

# Serious Science. Serious Fun.

Hot baths, cold excursions, and stimulating discussions at the Inaugural Conference of FQXi in Iceland.

fq(x)  
News

FQXi Conference Story

August 31, 2007

Here's a foundational question for you: Do science, swords and snowmobiling mix?

They did at the Inaugural Conference of FQXi, convened July 21 through 26 in Reykjavik, Iceland. The gathering got high marks from many scientists who attended – and not just because of a day spent soaking in one of the world's most remarkable natural spas.

I almost felt guilty for being so pampered. But on the other hand, there was so much more progress and sense of achievement than at other conferences.

- Laura Mersini-Houghton,  
University of North Carolina,  
Chapel Hill

"I almost felt guilty for being so pampered," said Laura Mersini-Houghton, a professor at the University of North Carolina Chapel Hill. "But on the other hand, there was so much more progress and sense of achievement than at other conferences."

Similarly, at the physics blog Cosmic Variance, Syracuse University Professor Mark Trodden called the conference "fascinating and intellectually stimulating," describing deep discussions, among other topics, about the early universe's low-entropy state – and a snowball fight on a glacier. Imagine being pelted by an icy chunk hurled by the man who discovered cosmic inflation – and ducking under a return volley from the author of the best-selling *Physics of Star Trek*.

"Unusual and dramatic," as Trodden wrote in his blog, probably doesn't begin to cover it.

## When In Iceland....

From the very beginning, The Foundational Questions Institute planned a conference that would enhance the two-year-old organization's philosophy of encouraging, supporting and funding "big questions" such as: Are we the only universe out there? Will ET ever pick up the phone? Ten dimensions – or eleven? And where exactly is all that dark matter hiding, anyway?

"Conferences can be really boring," said FQXi Associate Scientific Director Anthony Aguirre, an associate professor at the University of California Santa Cruz. "The attempt with most conferences is to pack in as many talks as you can, and you don't really have any time to talk with your colleagues and exchange ideas, which should be the main point of a conference."

So Aguirre, with FQXi Scientific Director Max Tegmark, an associate professor at MIT, designed a dream conference: an opportunity for colleagues to get to know one another, exchange ideas, and perhaps come away with a fresh and different approach. Because FQXi gets no government funding, Aguirre said, they were free to do what they wanted.

So attendees' homework consisted of submitting possible topics for discussion, including "one bold but half-baked (or half- or three-quarters baked) idea that you have been thinking about recently." Their nametags proclaimed one mind-bending – but probably true – concept drawn from their research. ("We are probably living in a computer simulation," read the nametag of Paul Davies from Arizona State University.)

One full day of discussions took place at a lagoon heated by geothermal springs, and another day was spent touring Iceland's spectacular waterfalls and glaciers. The week climaxed with

some of the greatest names in physics and cosmology debating some of the heaviest questions ever considered by humans – while wearing Viking helmets and brandishing swords and axes.



WHEN IN ICELAND Attendees enjoying snowmobile rides.

It all sounds a bit like the pilot episode for "Physicists Gone Wild." But attendees said that among the waterfall visits and impromptu snowball fights, quite a bit of work got done, too.

## No Really, I Was Working In The Spa....

Mersini-Houghton recounted a walk down a stretch of road with colleagues after one outing. A chat about eternal inflation migrated into theories of the multiverse and quantum gravity. "We wound up having a wonderful conversation," she said,

Mersini-Houghton believes the conference was successful in part because many of the participants were people who might not ordinarily be in the same room exchanging ideas, or even necessarily reading the same journal articles. "It was very eclectic," Mersini-Houghton said. "These communities of physicists would not normally talk to one another."

In fact, the roughly 60 conference attendees represented a wide spectrum

of physics and cosmology researchers. Some were FQXi Members or grant recipients; others were invited because they've been considered for Membership or do work in areas that the Institute wants to support, Aguirre said.

A handful of non-scientists made the trip to Iceland too, including representatives of the National Geographic Society and a film crew from PBS, which interviewed several of the participants for a series called "Closer to the Truth: Science, Meaning and the Future." This program brings together leading scientists and other scholars to debate discoveries and their impact on the human condition. They also got some good footage of physicists' soaking in the Blue Lagoon.

### Snowball's Chance

Not all of the attendees gave universal raves. Lawrence Krauss, chair of the physics department at Case Western Reserve University (and the aforementioned Physics of Star Trek author), said he thought the conference was a good attempt with mixed success.

"It put people in groups who might not otherwise have interacted, and that was very good," Krauss said, referring to group discussions planned by conference organizers. "The negative aspect was that the questions themselves were somewhat artificial and focused on topics where there may have been more heat than light."

Still, University of Michigan physics professor Fred Adams said that overall he thought the panel discussions and debates – while they could have been better organized – succeeded in getting people to talk and generate ideas.

Adams said the conference also reinforced FQXi's basic reason for being: "Namely," he said, "to help carry out somewhat unusual but foundational research. I am more convinced than ever that FQXi has a worthy mission."

### Next Step: The Azores?

That's nice for Aguirre and the other FQXi leaders to hear. The group Institute is currently funded through by a four-year seed grant from the John Templeton Foundation. Aguirre said the

conference also served to demonstrate to the foundation, and possible other potential donors, that its mission and approach can get results.

"We're constantly thinking about how to make the most exciting research happen," Aguirre said. "There's something wrong when the top people in their fields can't do the research that they think is most important because they can't get the funding for it."

He hopes that some exciting new collaborations result from the week in Iceland. "When people really get to know one another better, it enhances the chance that they'll connect later," Aguirre said.

Mersini-Houghton, for one, has an idea that she said "just hasn't gelled yet," and she benefited from talking to colleagues and getting input about her approach. "It's really the best way to do science."

The steam baths probably didn't hurt, either.



THE EARLY UNIVERSE Alan Guth



DINNER AT THE IDNO



THREE WISE VIKINGS



A WALK IN THE BLUE LAGOON ENVIRONS



**BEYOND DECOHERENCE** Wojciech Zurek



**NO REALLY, WE WERE WORKING IN THE SPA....**



**WANTING ANSWERS!**



**BACK FROM THE HORIZON!**



**FOXI INAUGURAL CONFERENCE ATTENDEES**