

Science Europe Scientific Advisory Committee (SAC)
SYMPOSIUM – Brussels, 17th November

*“Building a Scientific Narrative on Impact
and Societal Value of Science”*

Session 1 – Fundamental research:
intrinsic value and long-term societal impact

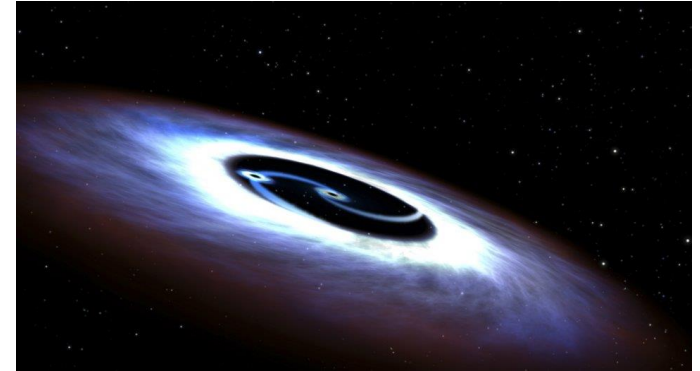
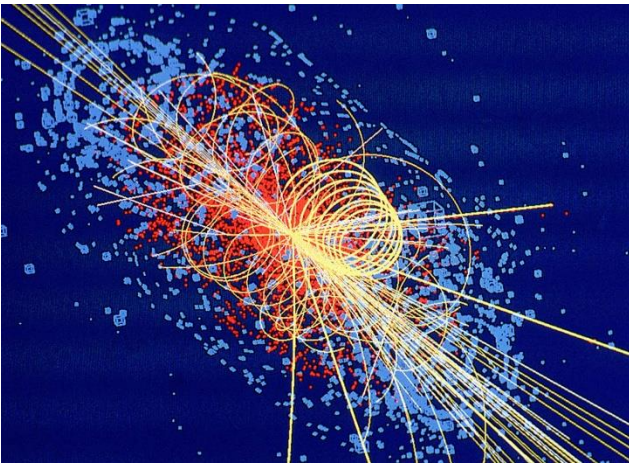
Susanne Siebentritt,

Head of Laboratory for Photovoltaics,
University of Luxembourg, Luxembourg

#SEimpact

Fascination

- discovery of gravitational waves
- discovery of the Higgs particle



- "A brief history of time" by Hawking
 - sold more than 10 million copies

understanding our world is a cultural necessity

Training

students who do research, learn

- how to think critically
- to pose question
- to solve problems
- to use creativity
- the knowledge of their field



Long term impact

- Hertz's electromagnetic waves
- Einstein's general theory of relativity
- Drude's investigation of the reflexion of metals
- Bardeen, Brattain and Shockley's work on semiconductor contacts



~~radio communication~~

~~correct GPS~~

~~transparent touchscreen~~

~~integrated circuits, processors, memory chips~~

the impact of research can be very long term

Unexpected effects

- discovery of DNA: fundamental biology
genetics
- number theory: esoteric field of math
cryptography
- laser: "a solution without problem"
glass fibre, DVD, forensic, land surveying...

We don't even know the **questions of tomorrow**

To allow answers to future problems,
we need to do research beyond today's challenges