Knowledge to Practice:

ACI Foundation Formulates Strategic Plan

In the evolving construction market, technological changes and innovation play an ever-larger role in the built environment. Whereas ACI focuses on consensus-based knowledge, education, and certification, the ACI Foundation continues to focus its effort on driving rapid innovation. Through its investments in people, ideas, and research, the ACI Foundation strives to enhance ACI's vision of "effectively meeting the needs of a changing world."

The ACI Foundation recently embarked on a strategic plan. The vision of the ACI Foundation is a better world through innovative concrete solutions. Its mission is to drive innovation for the enduring success of the concrete industry by leading a collaborative forum that makes and facilitates strategic investments in people, ideas, and research.

The fostering of innovation, both technical and collaborative, provides information for new and improved consensus documents that keep pace with the future of concrete. Visit **www.acifoundation.org** for more information on its strategic plan.

Concrete Research Council Increases Proposal Funding Limit to $50,000; Submittal Process Updated

Since its inception, the ACI Foundation's Concrete Research Council (CRC) has supplied grant funding to various research projects. The CRC recently approved several modifications to its policy for awarding research funding. Previously limited to $10,000 per research project, the most notable modification now allows funding of up to $50,000 per research project to achieve greater impact for the industry. The significant increase in funding was proposed during The Concrete Convention and Exposition in Kansas City, MO, April 12-16, 2015.

To best manage the distribution of funds, a new protocol has been developed that includes the implementation of proposal due dates and a competitive selection process. Proposal requirements and submittal deadlines are available at **www.concreteresearchcouncil.org**.

Snapshot of 2014 CRC Funding

The CRC provided $90,000 in research co-funding in 2014 to various research projects that leveraged into about $1.2 million in research. Among the projects funded, several aligned with the high-strength steel initiative of the ACI Foundation's Strategic Development Council (SDC), which is described in the next section of this report. These projects included:

Have an idea for research that will benefit the concrete industry or support an ACI document or code change? Visit **www.concreteresearchnetwork.org** and fill out an online concrete research need form.

- Defining Structurally Acceptable Properties of High-Strength Steel Bars Through Beam Testing and Archetype Building Benchmark Analyses, Jack Moehle, University of California, Berkeley, Berkeley, CA;
- Defining Structurally Acceptable Properties of High-Strength Steel Bars Through Material and Column Testing, Wassim M. Ghannoum, University of Texas at Austin, Austin, TX;
- Development of Tentative Specification for High-Strength Reinforcing Bar, Conrad Paulson, Wiss Janney Elstner Associates, Inc., Pasadena, CA;
- High-Strength Steel Bars in Reinforced Concrete Walls: Influence of Mechanical Properties of Steel on Deformation Capacity, Andres Lepage, University of Kansas, Lawrence, KS; and
- Setting Bar-Bending Requirements for High-Strength Steel Bars, Wassim M. Ghannoum, University of Texas at Austin, Austin, TX.

Other 2014 projects that the CRC co-funded are:

- Shear Friction of Lightweight Aggregate Concretes, Lesley Sneed, Missouri S&T, Rolla, MO;
- Serviceability Behavior of Reinforced Concrete Discontinuity Regions, Robin Tuchscherer, Northern Arizona University, Flagstaff, AZ;
- Strength and Deformation Capacities of Corner Slab-Column Connections, Min-Yuan Cheng, National Taiwan University of Science and Technology, Taipei, Taiwan; and
- Interaction of Admixtures and its Effect on the Evolution of Thixotropic Breakdown and Recovery of Cementitious Systems, Shiho Kawashima, Columbia University, New York, NY.

Early in 2015, prior to the recent fund modifications, the CRC co-funded the following projects:

- Evaluation and Examination of ACI 347.3R, "Guide to Formed

Ann Daugherty, Director of the ACI Foundation, discusses a recent research proposal from a joint task group of ACI Committees 310, Decorative Concrete, and 308, Curing Concrete, with Larry Rowland and Dave Hoyt at The Concrete Convention and Exposition in Kansas City, MO

Concrete Surfaces," Ward Malisch, American Society of Concrete Contractors, Lebanon, TN. Malisch will rely on the skills of students in the Concrete Industry Management (CIM) Program, who will assist in some of the research tasks; and

- Role of Microbial Induced Calcium Carbonate Precipitation on Corrosion Prevention, Raissa D. Ferron, University of Texas at Austin, Austin, TX.

Visit **www.concreteresearchcouncil.org/Home/Projects** for more information.

High-Strength Reinforcing Steel named an Industry Critical Technology

The SDC facilitates the acceptance of new technology in the concrete industry. There are many new/improved technologies and the resolution of issues/problems confronting the concrete industry which, if accelerated/resolved, can provide significant benefits to the concrete industry, owners, and users. If a technology or resolution of an issue can contribute to growing the concrete industry and affect a broad base within the industry, it has the potential to be considered "industry critical" by the SDC.

Earlier this year, the SDC identified and approved high-strength reinforcing steel as an Industry Critical Technology. The SDC's high-strength steel initiative is geared toward simpler and more efficient reinforced concrete construction by easing reinforcing bar congestion with the use of high-strength steel.

Incorporation of high-strength steel into the ACI 318 Building Code Requirements for Structural Concrete requires extensive code changes and the research to support such changes. The initiative's champion is Mark Perniconi of the Charles Pankow Foundation, which contracted with the Applied Technology Council (ATC). The research product is ATC-115, a roadmap that outlines:

- Use and applications of high-strength reinforcement;
- Development of code change proposals; and
- Adoption of high-strength steel in the code development process.

SDC holds a Technology Forum in the spring and the fall—providing a venue for industry leaders to discuss strategic issues facing the industry and review new technologies. The well-attended SDC Technology Forum #37, held February 26-27, 2015, in St. Louis, MO, focused on:

- The pros and cons of corrosion mitigation techniques and products—how the newly developed "Standard Protocol to Evaluate the Performance of Corrosion Mitigation Technologies in Concrete Repairs" can help public and private owners and designers evaluate corrosion prevention and mitigation strategies for their structures; and
- The technology and code acceptance of high-rise timber—industry experts provided information on the evolving landscape of high-rise timber and its impact on the concrete industry.

SDC Technology Forum #38 will be held October 8-9, 2015, in Farmington Hills, MI. Visit **www.concretesdc.org** for the latest information.

From left, panelists John Lund, Paul Tourney, Jorge Costa, and Jessi Meyer with moderator Peter Emmons (far right), during the SDC Spring Technology Forum in St. Louis, MO, discussing the pros and cons of corrosion mitigation techniques

The SDC provided a $5000 donation to the Concrete Preservation Institute, a worthy program to improve the concrete repair industry through education. Joe Sanders, Chair of the SDC Board of Direction, presented Tanya Komas, Founding Director and President of the Institute, with the check at the Technology Forum #37