Prof. Karen Scrivener, Professor at the Construction Materials Laboratory of EPFL, Lausanne, Switzerland, and RILEM member since 1993, became Chair of the Educational Activities Committee of RILEM in 2019. Besides being member of several RILEM Technical Committees (TCs), Prof. Scrivener has also been Cluster Convenor of TAC from 2001 to 2006, Expert of TAC from 2006 to 2011, TC Chair of 267-TRM: Tests for reactivity of supplementary cementitious materials, and of PHC: Performance testing of hydraulic cements. She was elected RILEM Honorary Member in 2019. This interview is to discuss with her the EAC webinar series ROC&TOK. Launched by the end of 2020, this series has proven to be a successful initiative attracting thousands of participants.
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RILEM Implementation Manager (RIM): I have the pleasure today to interview Prof. Karen Scrivener, in her role of Chair of the RILEM Educational Activities Committee (EAC). Good morning, Karen. Let's start from the beginning: what is EAC?

Prof. Karen Scrivener (KS): The Educational Activities Committee of RILEM is a relatively new Standing Committee, joining the Technical Activities Committee (TAC), which approves TCs, and the Development Advisory Committee (DAC). I think it started around 2010. The first activities of EAC were really to approve doctoral courses; as you know, various RILEM members are running doctoral courses around the world. The first function of the EAC was to say "these are courses on a good level", and so give them an endorsement from RILEM. What is nice about the RILEM endorsement of these courses is also the fact that RILEM offers free membership for three years to the people (under 35) attending them.

RIM: I am interviewing you today to talk about the EAC webinar series called "ROC&TOK".
The first event was in Nov 2020, in full COVID pandemic… is it a coincidence?

KS: When the EAC members met in Nanjing, China, in 2019 (*Editor's note: EAC members meet twice a year, at the RILEM Spring Convention and at the RILEM Annual Week*), we said that it would have been nice for the Education Activities Committee to do more things. That was also when I took over as Chair of the committee. Already at that time, it was proposed that we started doing some online webinars; so, we had this in the pipeline, but I think it was the fact that with the pandemic, everybody really got used to do things online. Before that, it was still a bit strange so we were worried we would not get enough people attending. Also, before we started, we wanted to have a good six-month to a year program of webinars, set up to launch. That is how eventually we got everything together and we started in November 2020[1]. I gave the first one; I thought, you know, I should volunteer to start this off.

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[1] *Editor's note: ROC&TOK came about as an abbreviation for RILEM Online Conferences and Transfer of Knowledge, first used for 2 online workshops organized by IIT Madras on Saturday 2 and Saturday 23 May 2020, inspired by the success of the hybrid conference during the 2020 RILEM Spring Convention.*

RIM: What is a ROC&TOK webinar?

KS: A ROC&TOK is an hour-long webinar. We are very strict to keep it firmly within the hour; we have it on the first Thursday of every month and it is at 3 o'clock central European time; this time was chosen because then we had a reasonable chance of catching people in most of the world. It's a bit of a tall ask for anybody on the west coast of the USA, and Australians of course… they really miss out, but I think that apart from that, we get most of them.

RIM: We actually know that is working because we have had people from 95 different countries attending in 2022!

KS: Yes! This is absolutely great! I think it is just fantastic because students from countries where you could never dream of being able to come to an in-person RILEM meeting, attend these talks, absolutely for free. I find that people online are very dynamic. We get lots of questions. It's usually quite hard to bring everything to a close within the hour.

RIM: Was it an easy project to shape?

KS: It took quite a bit of time thinking about the format! We wanted to have all the presentations pre-recorded, partly so we had a backup in case of any Internet problems, but also just to ensure that people really stuck to the time; because if you only have an hour, and you have 30 minutes for the talk and 30 minutes for questions, it is really important people don't go over because that really cuts down on the questions. I think we got a little more confidence as time went on. At the first ones, we were really kind of paranoid and insisted on having everything a couple of weeks before the event, but now we are getting used to it. I think we are getting used to working more online than we were in the past.

RIM: Who is the target of these webinars? Who do the speakers talk to?

KS: When we started, we thought that these webinars could be a way of updating more lecturers; a lot of lecturers are now looking for material to incorporate in their courses, particularly on new topics like sustainability, early-age cracking… everything! We thought that the webinars would be mainly directed to them, but overtime what we found was that the students attend directly (*Editor's note: from a survey of the attendants of the ROC&TOK webinars in 2022, 66% of them are less than 35-year-old*). People from industry attend too. We try to be really flexible because… it's not like there isn't any rule but everybody should be able to take out what they want. I think people are more attending directly for themselves. It is also really nice that we put all the recordings on YouTube (*Editor's note: the playlist of the 25 webinars so far, 19 in English, 2 in Chinese and 2 in Spanish is available here*) so people can go back and look at them. I use them in my lectures: I put the link up when I'm talking about it so it could encourage the students to go and look for themselves. I think that works quite well because, especially during the pandemic, lot of people were looking for educational resources; it was really tough on the students to sit and listen to everything online, and having a bit of variety was a good thing; but we're constantly evolving it! What we do want to have are good speakers! I think we have done well so far. Sometimes there might be a RILEM TC that has done a lot of work, but we don't want somebody just to sort of present a list of papers. It really has to be the case of giving the audience a story of what is behind the subject. This is why we are not just featuring RILEM TCs… we are kind of making a personal choice on

what things we think are interesting out there. But, of course, anybody is welcome to make a suggestion if they think there's a good talk we have not covered. Now I'm sharing the organization of these webinars with Prannoy Suraneni (*Editor's note: Prof Prannoy Suraneni, from Miami University USA, is one of the EAC members*), so this brings in a little bit different perspective from different continents, different age ranges, and things like that.

RIM: You mentioned YouTube: the video of your first webinar in Nov 2020 has collected 4200 viewers so far. I personally think that it is a webinar anyone can listen to, engineers or chemists or physicists; as long as you have a minimum technical background, you can understand it. I also found that the webinar from Franco Zunino is, on the other side, far more technical; you must have some background in chemistry to follow it. Nevertheless, it collected 1400 viewers! Also the webinar by Barbara Lothenbach on thermodynamic modelling of hydrated cement is very technical but it also attracted 1400 viewers. In the webinar on Hydration of Limestone Calcined Clay Cement, the speakers, Shashank Bishnoi and Fernando Martirena, presented the topic in a very "easy" way, approachable by many and it was viewed by more than 2000 people.

KS: I think this archive is really valuable and for my own lectures I find it very useful to have it. Many times, I'm talking to people saying the same things and the next question is often "where can we find out more about this?", and I send them the link. It is very useful for me to have a sort of backup of what I'm telling people all the time; these people can range from venture capitalists to NGOs to… everybody! Then, as I said before, I think it's also a really good reserve for lecturers if they want to give resources to their students to go into a topic in more detail.

RIM: Most of the topics of the webinars deal with cement and concrete, but there are also webinars on asphalt, earthen materials (*Editor's note: this is coming in the following months*), corrosion,… what do you think is missing there?

KS: Well, we're trying to make it as broad as possible. RILEM is a lot about concrete but it's not only about concrete and we really try to push that aspect. We want to get good ones that focus on other materials than concrete, but also webinars that give us a rounded view for the people that are not in that subject area. I think it would be nice to have maybe somebody talking more about wood materials but we also need someone that is going to put that in a good perspective; for instance, it's no good to say that wood is the solution to everything when we simply haven't got enough forests to supply much more than the amount of wood were using at the moment. I think the main thing is: people should be proactive! Anyone is quite welcome to write to me and make a suggestion. I'll look into it for sure. This series is in English, so we do need to have people that are really comfortable speaking English. It doesn't matter if there are mistakes here and there, but the speaker must be able to be understood by people in English.

RIM: On this matter, EAC is accommodating also webinars in a different language than English. So far we had two webinars in Chinese and two webinars in Spanish. Would you consider more languages?

KS: This is a difficult one! I don't think we want to multiply this too much. It has always been an amazing fact something that I read a long time ago: there are only something like 10 languages which are spoken by more than 100 million people in the world; so it's not that you really need to have all languages, clearly. Chinese is extremely important; Spanish is probably after English the language that is most widely spoken in the world by probably quite a long way. I would be reluctant to go many more than this because also we must make sure they're not clashing with each other.

We run out of weeks in the months to do these because we don't want to have two webinars in the same week; then, of course, we've got the webinars of the RILEM Youth Council as well, and we don't want to clash with those. I think we're pretty full and I would see it difficult to justify another language on the same level as these two.

RIM: I have a comment to make about the webinar of Doug Hooton. I found the topic he presented very practical. Rather than talking about the chemical reactions in a cement plant and the production of CO_2 in the kiln, he simply said "look, there are tools, not formulas, already there, like the minimum amount of cement, etc… that can be put into practice to reduce the carbon footprint". I think it was a webinar very interesting for an industry audience.

KS: I am also promoting that webinar a lot because we have to understand that there is no miracle breakthrough solution out there. But if we really join together all the solutions we know about, we can achieve very substantial CO_2 reduction. I think this one of reduction of cement content in concrete is often forgotten about. The basic technology has been known for a hundred years, starting with the first people doing all the work on aggregate sizes. My predecessor here in Lausanne, Prof. Bolomey, did a very nice work on this… but then it gets forgotten! Rather than taking these very good tools we have, people think "oh, maybe we can do it again on a computer". You find out that for many reasons the computer cannot manage to do that much better than the basic pen-and-paper techniques that were developed one hundred years ago. So, I really agree with you on the fact that we need to think about how to put people in touch with these basic tools.

RIM: Any idea on this subject?

KS: What we're trying to do is to develop a sort of shop-window for all these different videos that are out there with some educational content. We call this EPON, that stands for Educational Platform Online. It does not have any content of its own. The idea is to showcase links to educational materials, like the ROC&TOK webinars; but also to those done by a number of colleagues that are making really nice videos; for instance, there is a very nice series from Robert Flat, ETH Zurich, which will be available soon. In the new year, we really want to launch this new page so that people can go and look at. I think we just want to start with something quite rough but as it goes on, maybe we can find a way to highlight certain contents for people from industry. I think, however, that this is going to take a little bit of time to evolve… all of us is trying to do this on the side of everything else and life gets busier and busier (*Editor's note: RILEM members work on a voluntary base*).

RIM: I watched the webinar of Robert Flatt and I really enjoyed it!

KS: His videos are just being finalized, but they will progressively become available and very many of them are purely educational: history of cement, hydration of cement, things like that. I think that will be a nice series to highlight on EPON. We need to get this kind of cross-fertilisation. I think this is a very good role for RILEM because it's accessing so many different people from so many different communities worldwide. If you see a good video online, then please let us know and we will try to integrate it in this new EPON page.

RIM: One last question: some webinars showcase really breakthrough contents, something that sometimes you cannot even find in textbook; other videos deal with some very basic knowledge, the fundamentals you should know if you want to do some research on that topic. Do you want to maintain this balance of having a little bit of both?

KS: I think we need both. For me the idea is to mix it up as much as possible. People have a variety of interests, they have different things that appeal for different people, and I want to maintain this variety. For instance, for the one I'm doing this week I'm going back to hydration. It's an old topic but the reason I am talking about myths is because the textbooks are so completely not up-to-date, maybe because people like me should write more textbooks, but….

RIM: but there are only 24 hours in a day!