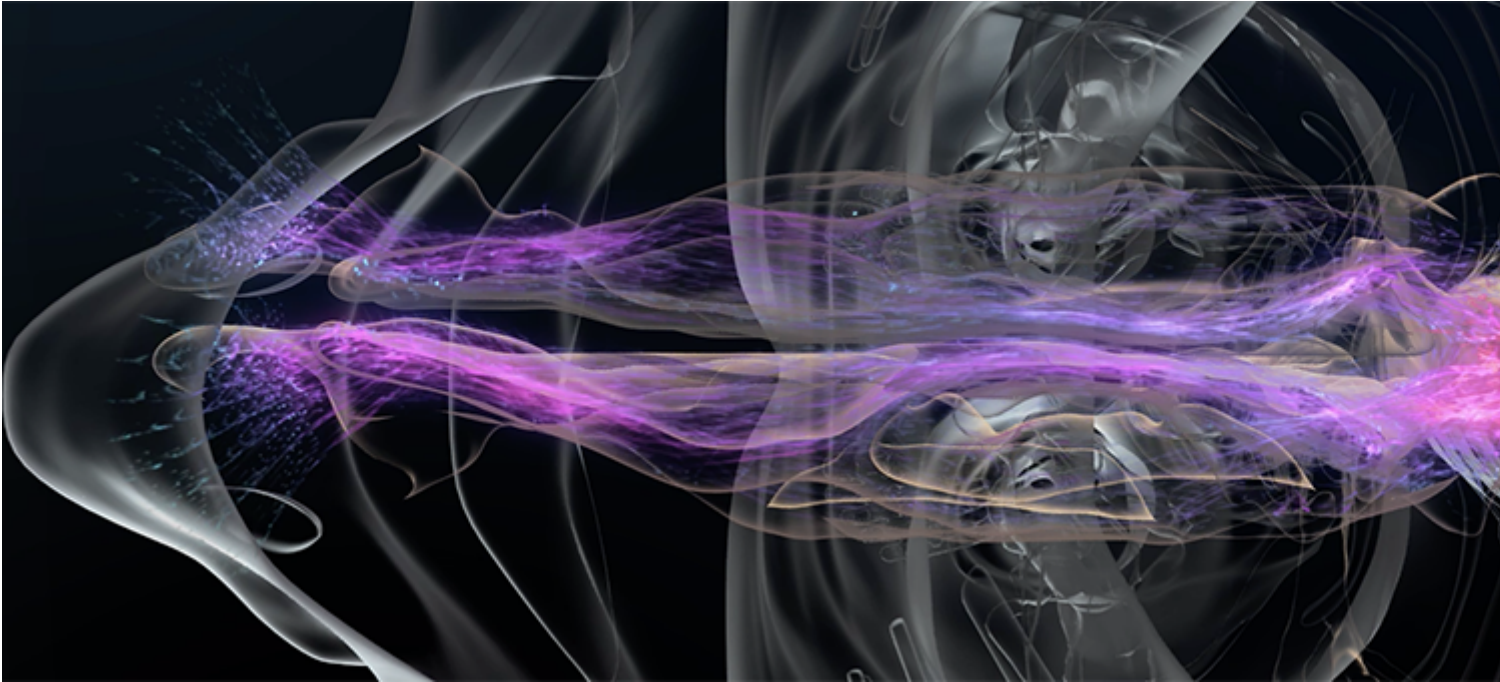


Scientific Visualization and storytelling



Science needs to be shared among peers to foster its advance, and it needs to return to society to close the investment cycle. We develop visual strategies to help scientists to communicate their research, trying to find the most suitable solution for each dataset and for each story.

Summary

We create products to communicate scientific research in the most effective ways possible by combining scientific data visualization, storytelling, and CGI.

Our two major targets are Scientists and Society.

We produce the most suitable solutions depending on the characteristics of the research project, the type and origin of the data, and the intended audience. Our products may be movies, images, or interactive displays, and can be used for dissemination and outreach, technical reports, or as visual analysis tools.

Our work is mostly based on large datasets resulting from computer simulations that use HPC resources. Thus, apart from applying our background in graphic design, film production and visual communication, we develop a variety of programs, plug-ins, and pieces of code to grab, process, and convert simulation data to suitable formats. A key part of our team's workflow is the constant collaboration between scientists, programmers, and designers to create imagery that is scientifically accurate and visually engaging at the same time.

The team blends commercial image generation software with in-house data management tools into a pipeline able to process the large volumes of data generated by high performance computations. Most important in the team's workflow is the constant collaboration between scientists, programmers, and designers to create imagery that is scientifically accurate, visually engaging at the same time.

The dissemination work of the team is best exemplified by its short documentaries featuring hyper-realistic renderings of data visualizations and carefully crafted scripts. For its documentary "[Alya Red: A Computational Heart](#)", the team won the 2012 International Scientific Visualization Challenge organized by the National Science Foundation and the Science journal. The video shows beautiful renderings of simulations of a beating heart in which the coupled mechanical and electrical problems are solved simultaneously. More recently, the group released "[Supercomputers](#)", a short documentary about the impact of high performance simulations in science and our daily lives. The highly realistic renderings of simulation data are shown integrated with live image interviews of the very scientists that work on this data. The 15 minute video received multiple awards at film festivals, including a win in the science and engineering category of the international Biennial of Scientific Cinema. A collection of dissemination and technical videos created by the group is available at the [BSC's Youtube channel](#)

Objectives

- Create compelling and accurate visualizations using scientific data.
- Explore efficient ways to represent complex data.
- Devise visualizations for scientists to efficiently communicate their data to their peers.
- Communicate the results of research projects to the wider public through dissemination media.
- Develop proprietary tools to process and convert data to standard, commercial formats.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

Source URL (retrieved on 3 des 2022 - 11:14): <https://www.bsc.es/ca/research-development/research-areas/big-data/scientific-visualization-and-storytelling>