

Communication and Outreach – by all of us – is critical for the future of HEP

Panel Discussion at ICHEP 2024, Prague

Matthew Chalmers, Sarah Demers, Spencer Kelly, Paris Sphicas, Daniel Stach

Moderated by Dave Barney & Connie Potter

Reason for panel discussion

HEP faces enormous challenges that put its future at risk, including:

- Small likelihood of major discoveries in the coming years
 - But huge progress in precision physics, that may point to deeper understanding
- “Competition” from other “big science” fields, such as astrophysics, AI, environment science etc.
 - So can we still attract the best scientists/engineers into our field?
- Cost of major new collider facility is large in absolute terms
 - Although cost per TeV will be lower than any present accelerator
- Environmental impact of any new collider facility
 - Electricity, construction etc. – but advances driven by HEP will limit this

Communication from **everyone** involved in HEP, and at all levels, will be critical in overcoming these challenges. This cannot be left to a handful of dedicated “outreach” activists!

Matthew Chalmers

Physicist, Communicator & Editor of CERN Courier



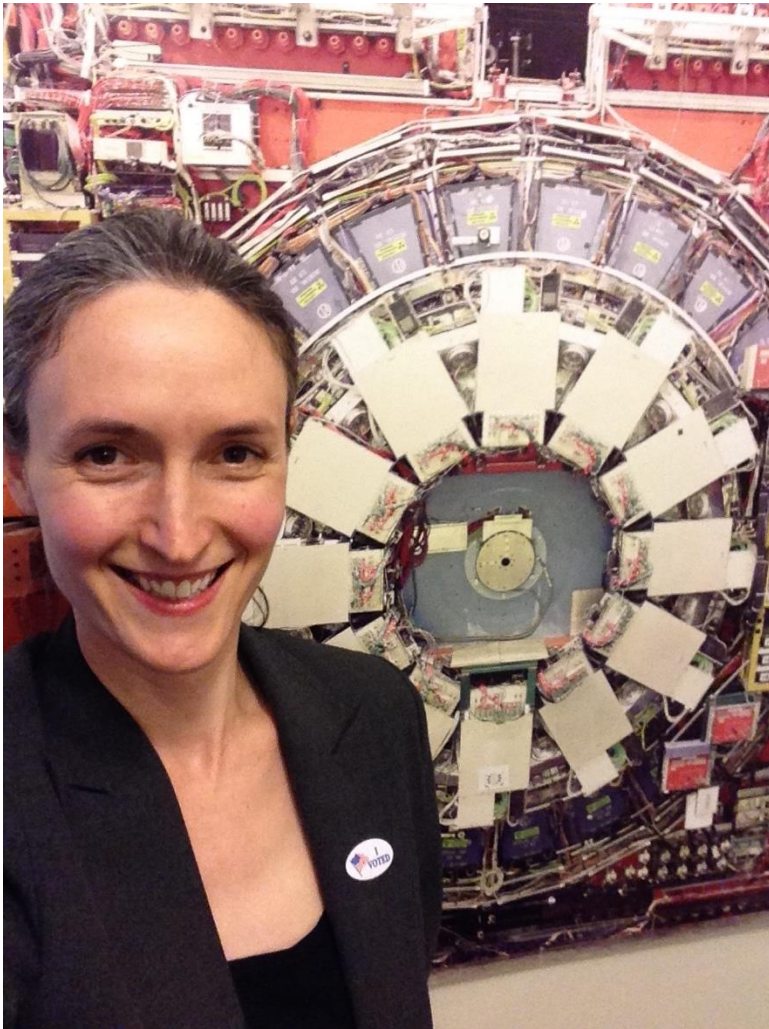
Matthew studied Physics at the University of Glasgow, where he continued for his PhD between 1996 and 1999 with the Aleph experiment, measuring the mass of the W boson. A couple of years later he moved to Imperial College London to take an MSc in Science Communication.

He then started his career as a professional science communicator with [Physics World](#) as a features editor for five years, followed by eight years as a freelance writer and a year working as a News Editor at [ESRF](#) (European Synchrotron Radiation Facility). In 2017 Matthew joined CERN as the editor of the [CERN Courier](#), a role he held until 2024. He is currently CERN's Head of Community Engagement.

Matthew's joint background in HEP and Communications has heightened his awareness of the critical role that Outreach/Communication plays in the continuation of the field, and the need to target all audiences, from politicians to the mass media, educators, general public and students of all ages.

Sarah Demers

Physicist and Communicator



Sarah is a Professor of Physics at Yale University and a member of the ATLAS and Mu2e Collaborations. She has coordinated data quality and data preparation for ATLAS, where she uses tau leptons to search for physics beyond the standard model, and she serves as the Mu2e trigger coordinator.

She is a passionate participant in many public engagement activities through writing, story-telling, and interdisciplinary collaboration. Her opinion pieces have appeared in [The Atlantic](#), [Inside Higher Ed](#), and on the [TED Blog](#) and her stories have been featured in [Story Collider](#). She has been a guest on the US [Science Friday](#) program and has been interviewed for National Public Radio's [All Things Considered](#) and on [NBC news](#).

She co-wrote the book [Physics and Dance](#) and created the short video [Three Views of the Higgs and Dance](#) with dancer and choreographer Emily Coates.

Spencer Kelly

BBC technology presenter and journalist



Spencer is the BBC's longest serving and most experienced technology presenter and journalist. He's been hosting [Click](#), the BBC Technology TV programme, since 2006 and, for more than 20 years, he's travelled the world, marvelling at how science and innovation is changing people's lives.

His academic background (a double first in Computer Science from Cambridge and an Honorary Doctorate in Technology) is only the beginning of his accolades: he's also won the T3 Tech Personality of the Year award, came a cruel second on [Celebrity Mastermind](#), fronted [Panorama](#), presented at the BAFTAs, and hosted three world firsts: 360 show in virtual reality; TV show filmed and edited solely on a mix of phones and tablets; and fought a wizard in a multi-choice factual programme that let the viewer choose their path through the stories.

His life-long love affair with science and tech has seen him play a robot at ping-pong in Japan, explore the Large Hadron Collider, get rescued by a robot lifeguard, and discover the life-changing impact of just one SIM card in the townships of Africa.

Paris Sphicas

Physicist, Communicator and current ECFA Chair



Paris has a long and distinguished track record in the physics of hadron colliders and is a leading figure in the search for physics beyond the standard model at CERN's LHC. He was deeply involved in the UA1 experiment at CERN and the CDF experiment at Fermilab, including the design and deployment of novel data acquisition systems and first measurements of heavy quark (b and top) production including the first evidence for the top quark. He has held many roles in his 30 years with the CMS Collaboration, including Physics Coordinator from 2006 until the start of data taking, and Deputy Spokesperson from 2014 to 2016. In 2019 Paris was elected as a Fellow of the Royal Society of the UK and the Commonwealth for his excellence in science.

He currently leads the CERN CMS Physics Analysis Group and was, in 2023, elected as the Chairperson of [ECFA](#) (European Committee for Future Accelerators).

He has extensive experience of HEP communications at all levels, including being the first CMS Education & Outreach Coordinator and EPPOG (now [IPPOG](#)) representative for CMS.

Daniel Stach

Journalist and Science Communicator



Daniel is a journalist, science communicator, television professional, and the host of prime time science programme “Hyde Park Civilization“ (interviews in English: www.hydeparkcivilization.com) and member of Science Department of Czech TV.

He has delivered special broadcasts on critical current event topics like the COVID pandemic or the war in Ukraine. He has also interviewed countless distinguished guests, including 41 Nobel Prize laureates, and did an interview with astronauts aboard the International Space Station.

He has earned recognition from the Czech Academy of Sciences and the Learned Society of the Czech Republic. He also received a Silver medal from the President of the Senate of the Parliament of the Czech Republic specifically "for his ability to enthuse and simply convey the complex". In addition, a minor planet – 93256 Stach – is named in his honour.

Daniel teaches at the Faculty of Social Sciences at Charles University. He is a long-time kayaker, runner and snowboarder who enjoys reading fantasy and sci-fi. He is married, has a son and a daughter, and the whole family is lucky enough to have their cat - Mr. Rozarka - let them stay with him.

Connie Potter

Event Producer in Science Communication & Outreach



Connie is a long-standing CERN staff member with a BSc (Hons) in International Studies.

She shares her work time between the CERN Communications group and the ATLAS experiment where her experience in event organisation and immersion in a world of physicists have led to ground-breaking programmes for CERN. In 2016 she co-founded the CERN Festival Programme (www.thebigbangcollective.com), taking science to new audiences at music & culture festivals. The programme now reaches over 20000 people each year and in many European countries.

Connie also founded the CERN Special Guest programme, welcoming the likes of Muse, Metallica, Jack White and Roger Waters for special visits of CERN. She is also co-editor of the first ever anthology of short stories of fiction : *Collision – Stories from the Science of CERN*.

In her free time, Connie co-founded, and is President of, the non-profit Swiss humanitarian association AidforAll (www.aidforall.ch)

Dave Barney

CMS Physicist and Head of Communications



Dave graduated from Imperial College London in 1990 with a BSc in Physics. His first experience of CERN was as a Summer Student in 1990 and was hooked on both CERN and HEP from then on. He stayed at Imperial for his PhD on beauty-particle observation in the CERN WA92 experiment and returned to CERN as a CMS fellow in 1994, becoming a staff member a few years later. He has led the CMS Preshower and ECAL projects and, since 2015, has been a senior member of the HGCAL upgrade project. He has, for the past eight years, led the CERN group responsible for operation and upgrades of the CMS experiment. For the past three years Dave has been a member of “The Nine”, the CERN senior-staff advisory group to the CERN Director General.

Dave was CMS’ Education & Outreach coordinator from 2000 to 2012, co-chair of [*IPPOG*](#) from 2009-2012, and was awarded the EPS Outreach prize in 2005. He returned to Education & Outreach in 2022, becoming CMS’ Head of Communications in 2023, and will give his second TEDx talk just after ICHEP!