

OPEN DAYS GUIDE FOR THE CERN-SAVVY



CERN
OPENDAYS

Our Universe is Yours
Notre Univers est le vôtre

Do you think you know your Laboratory? Been there, done that? Well then prepare to be proven wrong! The CERN sites are hosting some spectacular tours, demonstrations and events to surprise even the most well-versed of CERNois. Take a look.



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If you're heading straight for the Main Building on arrival, make sure to take a detour through the **CERN Workshop** (Map: B1). But be warned: this will be a long detour! Spread across six distinct areas, the CERN Workshop is the first-stop shop for accelerator and experiment prototypes. Welding, drilling, precision measurements, mechanical tests and even element design: it's all done here. Technicians will be at work on dozens of machines and will be ready to answer your questions. It's your chance to see detector pieces while they're still works-in-progress – let us know if you spot any CLIC pieces! – and to satisfy your inner “Bob the Builder”.

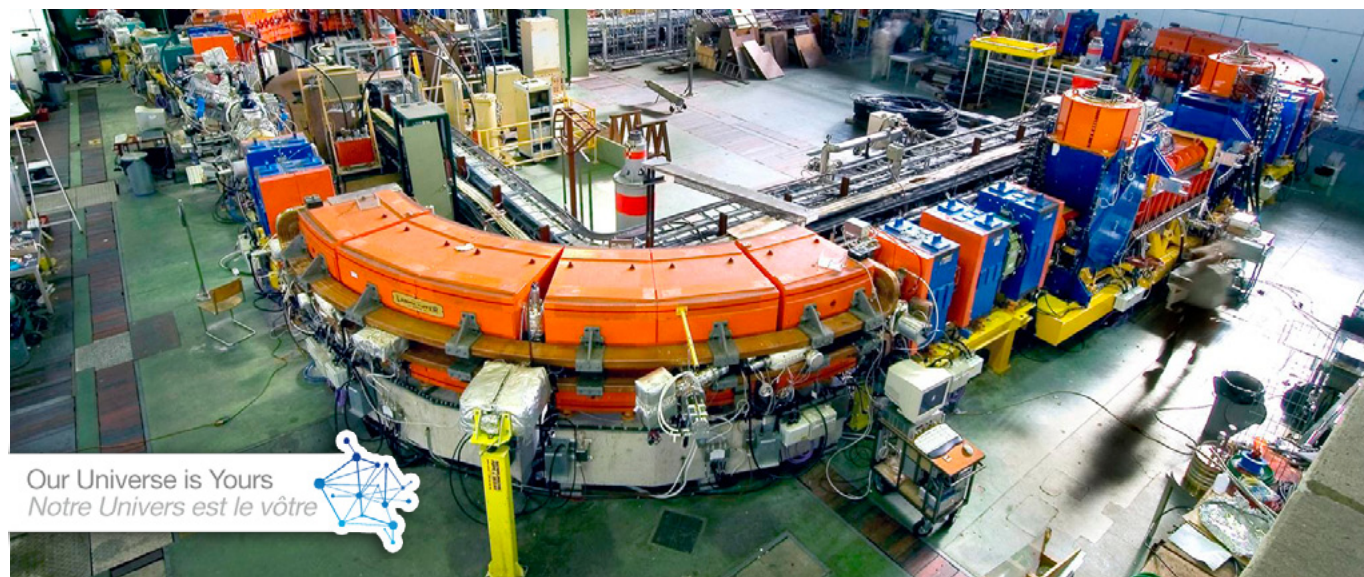
Head over to the **Low Energy Ion Ring (LEIR)** (Map: D2) if you're looking for an unusual (and un-ticketed) accelerator visit. This is the

home of the LHC's heavy ions and is also the site of the historic LEAR accelerator. CERN history buffs will also want to visit the just-opened **Synchrocyclotron (SC)** (Map: B2): the Laboratory's first accelerator. This special “antique” is making its debut for the Open Days, after which it will become a permanent exhibition point, but if you want to get in while the paint's still wet, go now!

If you're just looking for a break from accelerators, we've still got you covered. Visit the **International Village** (Map: A7) and take a tour of a veritable alphabet-soup of organisations: from ESA to UNOG to the ITU, representatives from 10 organisations will be on hand to introduce their activities and answer your questions. At the heart of the village, you'll find a lecture hall. Expand your

(Continued on page 2)





The Low Energy Ion Ring (LEIR). (Map: D2).

(Continued from page 1)

horizons with talks from afar ("Live and Work in Space"), nearby ("The UN: a credible actor in a globalized world?"), and close to home ("CERN Digital libraries in developing countries").

Interested in pursuing an activity well beyond the Open Days? Then you'll want to check out the **CERN Clubs** site in Prévessin (Map: G2). Club members will be on hand to pitch their hobbies to fellow CERNois and to provide live demonstrations. The CERN Jazz and Music clubs are going all-out with a two-day **Music Festival** (Map: G4). This open-air event will see both professional and amateur musicians take to the stage performing a mix

of classical music, jazz, folk and rock. There'll be something for everyone.

Last but not least: take a Formula 1 tour in a Ferrari. Yes, you read that right. Head over to the **Transport & Handling site** (Map: B6) for your chance to get in the jump seat with a professional driver.

There's a lot going on, so make sure to explore! Share your favourite or most unexpected Open Days experiences with us via bulletin-editors@cern.ch. We'll include the best stories in the next issue of the Bulletin.

Katarina Anthony

BE SMART: DOWNLOAD THE APP!

What's the closest snack point to the CLIC test facility? How do you get from your current location to SM18? How do you enter the CERN Open Days photo contest? Finding out is simple: there's an app for that!

The CERN Open Days app is your personal guide to the Laboratory. Developed by expert volunteers from the IT Department, the app provides comprehensive practical information on CERN transport, shops, snack points and toilet facilities along with detailed location information and event timetables. You can also favourite the sites, activities and lectures you plan to see, and tick them off as you go along.

Katarina Anthony

Download the app:
<http://opendays2013.web.cern.ch/app>



OPEN DAYS GUIDE: CERN, FOR A BETTER LIFE

At times CERN research can seem rather "out there". After all, how can this work possibly relate to daily life? So, let's bring it back down to Earth with some real-life examples of CERN technology in action. On the Open Days, visit these sites for a first-hand look at CERN's important and innovative role in everyday technology.



A treatment room at the Italian centre for hadron therapy (CNAO). Image: CNAO.

- **The Knowledge Transfer (KT)** visit point, where you will be introduced to hadron therapy, Positron Emission Tomography (PET), the Medicis project and Medipix. There, you will be able to see an immobilisation mask, where patients are placed during hadron therapy treatment, as well as a "phantom" – a piece used to simulate the human body for radiobiology studies. (Map: A3).
- **Pôle Energie:** Technologies developed for CERN accelerators have been used to design and build a high-tech solar thermal collector. This technology is now industrially produced by a spin-off company and will be on display at the *Pôle Energie* site. (Map: D7).
- **KT Talks:** Over at Building 33, you'll find around-the-clock talks. Accessible to the amateur, the aspiring and the practising physicist, these talks give a great overview of a variety of KT subjects. (Map: A2).
- **The Crystal Laboratory:** Used in the CMS electromagnetic calorimeter, scintillating crystals are crystals that emit light when particles pass through them. Experts at the lab will explain their use in particle physics, as well as their technological spin-offs for medical imaging. (Map: B3).

CERN Bulletin

OPEN DAYS GUIDE: KIDS INVADE CERN!

Keep the whole family entertained with this mix of zany activities, performances and visits.



ATLAS Adventures

Using the building blocks of the Universe – LEGO, of course – kids will be invited to make their own model of the ATLAS experiment. Each model will be entered into a competition for some great ATLAS prizes! Over-7s will love working on the giant ATLAS puzzle, and adults will be on hand for the little ones who want to put in a piece.

(Ages 4 and up)
Map: Point 1 - ATLAS experiment



CMS's Battle of the Bosons

Quark? Higgs? Proton? Take your pick. At "Paint-a-Particle" face painting, kids will be "transformed" into their favourite particles! They'll also get a chance to work on a massive wood-block version of the CMS detector. The whole family is invited to "fight fire" and win prizes: look out for portable fire hydrants to find out more!

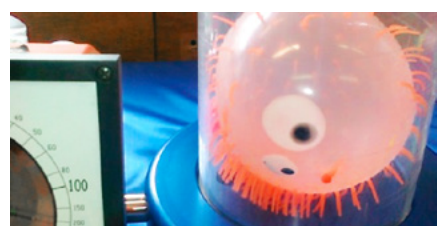
(Ages 3 and up)
Map: Point 5 - CMS experiment



An ALICE Wonderland

At the **ALICE** "Kids Corner", children of all ages will be able to participate in simple-but-fun experiments: making DC-powered motors, water turbines and more. They'll also be able to work on the new paper model of ALICE. Kids and parents alike should also check out the "Cosmic Piano", which will transform real-time cosmic rays into a multimedia musical medley.

(Ages 5 and up)
Map: Point 2 - ALICE experiment



A vacuum full of possibilities

Did we really walk on the moon? What happens to sound in a vacuum? What exactly is plasma? Find out at **Building SMA18**, where a dozen great experiments will teach kids (and parents!) about the mysteries of vacuum.

(Ages 3 and up)
Map: F2



Don't miss the Fun

The **Fun Zone** is a discovery area for CERN's youngest visitors with exhibits aimed specifically at kids. Enjoy a host of activities – including a chance to build a model of the LHC – and enter the award-winning world of CERNland.

(Ages 3 and up)
Map: A8



Little shop of wonders

If your kids love to construct and create, they'll love watching technicians at work at the **CERN Workshop**. There's drilling, welding and boring to behold in this builder's paradise.

(Ages 7 and up)
Map: B1



Full-scale toys

Over at **Transport & Handling**, there'll be plenty of activities to choose from. Kids will be able to drive a forklift, operate a crane or hop on a lifting platform. Young crane operators will walk home with their driving licence in hand and there'll be plenty of transport prizes to win!

(Ages 6 and up)
Map: B6



It's a kind of magic

The **Fun with Physics** shows will take kids on a magical tour of the scientific world. Expect disappearing balloons, levitating magnets and film-ready fog. Don't forget to pick up your free liquid nitrogen ice cream at the end!

(Ages 3 and up)
Map: A6



Heroes in training

Have a young fire fighter in the family? Then the **Safety Training Centre** is not to be missed! Here kids can learn to put out fires with extinguishers, tour current and historic fire trucks, and even take a trip down a zip-wire.

(Ages 10 and up)
Map: H3



Other areas

Introduce your kids to the cold at the **Cryogenics Laboratory** (Map: B5) and see liquids at 2.2K with your own eyes. Take a spin on a levitating scooter at the **Superconductivity** site (Map: B4). Learn to move LHC magnets at **Large-Scale Metrology** (Map: I4). There are activities for kids all over the CERN site, so keep an eye out and enjoy!

MONDAY (AFTER WORK) IS PARTY TIME!

In this interview with Hermann Schmickler, CERN accelerator expert and, more recently, manager of the Open Day organising team, the *Bulletin* looks behind the scenes of the organisation of CERN's most popular events for the public. After the huge endeavour, the "Bosons&More" party awaits you too!



The Open Days core team. "In the early days of the preparations when we still had some spare time, we decided to take photos in two different dress codes to illustrate the spirit of "Bosons&More": formal evening dress and festival type clothes," says Hermann Schmickler. What will your dress code be on Monday evening?

When Hermann is asked "what did you like best about this whole adventure", he has no hesitation: "The team", he says. "We have a wonderful team of very motivated people." Let's make a rough calculation: the core team comprises 12 people; the enlarged team (logistics, communication, IT, etc.) comprises about two hundred people; and if we count the more than 2000 volunteers, you get the picture.

Coordinating the huge energy of thousands of motivated people is not an easy task. "It was not always easy to understand when people were overdoing it or doing actions in an uncoordinated fashion," Hermann admits. "However, we have come a long way to get here and have managed to avoid any major hiccups and to keep smiling."

Based on previous Open Days and on the

response to the ticketing system for the underground visits, CERN is expecting over 40,000 visitors each day. Pretty challenging for an "industrial site", as the safety experts would put it. Although the underground visits are obviously very popular, these Open Days also comprise over 30 different activities on the surface, for which the *Bulletin's* guide to the Open Days will provide a very useful complement to the official programme. "The amazing variety of initiatives and activities CERN will be offering on these two days builds on the enthusiasm previous open days generated," says Hermann. "CERN people want to take part in the event actively and are proud to show their work to the outside world. They are not doing it because they are asked to but because they want to."

Let's not hide it: these last few weeks and the Open Days weekend have been and will be very challenging for a large number of CERN people. Hence, this time, the "thank you" will not be confined to a reception for all volunteers two weeks after the event but will also feature the "Bosons&More" party on Monday evening. "We have sent out 12000 invitations, each for two people, which is ten times more than any other previous parties of this type," says Hermann. His accelerator expert soul clearly emerges when he explains the scope of the event. "We will celebrate the LHC machine, this unique instrument that will reach its design luminosity in just a few years' time. Its success is a great achievement for the thousands of people whom we want to celebrate at "Bosons&More" in addition to the physics discoveries."

Forget about the parking restrictions, the uncertain weather forecasts and even the tiredness: enjoy the Open Days and we look forward to seeing you at "Bosons&More"!

Antonella Del Rosso



FROM THE BEATLES TO BOSONS

Before embarking on a successful career as a musician, Alan Parsons started out as a sound engineer - earning his first credit on The Beatles' *Abbey Road*. Over the years, he has worked and collaborated with various artists, but 30 September 2013 marks a unique collaboration. For CERN's 'Bosons & More' party, Alan Parsons Live Project will be sharing the stage with the *Orchestre de la Suisse Romande*. Having already visited CERN in 2011, Alan Parsons provides an insight into his views on science and his upcoming performance at the 'Bosons & More' event.



Alan Parsons during his visit to CERN in August 2011.

Since visiting CERN in 2011, how have your feelings towards the Organization developed?

I was thrilled to hear about the recent discovery and how years of work had paid off. Together with my wife, Lisa, and my band, we were very privileged to come to CERN a couple of years ago, having been introduced by our good friends Patrick Geeraert (former Head of the Finance Department at CERN and now Director of Administration at ESO) and Simon Lowery (Communication Specialist at ESO). It was fascinating to find out about the work that goes on there, even without being able to go inside the accelerator. We have a great relationship with many people on the staff at CERN and we are so honoured to have been asked to perform at the special event on September 30th and looking forward to seeing the inner workings of the giant machine.

Can you give us some insights into what is in preparation for us at Bosons&More and

how your collaboration with the Orchestre de la Suisse Romande is going (see the article in this Bulletin)?

I have been in regular contact with Guillaume Bachelier, the Régisseur Général of the *Orchestre de la Suisse Romande* and his musicians and staff. It is always exciting to perform with an orchestra - we rarely get the opportunity. There are some songs - for example 'Silence and I' which realistically can only be performed with a large orchestra. All the scores are already in their hands and they will be rehearsing the music before we arrive as well as with the band.

Has science ever inspired your music?

Indeed it has. We were inspired to make an album called *I Robot* which was inspired by the well-known science fiction writer, Isaac Asimov. Another album, *Ammonia Avenue*, was inspired by the name of a street at a giant petro-chemical plant in Middlesbrough, England and attempted to criticise the

unnecessary deterioration of our planet through man-made means.

Do you think that scientists could be the rock stars of tomorrow?

I am bewildered by the complexities of science, particularly by the recent discoveries at CERN. These are very smart people. I have read numerous articles about the Higgs boson discovery and have talked to scientists about it, saying, "So what is it?" They explain it to me and then at the end of the conversation I say, "So what is it?" Scientists are already the stars of the modern age. Can I have their autographs please?

Interview by Stephanie McClellan



THEY WILL ROCK YOU!

On 30 September, CERN will be the venue for one of the most prestigious events of the year: the concert for the Bosons&More event, the Organization's celebration of the remarkable performance of the LHC and all its technical systems, as well as the recent fundamental discoveries. Topping the bill will be the *Orchestre de la Suisse Romande*, the CERN Choir, the *Zürcher Sing-Akademie* and the Alan Parsons Live Project rock group, who have joined forces to create an unforgettable evening's entertainment.



The Orchestre de la Suisse Romande, directed by Maestro Neeme Järvi, artistic and musical director of the OSR. (Image: Grégory Maillot).

From the Orchestre de la Suisse Romande...

Henk Swinnen, General Manager of the Orchestre de la Suisse Romande (OSR), answers some questions for the CERN Bulletin, just a few days before the event.

How did this project come about?

When CERN invited us to take part in the Bosons & More concert as part of the Open Days, we jumped at the opportunity.

Of course, we were also very excited about working with the Alan Parsons Live Project (see article in this issue). Playing alongside a master of symphonic rock is completely in line with the image we want to project of the OSR: an orchestra which is open to many different musical genres and rooted in contemporary musical society. We want people to know that our concerts are not elitist, but open to everyone.

Who is taking part in the concert?

Around 70 OSR musicians will be taking part, directed by Neeme Järvi, the OSR's Artistic and Musical Director. Planning has been quite complicated from a logistical standpoint, but everyone has been so motivated that things have kept moving along. And even in spite of the tricky organisation, we're always happy to be able to put on concerts in venues away from the Victoria Hall, where we usually perform.

The rehearsals with Alan Parsons will take place on the weekend of 28 and 29 September, just before the concert. But that's not unusual at this level because everyone is very professional and extremely well-prepared.

How do you feel with just a few days to go until the concert?

We're really happy to be part of this big celebration! It's one of the main events of the season. It's a real honour to share this special

event with the CERN audience, who we hope will be part of future OSR audiences too.

For more information on the Orchestre de la Suisse Romande, visit the OSR website: <http://www.osr.ch/>

From the CERN Choir...

Haude Morel, President of the CERN Choir Committee, gives us a backstage view of the CERN Choir's preparation for the Bosons & More concert.

Has the CERN Choir performed at this type of event before?

To my knowledge, no. We organise concerts on average twice a year in cathedrals, churches or concert halls, with an audience of several hundred people on average. We have never performed in the open air in front of thousands of people, as we will at Bosons & More!

How are you preparing for the event?

We have been rehearsing since mid-May (with a break in the summer) every Wednesday evening from 8 p.m. to 10 p.m. in the CERN Main Auditorium. We have also had two full weekends of rehearsal. We have really enjoyed preparing for this event with our Director, Gonzalo Martinez. We also had a rehearsal with Tim Brown, the Director of the *Zürcher Sing-Akademie* choir, with whom we will have the pleasure of singing on 30 September.

How do you feel at the moment? A bit nervous?

We are very excited and a bit nervous as well.

It will be an amazing and unique opportunity for us to sing alongside professional groups like the OSR, the *Zürcher Sing-Akademie* and the Alan Parsons Live Project in front of such a large audience.

Anything to add?

It's going to be a fantastic night! We hope the audience will enjoy Bosons & More as much as we have enjoyed preparing for it.

The CERN Choir is always happy to welcome new members. Currently, they are looking for sopranos, tenors and basses in preparation for their next event: celebrating 40 years of the Choir and 60 years of CERN in 2014.

For more information, go to the CERN Choir website: <http://club-choir.web.cern.ch/club-choir/>

Interviews by Anaïs Schaeffer

CERN CELEBRATES SCIENCE OVER AND OVER AGAIN!

CERN is getting ready to open its doors for two days of science and entertainment, but the celebrations don't stop here. From 9 October 2013, France's *Fête de la Science* will take up the reins. With more than 1,000 events all over France on the theme "From the infinitely large to the infinitely small", one of them is bound to be taking place near you.

The nearest one to CERN will be in Divonne-les-Bains. Put **Wednesday, 9 October** in your diary, because CERN will be taking part!

From 10.30 a.m., join the members of *Divonnelectro*, an association set up by a group of CERN retirees, for a visit to France's oldest hydroelectric factory.

At 2.30 p.m., head to the *Eplanade du Lac* in Divonne-les-Bains, where members of the *Université pour tous du Pays de Gex* will be offering an afternoon of instruction. Robert Jacob, former hydrogen bubble chamber technician at CERN and a member of the Université pour tous, will deliver a lecture entitled "De l'infiniment petit à l'infiniment grand avec 4 instruments d'observation" (from the infinitely large to the infinitely small with four observation instruments), in which he will answer some less than obvious questions, such as: What is the difference between a scan and an MRI? How does a GPS work? And what about the European Southern Observatory's telescopes in Chile?

After the lecture, adults and children will be invited to take part in a practical workshop led by Youri Robert, a member of CERN's Civil Engineering Group, Christian Lasseur, former leader of the Experiment Metrology section, and Aurélie Maurisset, surveyor for the CMS experiment. The session will include calculating positions using a GPS and reproducing objects in 3D using a laser

scanner capable of measurements to within 3 mm precision.

Finally, at 8.30 p.m., physicist Pauline Gagnon will give a lecture in the Globe of Science and Innovation entitled "Le boson de Higgs : mais qu'est-ce que ça mange en hiver? (et autres détails essentiels)".*

A programme that should be enough to whet everyone's appetite...

*Reserve your place at Pauline Gagnon's lecture by calling the CERN Reception on +41 22 767 76 76 or by sending an e-mail to cern.reception@cern.ch.

For more information about the events organised as part of the 2013 *Fête de la Science* in the Rhône-Alpes region, please visit www.fetedelascience-rhonealpes.com.

Anaïs Schaeffer



Parts of the programme from the Fête de la science in 2013 in the Rhône-Alpes region. Download the full programme: <http://www.ccsti01.org/altec/viewResource.html?file=a5bbae913f8a68f70140e9bbf9140fcf>

CERN: DIGITALLY OPEN, TOO

The Open Days are here!! From tomorrow onwards, we will be welcoming thousands of people to CERN. No barriers, no boundaries!

For decades, we have welcomed researchers and visitors from around the world to work at CERN, discuss physics research and attend our training sessions, lectures and conferences. This is how fundamental research should be conducted!!! But have you ever noticed how you are welcome at CERN in the digital world, too? Once you are affiliated and are registered with CERN, you receive a CERN [computing account](#) and [e-mail address](#). You can register your laptops, PCs and smartphones to use our (wireless) network, you can easily create your [personal webpage](#), and profit from a vast disk space for file storage ([AFS](#) and [DFS](#)). CERN is indeed an Open Campus and not only during the Open Days: CERN is an Open Campus in the digital world.

This digital Open Campus culture is exactly the reason why "computer security" has been delegated to you. With academic freedom comes responsibility for everything you do: you are responsible for the computer security of the laptops, smart phones and PCs you use, the accounts and passwords you own, the files and documents you store, the programmes and applications you have installed or written, and the computer services and systems you manage. Because we do not control the operating systems you run, we are not responsible for the programmes and applications you install and the webpages you browse ("[Why "Security" is not ME...](#)").

Alternatively, we could change that: we could block network access for every non-

compliant PC and laptop; we could close the CERN outer perimeter firewall completely and deny access to news pages, Facebook, YouTube and others; we could impose on you the Windows 7 and SCL6 operating systems; and we could allow only certain programming languages to be used. But dictating and restricting you would contradict the freedom and liberty of CERN's academic work. In fact, it would interfere with CERN's academic freedom, and we would rather get the balance right!

Therefore, while breathing the Open Campus air at CERN, that balance requires you to take your share: "["Security" is YOU!](#)" We are, of course, ready to help you take on this responsibility. If you feel uncomfortable with it, you can delegate that responsibility to the IT Department, which provides a multitude of secured computing services such as up-to-date operating systems, anti-virus software, protected file storage space, secured web servers and databases. [Contact them](#) and avoid reinventing the wheel (see our Bulletin article on "[Stop fighting alone, let synergy rule!](#)"). Rather, focus on your core work and don't fiddle with issues where you might not be an expert. Avoid the blunder of others who presented us with awesome web applications, fully functional with lots of bells and whistles, but which, after scrutiny, turned out to be flawed and posed a security risk to the Organization, and was eventually scrapped by a dismayed developer...

For further information, please check our dedicated [training sessions](#) on secure coding

Check our website for further information, answers to your questions or help, or write to Computer.Security@cern.ch.

If you want to learn more about computer security incidents and issues at CERN, just follow our monthly reports at: https://cern.ch/security/reports/fr/monthly_reports.shtml

Access the entire collection of Computer Security articles: <https://cern.ch/Computer.Security>

Computer Security Team



OMBUDS' CORNER: OPEN DOOR AND CONFIDENTIALITY

For the Open Days, CERN will be transparent for all visitors. It's also the occasion to remember that the Ombuds' door is fully open every day of the year for all persons working for or on behalf of CERN.

The door is open, but as soon as it's closed for a discussion, the office becomes a place where total confidentiality is preserved. This may appear as a contradiction, no? The Ombuds is available to help everyone in all circumstances, but his clause of confidentiality prevents him from acting without the consent of his "visitors". How can he possibly resolve the in-house conflicts in groups, or units, if all the parties do not voluntarily participate in its resolution?

The answer is clear: the job of the Ombuds is to help the parties resolve their conflict by themselves. He will provide a few rules of communication, a process of mutual respect, suggest some possibilities that the parties may want to follow, and mediate the dispute so that people may work and collaborate in a respectful way. It's like putting oil in a rusted engine to unjam it, but, that being said, the parties have to provide the fuel to start moving. If one side does not want to make it work, the process stops. The Ombuds can

only help resolve a dispute if the various parties recognise that there is a problem. They must engage each other and work in good faith with the Ombuds, and focus their will towards a positive resolution. It's essential that the parties have an open mind.

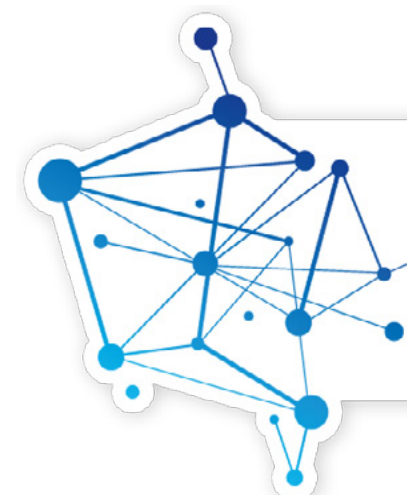
The Ombuds' door is open to everything: discussions, coaching, help, even compassion in difficult circumstances, and most importantly it is open to listen to you.

Let us take the occasion of these Open Days to remind ourselves about a culture of open minds, not only in research and administrative responsibilities, but in human relations. We are proud of showing our activities and successes to the public, which is great. In the same vein, let us also proudly show ourselves and the public that we work in a respectful workplace environment. Science, education, transfer of knowledge, along with the highest human respect among ourselves, inside our Laboratory and with all our users, will

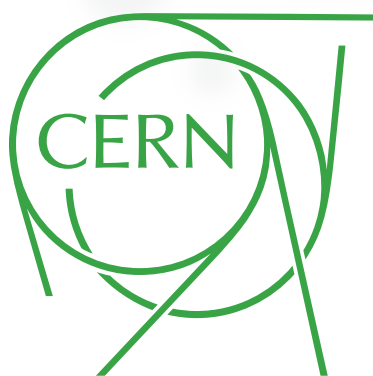
convince people that we are doing ethical research, open for the world and useful for humankind. May the spirit of these days open all our minds in that direction!

As a reminder, all previous Ombuds corners can be accessed in : <http://ombuds.web.cern.ch/fr/blog>

Vincent Vuillemin



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