



**RMC RESEARCH & EDUCATION FOUNDATION  
ADVISORY COUNCIL ONLINE MEETING  
Via Zoom**

Thursday, April 14, 2022, 11:00 a.m. Eastern

**MINUTES**

**Participants:**

Lars Anderson  
Bruce Blair  
Oliver Brooks  
Hall Chaney  
Teck Chua  
Terry Harris  
Al Innis  
Karthik Obla  
Jeff O'Leary  
Pete Lyons

Tien Peng  
Tony Schlagbaum  
Paul Tennis  
Massimo Toso  
Pierre Villere  
Matt Wood  
Rick Yelton

**Staff:**

Julie Garbini  
Jennifer LeFevre

- I. **WELCOME & ANTITRUST STATEMENT** – Chairman Peter Lyons welcomed Advisory Council members to the online meeting and thanked them for their participation. He said that the meeting would be conducted in strict accordance with the Foundation's Antitrust Statement and all U.S. Antitrust laws.
- II. **APPROVAL OF THE MINUTES** – Mr. Lyons asked if there were any additions or changes to the minutes from the October 13, 2021, online meeting and there were none.

**MOTION APPROVED:** The Advisory Council hereby approves the minutes from the October 13, 2021, meeting.

- III. **PROJECT FUNDING AND MANAGEMENT OVERVIEW**
  - a. Project Payment Schedule and Management System/Measures of Success – Mrs. Garbini noted that included with the materials for this meeting were our Project Payment Schedule and our Measures of Success, which illustrate how we measure the value of project deliverables.
  - b. MIT Concrete Sustainability Hub Update – Mrs. Garbini reported that the Portland Cement Association (PCA), the Foundation's funding partner in the MIT CSHub, gave one-year notice of termination in August, 2021 due to unforeseen financial challenges. However, the indication is that they will come back in at some level, once they have had time to reassess their budget and develop their plans around the Roadmap to Carbon Neutrality. The MIT CSHub is already working on embodied carbon reduction research, as well as the full life-cycle research and tools they have already developed. They are working with RMC and PCA to ensure alignment with the Roadmap implementation, accounting and transparency. Mrs. Garbini reported that the Foundation's Board voted to guarantee continued full funding of the MIT CSHub for the duration of the current

agreement that runs through 2024. She also said that Holcim had made a pledge of \$250K per year through 2024 to assist with continued CSHub funding. Mrs. Garbini reported that the CSHub's annual report for 2021 was released earlier this year and she encouraged everyone to review it. Mrs. Garbini noted that the work taking place at the MIT CSHub continues to align with both PCA's and NRMCA's goals related to buildings, pavements and environmental objectives. She asked if there were any questions on the work taking place at MIT or about funding. There were none.

- c. Other Project Highlights & Coming Deliverables – Mrs. Garbini reported that there are many recently-released deliverables and several slated for release over the next six months. Mrs. Garbini showed several slides highlighting these projects and reminded the group that most items are available from the Foundation's website. One upcoming item is the second edition of the Guide to Concrete Overlays of Asphalt Parking Lots. Mrs. Garbini reminded the group that this project has been extraordinarily successful. She also noted that Jennifer LeFevre recently produced a video on how to use this deliverable. She also reported that the Concrete Strength Model, the revamp of the Concrete Deliverable Professional program, the Skate4Concrete initiative and several projects on which we are partnering with NRMCA.

Mrs. Garbini also noted that the current and future areas of focus for the Foundation that align with NRMCA and PCA are recruitment/workforce issues and carbon neutrality. She asked if there were other recommended areas of focus and no others were mentioned. She asked that the group help keep the conversation on industry priorities going.

- IV. **FINANCIAL STATUS/BUDGET** – Mrs. Garbini reported that the current endowment stands at approximately \$26.5M. She noted that although the stock market is down, the Foundation's investments are doing better than average and are beating the benchmark. Mrs. Garbini noted that, as always, the Advisory Council should consider the value proposition of each project while also keeping in mind the limited budget, given the greater investment in MIT and the investment losses. She asked the group to consider if we can afford the proposal given the value proposition or if it would just be “nice to have” but not urgent.

- V. **PROPOSALS FOR CONSIDERATION**

- a. Project 22-01: ASR Mitigation of Concrete with Multifunctional Nanosilica, \$85,388 over 18 months, submitted by University of Louisville – Mr. Blair remarked that he didn't see how this project could be implemented practically nor did he find the value proposition to be high. Dr. Obla agreed and noted that this issue was being studied already. The rest of the group agreed that the project did not offer enough value and they voted to recommend it for rejection.

**MOTION APPROVED:** To recommend that Project 22-01 be rejected for funding.

- b. Project 22-02: Minimize Shrinkage Cracking of High-Performance Concrete with Internal Curing, \$74,500 over 18 months, submitted by University of Louisville – It was noted that there had been some support of this project in the RES Research Task Group but most felt that it seemed too conceptual and the rest of the group agreed.

**MOTION APPROVED:** To recommend that Project 22-02 be rejected for funding.

- c. Project 22-03: Enhancing Eco-Efficiency of Concrete Using Solid Wastes-Derived Carbon-Negative Supplementary Cementitious Materials, \$150,000 over 24 months, submitted by Missouri University of Science and Technology – Mrs. Garbini noted that the mention of additional funding in the proposal would not reduce the ask to the RMC Foundation, as it just notes the additional funding commitments they have. There was some discussion about the initial proposal being conceptual in

nature and the full proposal not being made available until after the RES Research Task Group had discussed it. It was noted that despite the initial proposal being conceptual, the fact that there were other funders merited additional consideration and Mrs. Garbini noted that the full proposal was included on the online meeting's webpage.

There were some questions about the project and whether some elements of it were feasible. Others in the meeting did not necessarily see the urgency of this project while others also believed that the fly ash industry should be a co-funder of the project as well since the ask of the RMC Foundation was considered high. Mrs. Garbini said there seemed to be enough unanswered questions so she recommended that the group vote to table further discussion until additional details could be gathered and so she could recommend that they seek additional funding partners. Mr. Blair and Dr. Obla said they would reach out to the Research Task Group for review of the full proposal to receive additional feedback.

**MOTION APPROVED:** To table consideration of Project 22-03.

- d. Project 22-04: Rapid Screening of Supplementary Cementitious Materials for Alkali-Silica Reaction Durability, \$50,000 over 12 months, submitted by University of Miami – The RES Research Task Group reviewed this project. While a few members questioned the business value, the majority felt the proposal would be helpful not necessarily because of the new ASR indicator test, but because there is an ongoing effort in ASTM to specify new SCMs such as natural pozzolans, harvested ash, crushed bottom ash, etc. There is also an effort to develop a performance specification for SCMs. The committee wants to do this in two years and the research could be helpful to that effort. There were some concerns about the necessity this project and if the value would be great enough to fund. It was also suggested that more details could be provided in a revised proposal to make the outcomes clearer. The group chose to table consideration of the project.

**MOTION APPROVED:** To table consideration of Project 22-04.

- e. Project 22-05: Regulating Concrete Temperatures with Phase Change Composites, \$100,000 over 12 months, submitted by Iowa State University INTRANS and Diversified Construction Services (DCS) – Mrs. Garbini noted that the Foundation has worked with ISU previously and has a good relationship with them. However, she wondered about the value and urgency of this project. Several questions were brought up by Advisory Council members regarding how the phases change composites would be stored (as a liquid or a gas) and whether this project really provides any value, especially since there are other ways of controlling concrete temperature issues. Considering the relatively big ask of the project, the members voted to recommend the project for rejection.

**MOTION APPROVED:** To recommend that Project 22-05 be rejected for funding.

- f. Project 22-06: A Concrete Strength Model to Optimize Concrete Mixtures – Phase Two, submitted by Ed Dunstan – The group did not feel there was an urgency to Phase Two of this project so voted to recommend it for rejection.

**MOTION APPROVED:** To recommend that Project 22-06 be rejected for funding.

- g. Project 22-07: Concrete Advancement Network Consortium – Mrs. Garbini reported that this project was proposed by four universities that have done great work in the past and includes 10 proposals overall. She said it was unclear what the official ask is but would likely be about \$50,000 per year for five years. Advisory Council members noted that some of the projects included in the preliminary proposal could be good ones to fund and some specifically noted the good researchers

included in the proposal. It was decided to set this proposal aside, rather than to officially table it, and reconsider it when a more formal proposal and specific amount request is forwarded.

- h. Project 22-08: Regional Low Embodied Concrete Mixtures, \$100,000 over 6 months, submitted by the 5 CIM universities with support by Dr. Heather Brown, IMI – Mrs. Garbini noted that this project was forwarded by Dr. Heather Brown, who works for Advisory Council Chairman Pete Lyons. She said that she is working with Dr. Brown to strengthen the proposal and would welcome any feedback to provide to Dr. Brown. She recommended that the project be tabled for now and the members agreed.

**MOTION APPROVED:** To table consideration of Project 22-08.

- i. Project 22-09: Building Insurance Study, \$6,000 in 2022, submitted by Dr. Pieter VanderWerf with co-funding and support by NRMCA – Mrs. Garbini noted that this project comes from the Build With Strength (BWS) team. She noted that a similar study was performed in 2017 but that a lot has changed since then, and the concept is to refresh the information used by the BWS team. NRMCA’s Tien Peng, NRMCA’s Senior Vice President, Sustainability, Codes and Standards, reported that building risk insurance and community property insurance see a significant savings when building with concrete and those statistics are often used by the team regarding one of the benefits to building with concrete. He noted it was advisable to redo the insurance study to keep any changes incorporated in the data. Mrs. Garbini noted that this project could fall under the Foundation’s purview given the benefit it provides regarding resilient construction. Mr. Peng added that insurance risks consider various hazards during construction and that this project did relate specifically to resilience. Mr. Villere noted the reasonable cost of the project, making it a good value and other members agreed.

**MOTION APPROVED:** To recommend that Project 22-09 be approved for funding.

- j. Project 22-10: Transforming the Concrete Delivery Professional Workforce, \$146,400 over 12 months, submitted by MIT – Mrs. Garbini reported that this project comes from MIT and that it is separate from the sustainability work already taking place there. She noted that researchers at MIT have an excellent handle on evaluating automation and supply chain issues. She said that by disrupting the model the industry uses to attract new hires that they could potentially help ease one of the industry’s greatest challenges: the driver shortage. It was very important to the group that the “same old” strategies not be recycled and there was some concern over whether this proposal could really make much of an impact. Mrs. Garbini noted that while the researchers would look at a lot of what the industry has done already in the form of surveys and other data already gathered, the biggest help would come in identification of new ideas, new tech possibilities and help for the industry to fill in the gaps where they are lacking, including information from other industries. There were some concerns about the cost of the proposal though most Council members agreed that the industry needs help in this area so recommended it for approval.

**MOTION APPROVED:** To recommend that Project 22-10 be approved for funding.

- k. Project 22-11: Towards Optimal, Green, and Affordable Concretes: A Case for Autonomous Fabrication, \$50,000 - \$75,000 over 18-24 months, submitted by Dr. MZ Naser, PE, Clemson University – Mrs. Garbini noted that this project was just submitted so the RES Research Task Group had not had a chance to review it. Members noted that it seemed to be a very conceptual proposal and that some companies were already doing this work. There was also a concern that the work could be proprietary in nature. Given the concerns, the group voted to recommend it for rejection.

**MOTION APPROVED:** To recommend that Project 22-11 be rejected for funding.

VI. **OTHER BUSINESS**

Mr. Lyons asked if there was other business and there was none.

VII. **ADJOURNMENT**

Hearing no other business, the meeting was adjourned.

Minutes Respectfully Submitted:

Jennifer LeFevre, Recorder