



# a year in the life

by Kurt Riesselmann

For 33 particle physicists, the year 2005 was a great experiment in science communication. To support the World Year of Physics, these brave souls had agreed to share their thoughts and their lives with the public, blogging on the *Quantum Diaries* Web site. Some of them posted notes a couple of times per month, others wrote almost daily. Twelve months and 2400 postings later, the *Quantum Diarists* have delivered a vivid image of their personalities, interests, cultures, and achievements.

The *Diarists* reflected on research activities and combining life with work. They commented on the position of women and families in physics; science and politics; teaching and outreach activities; and how an individual physicist fits into the increasingly international scientific endeavors. Most importantly, they provided the public and future scientists a glimpse of what it is like to be a scientist.

Some blogs drew more than 1000 page views per day, and over the course of the year readers from around the world posted almost 5000 comments. As the year came to an end, *symmetry* asked some regular and not-so-regular readers to share their thoughts on the *Quantum Diaries*:

"QD is like a reality show about the life of physicists. My favorite diarist is Sarah Phillips. She is the image of the young physicist, full of enthusiasm, energy, and life... I think the collaborative work of particle physicists is an example of how to work in a global world."

*Luis Gustavo Lira, social entrepreneur, Lima, Peru*

"As a physicist I can personally relate to many of the articles written. It's nice to get some idea about how other people handle the same sort of situations that I have found myself in this year, [and] how other physicists react to the things that happen with their daily lives."

*Michael Bremner, postdoc, University of Innsbruck, Austria*

"I went to Caltech as an undergrad [in biology and chemistry]. It was just interesting to read one woman's [Caolionn's] journey through the field as there are so few women in physics."

*Anandi Raman Creath, program manager, Redmond, WA, USA*

"I enjoyed the inherent randomness: the ability to open a blog and go from reading about the latest measurements in the mass of the top quark to reading about car racing to reading about parties... It wasn't all political, or physics, or whatnot."

*Gordon Stangler, student, University of Missouri, St. Louis, USA*

"[The Quantum Diarists] have the same thoughts and hobbies as average people, but they are all clever and diligent. I am a little surprised that so many lovely girls are engaged in physics research. I thought the subject is more dull and difficult."

*Celia, teacher at a medical university, China*

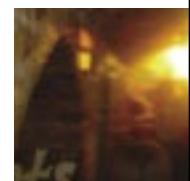
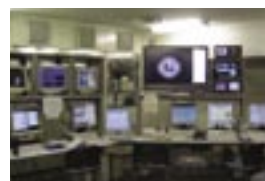
"There were faces to go with the names. There were countries to go with the faces. It was a collaborative, international community. It was a critical mass of bloggers, which showed that this was a worldwide effort"

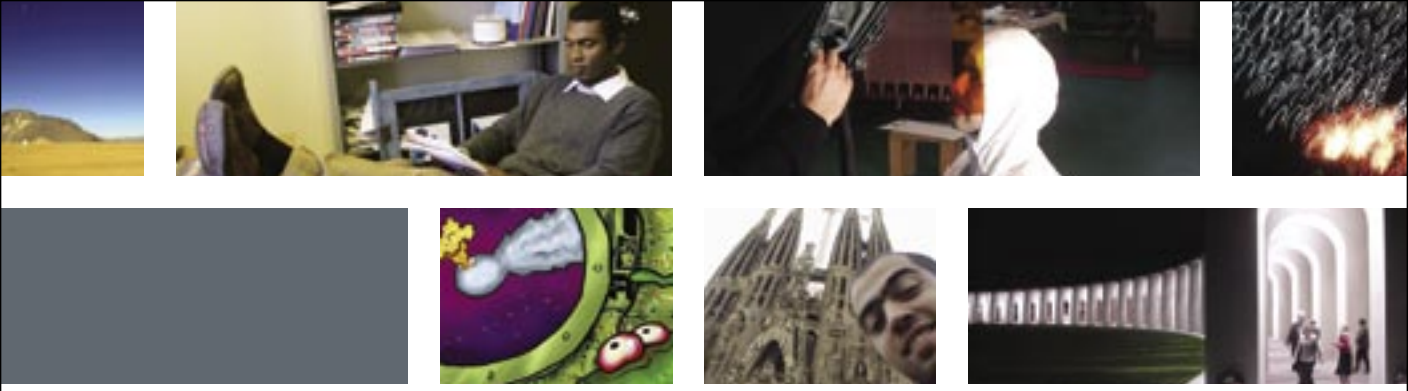
*Linda Ware, Public Affairs manager, Jefferson Lab, USA*

"I like the idea of having access to the scientists' community in such an easy way and seeing their normal lives."

*Adel Hinda, engineer, Paris, France*

The following pages provide a glimpse of the diversity of topics that the Quantum Diarists wrote about, illustrated by some of the hundreds of photos they posted in 2005. The archive of all posts and photos is at [www.quantumdiaries.org](http://www.quantumdiaries.org).





## January 17th:

### Life beyond physics

I had this incredible balance between my music and physics career in London... There is this unspoken feeling/pressure [in the United States] that one has to 'choose' one over the other to be taken seriously—and I suspect that this is a field invariant statement. You can argue 'screw what others think'—clearly. But at the end of the day those same people may be on a committee to vote for your faculty appointment or a gig at Lincoln center.

*Stephon Alexander, Stanford Linear Accelerator Center/Pennsylvania State University, USA, who excels as theoretical physicist and as saxophone player*

## January 27th:

### Saving the world

Perhaps only physics and astrophysics could provide the tools to avert an asteroid strike or mitigate the effects of a nearby supernova explosion or a gamma-ray burst. Perhaps physics could provide better tools for warning or reducing the impacts of earthquakes and tsunamis.

*John Ellis, CERN, Switzerland, reflecting on possible natural disasters in the wake of the devastating tsunami in Southeast Asia*

## February 4th:

### Gender equality

Women should not give up aiming for the work and the positions we would like to have and a satisfying personal and social life. I think this is the only way in which society will benefit on the long term. The level on which a society is able to provide equal opportunities for individual development to men and women is a clear sign of its evolution.

*Ursula Bessler, IN2P3, France, on the role of women in science*

## February 10th:

### Time for Family

Physics and family are not mutually exclusive. It's clear from the blogs of my colleagues that many of us have families, and our families are very dear to us. However, time spent on one means time away from the other. Finding the right balance can sometimes be difficult. In two months time, the scales will tip towards family for me. I will be taking a three month leave from my job to be a stay-at-home dad. I am fortunate that in Canada, parents can take [extended] parental leave after the birth of each child.

*David Waller, Sudbury Neutrino Observatory, Canada*

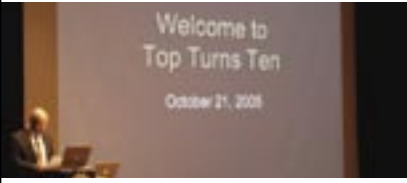
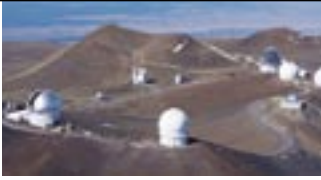
## February 28th:

### Life without sushi

Living abroad [is] sometimes tough. Differences in language, culture, climate... One of the biggest challenges, however, may be the food. I have been living outside Japan for over 12 years, and the last five years mostly in Geneva. Japanese food in Geneva was very expensive and unfortunately not very good. Vancouver, on the other hand, is a paradise for Japanese food... I must admit that this fact, at least subconsciously, affected my decision to accept the offer for my job here.

*Makoto Fujiwara, TRIUMF, Canada*





## March 16th:

### When kids ask questions

And sure enough, these students asked questions that I had never been asked before—one student asked if there were any poetic folks who were physicists (to which the answer is most assuredly yes!) In two different classes I got asked the question ‘Do you think doing physics changes the way you look at the rest of your life?’ to which my first answer was that ‘No, the rest of my life probably changes the way I look at physics...’ Now that I’ve thought about the question longer I can say it goes both ways—I think that part of the way I explain things to my kids comes from being a scientist.

*Debbie Harris, Fermi National Accelerator Laboratory, USA, visiting local high school classes*

## April 1st:

### Falling in love

Yesterday was the third anniversary of my first date with Anita. We met over the Internet. I had advertised myself as “Dancing Nuclear Physicist Seeking Smart, Self-Aware Woman.” Something clicked between us and before I knew, I was asking her to marry me on the web.

*Anuj Purwar, Los Alamos National Laboratory, USA*

## April 9th:

### Physics fashion

In Germany [people] picture physicists and engineers wearing checkered shirts. During the DZero-France meeting in Grenoble these last two days, this point came back to my mind and I thought to investigate this in some more detail: is this cliché based on some truth?

Even in France? At the meeting we were...35 physicists. Among those, 12 did wear shirts, and 7 checkered shirts, which makes 20% [of the total]. Among all shirts, checkered shirts are the most popular ones (close to 60%).

*Ursula Bassler, a German physicist at IN2P3, France*

## April 18th:

### An unexpected discovery

I knew something that non-RHIC people didn't, that we were going to finally “go public” with our excitement about the physical picture emerging from interpretations of the RHIC data... Even 5 years ago, who would have thought that colliding nuclei at ultra-high energies would make a fluid...rather than a gas of quarks and gluons.

*Peter Steinberg, Brookhaven National Laboratory, USA, on a discovery based on experiments at the Relativistic Heavy Ion Collider*

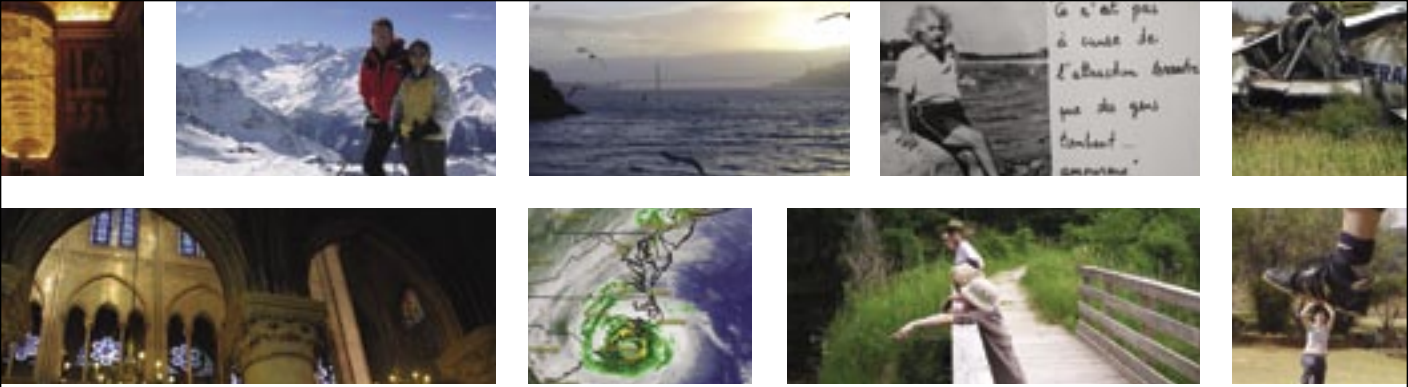
## April 21st:

### Science and religion

By its very definition, science refuses to deal with God. Science is a search for ‘natural laws.’ This means that the universe operates without the need for a chariot to carry the sun across the heavens, etc. God, being supernatural, can't really be defined by science. From this, people make the jump and say there is no God. But I don't think that science, in its purest form, excludes God.

*Bryan Dahmes, SLAC, USA*





## April 22nd:

### But how much did they learn?

I got a letter from the Alumni at the University of Washington association today saying that they'd recently run a popularity contest among the graduating seniors to see who was the best teacher on campus. I didn't win, but apparently I got some 'votes'.. But does 'gee, he was a good teacher' have any relationship to 'wow, I learned a lot'?

*Gordon Watts, University of Washington, USA*

## May 14th:

### Fostering international relations

Today is the first day of the 2005 China-CERN Workshop on Cooperation in High Energy Physics. About 10 CERN physicists, including Prof. Robert Aymar (the CERN Director-General) came to Beijing... A stronger and more fruitful cooperation between China and CERN is expected.

*Zhi-Zhong Xing, Institute of High Energy Physics, Beijing, China*

## May 15th:

### Science ethics

The main focus was on the responsibility of the scientist for technologies derived from basic research, especially those technologies capable of mass destruction. There was also a lot of discussion of the role of religion in the lives of these two scientific men, especially in the context of the ethical and moral decisions both men made, and didn't make, in the course of their lives.

*Peter Steinberg, BNL, on the award-winning play Einstein's Gift, which highlights the lives of Nobel Prize winners Albert Einstein and Fritz Haber and their roles in producing tools for war*

## May 22nd:

### Hooked on science

I have always been good at mathematics... I think I came to love physics when I understood that simple laws could explain very complex phenomena—like why a lake won't completely freeze in the winter, thereby allowing life to continue inside.

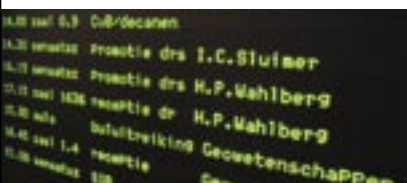
*Tommaso Dorigo, University of Padova, Italy, explaining during the "Quantum Diaries: Career week I" why he studied physics*

## June 1st:

### A letter from Senator Allen

Well, I had a surprise waiting for me in my mailbox this weekend: a letter from one of my U.S. Senators. I was not expecting to receive a response. However, this weekend I discovered a letter from the office of Senator George Allen in my mailbox! It is pretty cool, actually. In the letter, he agreed with my views and outlined the things he is doing to support them.

*Sarah Phillips, Jefferson National Laboratory, USA, who had sent letters to three Congressmen with her concerns about the funding for the US Department of Energy's Office of Science and the US National Science Foundation*





## June 6th:

### Speaking to a laptop

I was called in to give a talk as an 11th hour replacement for someone who couldn't make it. My talk was scheduled for 3 p.m. in the afternoon, which translated into 1 a.m. in Chicago. So, there I was, on a Sunday night giving a talk Monday morning in Korea. Sounds so cool, but it required a lot of imagination. Instead of traveling to Korea I'm in my sterile office in Hyde Park. There I had a small image of the conference venue which showed my slides but not the audience. So I gave a ridiculous talk to myself. It was like speaking to a...laptop.

*Rob Gardner, Argonne National Laboratory, USA, who participated in a workshop in Daegu, Korea, via videoconference*

## August 23rd:

### Divine intervention?

I'd be the last guy to say that we shouldn't always be questioning our fundamental beliefs, and challenging our current conceptions of the world... But it's an enormous leap between an open-minded, critical scientific debate, and boldly asserting "if we don't understand it yet, it might as well be divine intervention."

*Peter Steinberg, BNL, joining a discussion among Quantum Diarists on Intelligent Design*



## September 30th:

### The naked universe

We are in a situation now that...95% of the universe is unknown to us. This reminds me of the fairy tale by Hans Christian Anderson, *The Emperor's New Clothes*, where everybody admires the new suit of the emperor, which according to the crooked tailors is only visible to smart people. Until a little kid shouts: 'But he [the emperor] has nothing on at all!'

*Jochen Weller, Fermilab/Oxford University, explaining during "Quantum Diaries: Einstein week" that scientists discovered in the last 10 years that 95% of the universe is not made of ordinary matter*

## September 13th:

### Life is too short

There is no doubt that when you're in physics you spend much more than 40 hours a week doing something someone would call 'work.' But on the other hand, you don't think of it as work so much as doing something you want to do... A job should not be something you do so that you can pay the bills and then have fun on the weekends: life is too short to have a job you don't enjoy.

*Debbie Harris, Fermilab, giving advice during "Quantum Diaries: Career week II"*

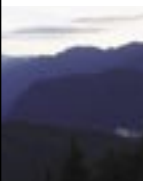
## October 13th:

### Benefits of curiosity

The entire point of a career in any research field is to find out things we did not know and tell it to others so it can be used effectively for the betterment of mankind... It is true that many of the investments in basic research in such areas as nuclear and particle physics are long-term, and that applications of the research can take a long time to show up in everyday life. However...I just recently went to a seminar by General Electric on advances being made in medical imaging using the advances we are currently making in detector designs in nuclear and particle physics.

*Sarah Phillips, JLab, responding to a question about governments funding "sheer curiosity"*





## October 20th:

### Was Einstein a genius?

My personal point of view is that some other scientist would have arrived at the same conclusion very soon. The special theory of relativity was 'in the air'... On the contrary, his general theory of relativity [was] a really revolutionary and absolutely original new idea.

*Sandra Leone, INFN Pisa, Italy, answering a question about what would have happened if Einstein never had discovered the equation  $E=mc^2$*

## December 7th:

### The zen of quantum physics

Not only was it a little trippy (I mean, the cat is half dead and half alive until you look at it) but there was something zen-like about solving the problems. I have distinct memories of staying up until 4 a.m. in the common kitchen of my dorm putting the final touches on a 40-page problem set and feeling very satisfied about it. All of it so elegant, so beautiful—I honestly loved it.

*Caoliann O'Connell, SLAC/Caltech, confessing that she liked her quantum mechanics class*

## December 14th:

### Multidisciplinary research

Personally, I think the real justification for a Dutch national GRID computing facility lies in the opportunities it provides to...the Life Sciences, Social Sciences and Humanities... Many exciting studies become feasible once you can correlate massive databases in an effective manner.

*Frank Linde, NIKHEF, Amsterdam, The Netherlands*



## December 30th:

### Expecting a child

This should be quite an end to the year. My wife has just announced that she has gone into labor (at 90% confidence level for all you physics/stats aficionados out there). The odds are that we will have our second child before 2006 starts.

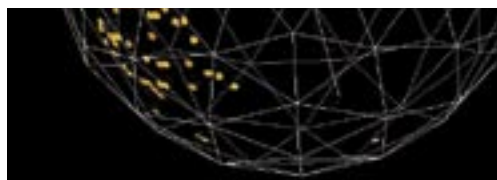
*David Waller, SNO*

## December 31st:

### Blogging away

When I started I had no idea if I could maintain the writing. And I really had no idea what I would write about, or if I could come up with enough topics to write about. It turns out we all have about 1000 ideas a day that we think of and forget. The blog is a perfect place to write some of them down. And sometimes it turns out to be a perfect place to vent. I will certainly continue to blog.

*Gordon Watts, University of Washington*



The full text of all blogs can be found at [www.quantumdiaries.org](http://www.quantumdiaries.org)

Photos: QuantumDiaries.org