in our last recognition year—between May 1, 2018 and April 30, 2019:

ACE Controls
Air Logic
Aladco
Alco Manufacturing
Alco Steel
American Iron & Alloys
AMETEK APT
Applied Industrial Technologies
ARGO-HYTOS
ASCOT Numatics
Aubin Peterson of Industrial Hard Chrome
Bailey International
Bimba Manufacturing Company
Bosch Rexroth
Brand Hydraulics
Casappa
Caterpillar
Certified Power
Clippard Instrument Laboratory
Comer Industries
Cross Company
Danman Products Company
Danfoss
Delta Computer Systems
Delta Fluid Products
Denver Hydraulics of National Fluid Power Association
DLH Fluid Power
Dura-Bar
Enfield Technologies
Eric Lauer of National Fluid Power Association
Evonik Oil Additives
Fairfield Manufacturing Company
Faster
Fastest
Festo
Fladraulic Group
FORCE America
Gates
GS Global Resources
HANET Hydraulics NA
Helios Technologies
Henry Kohring
Hitec America
Hofmann Fluid Power
Honda
HYDAC Technology Corporation
Hydraulix
Hydraulic
Hydra-Power Systems
Hydraulix
Hydromatic Components Ltd.
Hydraulics and Pneumatics Magazine
Hydro Extrusion North America
Hydac
Hy-Pro Corporation
Idemitsu Kosan
Immunex
Industrial Hard Chrome
Informa
IntEds
International Fluid Power Society
Iowa Fluid Power
JARP Industries
Jeff Kenney
Jeff Stauft of Hydra-Power Systems
JEM Technical Marketing Company
Kawasaki Precision Machinery
Kevin Kame of Nomack Machine Supply
Kevin Smith of Scott Industrial Systems
KYB Americas
KYB Japan
Lahigh Fluid Power
Linde Hydraulics
Lubrotool
Lynn Bayer of National Fluid Power Association
Main Manufacturing Products
Mark Garrett of Morell Group
Mark Wendel
Master Pneumatic-Detroit
Melissa Blashka of Barksdale Control Products
MPC Seals
Michael King of MPC Seals
Mimatic
Mike Lunderwood of Waldfuhl of America
Mike Toney of Hydrotech
Moog
Mosaic's Production Machinists
Motion Industries
M P Filb USA
Muraki Power Products
National Tube Supply
Nicole Farrell of Fluidyne Fluid Power
OEM Controls
Parker Hannifin
PAM Solutions
Paul Ludwig of Hydro Electronic Devices
Pennwalt Cylinder Company
Penn Hydraulics
Precision Plus
Price Engineering
Price Industries
PSSI Fluid Power
QCC - Quality Control Corporation
R & J Cylinder & Machine
R.M. Wright Company
Randy Hydrick of Flow Dynamics & Automation
Rick Bush of Mimatic
Ron Minton of Hydraulics and Pneumatics Magazine
Rouse Wallace of Kaiser Aluminum Corporation
Rosenboom Machine & Tool
ROSS Controls
Schmalz
Scott Meldeau of IMI Precision Engineering
Stauff Corporation
Steelhead Composites
Stuchl S.P.A.
SunSource
Thomas Magnate USA
Tim Thomas of DMP Solutions
Trelleborg Sealing Solutions
Twin Disc
Ultra Clean Technologies
Walsh Fluid Power
Wallfuhl of America
Wabtec
Wojanis Supply Company
Woodward
Yates Industries

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