



CCEFP VALUE PROPOSITION ELEMENTS FOR INDUSTRY SUPPORTERS

- The Pascal Society, a giving community within the NFPA Education and Technology Foundation, a 501(c)(3) non-profit organization, provides a mechanism for pooled corporate gifts to support fluid power research and workforce development initiatives in the U.S. A portion of these gifts are awarded to the Center for Compact and Efficient Fluid Power (“CCEFP” or “Center”) via a renewable grant agreement used to sponsor pre-competitive research. This approach requires any awarded research institution to agree to a significantly reduced indirect overhead rate.
- Corporate supporters have opportunities to serve on committees to identify the fluid power industry’s pre-competitive research needs, select research projects to address these needs and set the overall CCEFP pre-competitive research strategy. Companies joining at the two highest sponsorship levels get a seat on the CCEFP Industry Engagement Committee (IEC).
 - Companies joining at the highest sponsorship level get a seat on the CCEFP Steering Committee. The committee is charged with establishing, approving and maintaining key CCEFP strategies.
 - The IEC strongly influences the Center’s strategic direction and research focus by having a leadership role in the call for research proposals and in determining which of the submitted proposals are funded.
 - The IEC meets monthly, two of which are face-to-face meetings at the annual Fluid Power Innovation & Research Conference (“FPIRC”) and the Industry/University Engagement Summit (“Summit”). These events offer a broader understanding of the research status, accomplishments and capabilities and interests of the researchers, the university, and serve as an excellent networking opportunity.
 - All corporate supporters are eligible to serve on road-mapping committees to identify the key areas of need for fluid power related pre-competitive research.
- The CCEFP provides regular engagement opportunities between industry and academia. These include FPIRC, Summits, and road-mapping sessions.
 - Participation in Center activities allows sponsors to stay abreast of new technologies and research underway as well as form lasting relationships with key academic researchers and students. These relationships can lead to sponsored research where the company either directly funds research projects of their own definition or collaboratively seeks out government funding with academics on strategically aligned research projects.
 - Sponsors have opportunities to gain competitive insights, advance fluid power research and their business interests by interacting with customers, suppliers and competitors in a manner compliant with US antitrust laws during CCEFP activities.
 - Thought leaders emerge from CCEFP activities. Active participation in the Center provides an opportunity to refine your company’s technology and manufacturing roadmaps. Center-funded projects are an opportunity to significantly increase the “R” in the sponsor company’s R&D budget.
- Sponsorship provides companies with access to CCEFP researchers and a worldwide network of fluid power researchers.
 - The access can help sponsor companies to locate researchers to help them solve important problems through company-funded research.
 - The access can also allow sponsor companies to engage in the teambuilding required for successful procurement of government grants.

- Sponsorship provides an opportunity to interact with a large number of students educated and trained in fluid power technology.
 - o Students are exposed to all facets of fluid power, have systems engineering experience and understand and appreciate the importance of intellectual property.
 - o Access to educated students has the potential to lower hiring costs; leverage opportunities to engage with students before hiring (e.g. internships); and increase the likelihood of a successful and productive hire.
- Sponsors have access to regular Center communications through the NFPA News Hub and the monthly CCEFP Webinar Series.
- Since inception, June 2006, the University of Minnesota has served as the Center headquarters and administration. Partner institutions have been Purdue University, University of Illinois at Urbana-Champaign, Vanderbilt University, Georgia Institute of Technology, North Carolina A&T State University, and Milwaukee School of Engineering. As of June 2016, all U.S. universities are eligible to be CCEFP partners. CCEFP institutions will evolve according to the sponsored research awards.

HAVING AN IMPACT AND MAKING A DIFFERENCE: THE CCEFP BY THE NUMBERS

The “numbers” of the National Science Foundation Engineering Research Center for Compact and Efficient Fluid Power (CCEFP) provide a powerful summary of the impact the Center is having on both fluid power research and education. The information below is drawn from data compiled for the CCEFP Annual Report to the National Science Foundation that was published in April 2016, as well as from previous annual reports.

Measures	2015-2016 Reporting Year	From Center Launch, 6/2006
People of the CCEFP at its seven core universities		
Faculty	29	50
Additional research staff	3	8
Post-doctoral students	1	12
Doctoral students	39	121
Masters students	38	150
Undergraduate students	100	750
Research Experiences for Undergraduates Program (REU)	23	198
Research Experiences for Teachers Program (RET)	0	54
Fluid Power Scholars Program (since '10)	17	68
Inventions and Patents		
Inventions disclosed	2	586
Patent applications filed	3	44
Patents awarded	0	7
Licenses issued	1	6
Technical standards impacted	0	11
Papers and articles		
Articles in peer reviewed journals	10	146
Papers delivered at major conferences	23	353
Articles in the trade press and in trade association newsletters	25	100
CCEFP's influence on curriculum at its seven core universities		
New courses focuses on fluid power (and/or CCEFP research)	2	24
Courses modified to include fluid power content (and/or research)	31	177 (offerings)
New degree minors or minors emphases	0	3
Free-standing or e-learning modules	1	18
Educational outreach and engagement focused on fluid power		
Workshops, short courses or webinars for industry	72	373
	19	329

Innovation-focused workshops, short courses, webinars, seminars, colloquia, invited talks, etc. Outreach on fluid power education and/or research	22	181
Impact on workforce (as of May 2016)		
Percentage of CCEFP alumni are working in a fluid power company, in a fluid power position, or for a user of fluid power		<u>66%</u>
Percentage of Bachelors alumni working in/with fluid power		44%
Percentage of Masters alumni working in/with fluid power		32%
Percentage of PhD alumni working in/with fluid power		21%
Percentage of CCEFP alumni who remain in academia		<u>26%</u>
Percentage of Bachelors alumni remain in academia		32%
Percentage of Masters alumni remain in academia		18%
Percentage of PhD, Post Docs and faculty alumni remain in academia		50%
Percentage of CCEFP alumni conducting other work (military, national research laboratories, other industry, etc.)		8%