

# Communication about QSE in Competence Centers: CSH

by Kevin Heng & Kalinka Huber

The Center for Space and Habitability (CSH) is an international research center of excellence at the University of Bern. Its mission is to perform disciplinary and interdisciplinary research in the formation, detection and characterization of planets beyond Earth, the definition of life and our search for it elsewhere in the Universe, and the implications for disciplines outside of the sciences. There is an important distinction between the CSH and the PlanetS National Center of Competence in Research (NCCR). PlanetS is focused on the unification of Swiss expertise in planetary and exoplanetary science. The CSH is interested in the diversification of expertise, beyond planetary and exoplanetary science (geology, atmospheric and climate science, chemistry, biology), especially from an international perspective.

The intellectual core of the CSH is constructed upon its Fellowships, which maintains a team of 8 to 10 young, dynamic and intellectually independent postdoctoral researchers, who are competitively selected to perform cutting-edge and world-class research. The CSH Fellowship is offered for a duration of 3 years and is aimed at augmenting the existing expertise in Bern. The Bernoulli Fellowship is offered for a duration of 4 years and is designed to formalize collaborations between the CSH and its international partners. Each Bernoulli Fellow spends 2 years at the CSH, followed by 2 years at its partner institute or university (or vice versa). The CSH and Bernoulli Fellowship programs were modeled after the NASA Fellowship programs and similar fellowship programs at leading research centers around the world. Additionally, the CSH maintains an active and professional CSH Visitor's Program to regularly host seminar/colloquium speakers at the University of Bern. It includes the CSH Visiting Professorship, which is aimed at attracting prominent researchers to spend their sabbaticals at the University of Bern. The CSH is active in the organization of conferences.

The CSH maintains a small non-academic staff consisting of a secretary, a comptroller, a public relations officer and an observatory manager. All of the non-academic staff are part-timers. They all meet every 2 to 3 months for updates on major developments. Additionally, the CSH director meets with each staff member, on a daily to weekly basis (when necessary), to discuss minor developments and day-to-day operations.

The CSH is advised by the CSH Steering Committee (SC) consisting of 5 professors. The SC is chaired by one of these professors. SC meetings are called at least twice a year by the CSH director to discuss major decisions taken by the CSH. It is the responsibility of the CSH director to regularly inform the steering committee of achievements and developments, and also to set the annual budget of the CSH.

The CSH is committed to both producing significant, world-class research and developing the intellectual leaders of the future. Both goals require consistent, focused and mentally disciplined interaction across all seniority levels. This is especially crucial for young researchers to experience intellectual growth and development. Interdisciplinary research has the added demand that one has to be adept at the different terminologies and cultures inherent in the various disciplines, in order to avoid the trap of falling into the fringes of disciplines (such that one's work is ostensibly in two disciplines, but is in reality accepted by neither of them). As such, the CSH maintains a series of interaction mechanisms (coffee discussions, research lunches, seminars, colloquia, lecture series, etc) to promote the exchange of ideas across the various departments and disciplines associated with the CSH. The CSH and Bernoulli Fellows assume leadership roles in implementing these interaction mechanisms.

It should not be overlooked that interdisciplinary research may occur in two ways. The first way, which is easier to report on paper, is a collaboration between researchers from different disciplines and departments or even faculties within the University of Bern. This is a "top down" approach,

where the rules of engagement are usually set by the professors. The second way is a “bottom up” approach, where a researcher, who is already adept at one discipline, decides to teach herself or himself about another discipline. While such progress is more difficult to quantify, it should not be discouraged or dismissed. At the CSH, we encourage both forms of interdisciplinary research and are specifically focused on creating an environment where it is possible for the “bottom up” approach to flourish.

The CSH and Bernoulli Fellows are chosen via a transparent and competitive process. The selection of these Fellows arise from a strategic balance between strengthening existing expertise at the University of Bern, bringing in new and complementary expertise, and selecting individuals who have the promise to move on to professorships or permanent teaching/research positions in the future. First, job advertisements are posted on international job forums requesting for a research proposal, CV and letters of recommendation. Second, the CSH director and SC construct a shortlist of the best candidates and invite them for job talks and interviews at the University of Bern. Third, upon discussion among the CSH director and SC, offers for the Fellows are made only to the best candidates. Once employed, the Fellows write annual reports to the CSH director to provide updates on their achievements and progress. Each Fellow is granted a small research budget and full intellectual independence.

The CSH is also motivated to secure third-party funding, including European Research Council (ERC) grants and Swiss National Science Foundation (SNF) Professorships. The CSH director is responsible for identifying outstanding individuals to compete for these research grants. The CSH website maintains a list of Swiss, European and international grants that individuals may compete for to bring to the CSH.

The CSH contributes to the system of quality assurance and quality development (QAD) that is currently being implemented at the University of Bern, which is aimed at fulfilling the national criteria and standards for an institutional accreditation. QAD is one of the goals in the performance mandate (*Leistungsauftrag*) the CSH has received from the University directorate. The CSH is committed to writing an annual report to the University directorate to summarize the developments and achievements en route to fulfilling the goals set in the performance mandate. A year before the 4-year performance mandate expires, the CSH writes a self-evaluation report that is submitted to the University directorate, which serves as a basis for preparing and granting a new performance contract.

Responsibility for the QAD ultimately lies with the SC. The CSH director is responsible for controlling processes and procedures.

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