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# For Your Information

## Lovász to Chair Fields Medal Committee

László Lovász, president of the International Mathematical Union, will chair the selection committee for the 2010 Fields Medals. The medals will be awarded at the International Congress of Mathematicians in Hyderabad, India, in August 2010. The contact information for Lovász is: Eötvös Loránd Tudományegyetem, Számítógéptudományi Tanszék, Pázmány Péter sétány 1/C, H-1117 Budapest, Hungary; email: lovasz@cs.elte.hu.

—Allyn Jackson

## Robert Bryant Appointed MSRI Director

*Robert Bryant has been appointed director of the Mathematical Sciences Research Institute in Berkeley, CA, effective August 1, 2007. He succeeds David Eisenbud, who started as MSRI director in 1997. Eisenbud has taken up full-time his position as a professor at the University of California, Berkeley.*

*Bryant received his Ph.D. in 1979 from the University of North Carolina. He is the J. M. Kreps Professor of Mathematics at Duke University. His research centers on nonlinear partial differential equations and differential geometry. Currently an AMS vice president, Bryant has also served on several AMS committees, including the Executive Committee. He served on the MSRI Board of Trustees from 1999 to 2004 (chair 2001–2004).*

*In the following interview, Bryant talks with Notices deputy editor Allyn Jackson.*

**Notices:** *You went to MSRI for the first time in 1983, right after MSRI was founded, and you have been there many times since. What has MSRI meant to you personally in your career as a mathematician?*

**Bryant:** The MSRI workshops were all important for me. [Shiing-Shen] Chern, who was the director of MSRI for its first few years, organized several workshops along the lines of exterior differential systems in geometry—what you might call the Cartan tradition in geometry—that

happened early on in my career. Those workshops had an enormous influence by introducing me to other people who were interested in the same kinds of things but who knew different techniques from what I knew. Of course, that is one of the major purposes of the workshops, to facilitate communication. I got my Ph.D. in 1979, and after a year at the Institute for Advanced Study, I moved to Rice University. While there was a lot of excellent geometry and geometric analysis being done at Rice, I didn't have close collaborators there, and Rice was a ways away from the other centers of geometry. So having a place like MSRI to go to was really important and shaped a lot of my interests. Also of course Chern was there, and he took a big interest in things we were doing. Chern and I were part of a group [with Robert Gardner, Phillip Griffiths, and Hubert Goldschmidt] writing a book on exterior differential systems, and I remember writing a large section of what would be Chapter 7 during my first visit to MSRI.

**Notices:** *How do you see the role of MSRI in the mathematical community?*

**Bryant:** It's changed as the years have gone on. Originally its main function was having conferences and workshops and a few extended programs. But once MSRI had its own building—a real home with a real seminar space—it could take on more ambitious projects, like semester-long and year-long programs. A group of people could come together for an entire semester or even a year to do intensive activity in a particular area or research topic that was breaking news and was ripe for progress. MSRI has played an important role in having activities that get people together and allow things to take off.

**Notices:** *Do any particular examples stand out in your mind?*

**Bryant:** I remember, early on, the seminar on nonlinear PDE in geometry, which got a lot of people together in, not just classical geometry, but PDE methods too. They were working in rather different areas and might not necessarily have been talking with each other much. The cross-fertilization made a significant difference. For example, some of the advances at that time in regularity theory for harmonic maps were influenced to some extent by that seminar. I also remember that right after Simon Donaldson came out with his fundamental work on gauge theory and 4-manifolds in the early 1980s, he gave a wonderful series of lectures at MSRI. There was an enormous crowd. I remember sitting there in the audience and looking around

and seeing all these great mathematicians hanging on every word. Donaldson's ideas spread very rapidly, and I think those lectures at MSRI played some role in that.

**Notices:** *How do you see the role of MSRI beyond the math community, within society in general?*

**Bryant:** Particularly under David Eisenbud's leadership, MSRI has reached out in a lot of new ways, for example by holding education conferences. This has not been viewed as a traditional thing for research institutes to do. But I think educational activities have a great future at MSRI, because we have people on the board who are very concerned about education, and there is a lot of expertise to draw on, from both the mathematical side and the education side. I'd really like to see that go forward.

There have also been very successful public awareness events at MSRI, such as Robert Osserman's conversations with people such as playwright Tom Stoppard. These events help advertise to the general public that there is an intellectual, philosophical component to mathematics that is important. Mathematics is not just a collection of techniques for doing calculations, but it's a way of organizing one's knowledge about the world that provides a useful point of view even if you are not interested in doing calculations. I think having those events has been good for the public and good for MSRI and the mathematics community.

Other things MSRI is involved in include the Math Circles, which are like mathematics clubs for young people. They help encourage young people to develop mathematical ways of thinking and an appreciation for mathematics as an intellectual discipline, not just tricks. I think that's an important thing to be spreading in the culture.

**Notices:** *Is there a danger MSRI is trying to do too much?*

**Bryant:** Any organization can lose its focus if it tries to be all things to all people. But our core vision is to help develop research mathematics and at the same time to develop an appreciation for mathematics in the culture. There is not a conflict there. It is true that with our limited resources we can't do everything. For example, our education activities, compared to the total mathematics education activity in this country, are like a drop in an ocean. But I do think it's important to have conversations about just what it is that mathematicians think is so valuable about mathematics that needs to be transmitted. We can help make sure that important intellectual insights are not lost in the clamor about how do you test that students know  $x$  or  $y$  in mathematics.

In May MSRI had a conference about climate change. It wasn't a discussion about, What should we do about global warming? Instead, it looked at the question, What are the mathematical disciplines that are needed for the study of climate change, and what parts need further development? This includes not only statistical issues and the earth models themselves, and the numerical solution of PDE, but questions of economics and the social sciences. Being able to shine a light on the appropriate use of mathematics from the point of view of people who understand the pitfalls and the strengths of a mathematical stance is a role that MSRI can play and should play—even if we are

not focused on numerical methods or number crunching, which is not our forte. To be aware of the foundational issues of using those models is important. MSRI has a collection of meetings along those lines between research mathematicians and practitioners in other fields, and I think it's a very useful service that we can provide.

**Notices:** *Can you tell me more about your interactions with Chern?*

**Bryant:** I am a "grandstudent" of Chern's, in the sense that my advisor was his student. In fact, while I was still a graduate student, my advisor, Robby Gardner at UNC, went on sabbatical to Berkeley and took me along with him, and that's when I met Chern for the first time. That was in 1978. Chern was incredibly encouraging. He loved talking to young people and finding out what they were interested in and giving advice—giving really good advice, by the way. It was very affirming to get somebody like that early on who took you seriously even when you were a green graduate student. Later on, even when I would do things that made Chern say, "Well, I just don't think that's very interesting," he still appreciated the source from which it sprang.

Chern had a wonderful sense of how the classical material fit with modern geometry. Of course, he had studied with Élie Cartan himself. Because my advisor had encouraged me to, I had read a lot of Cartan's papers. So I found a ready audience in Chern whenever I was trying to understand something in Cartan's papers or was excited about something I had understood in them. Chern would tell me his own views about that particular paper or what his experiences were. I got from him a sense of how the classical people thought. That's hard to extract from the old papers now, because their mode of thinking was so different. And yet there was tremendous geometric intuition behind it, which is not written down anywhere. But that intuition lived on in Chern, and he was able to transmit a lot of it.

**Notices:** *It must be special for you to be taking on the directorship of MSRI, since Chern was its first director.*

**Bryant:** Oh, it is, absolutely. Chern was a cofounder of MSRI, with Cal Moore and Is Singer. Chern had a very strong vision of what MSRI should be, that it should be a place that encouraged young people and promoted mathematics research of the highest caliber. I have been very pleased to see that the postdoc program has been very successful at MSRI, and it's influenced a lot of people early in their careers. I want to make sure that continues. It is an important legacy of Chern's.

I am excited to be taking on the directorship at MSRI. It's going to be a great challenge for me, because I have not done much in an administrative capacity before. I've never even been chair of a department, though I have had some fundraising and administrative experience in other organizations. But, as an intellectual enterprise, I think MSRI has a clear mission and set of goals, and I am excited about being involved in furthering those goals.

—Allyn Jackson