Thematic Areas

Environment and resources

Responsible digital transformations

Health and wellbeing

Environment & Resources

Understanding life on Earth – its origins, prevalence, and interactions with the environment – is essential for addressing the most pressing questions and challenges humanity faces today and will encounter in the future. To effectively tackle the interconnected global crises impacting the Earth systems, we must recognize and respect planetary boundaries, promote the respon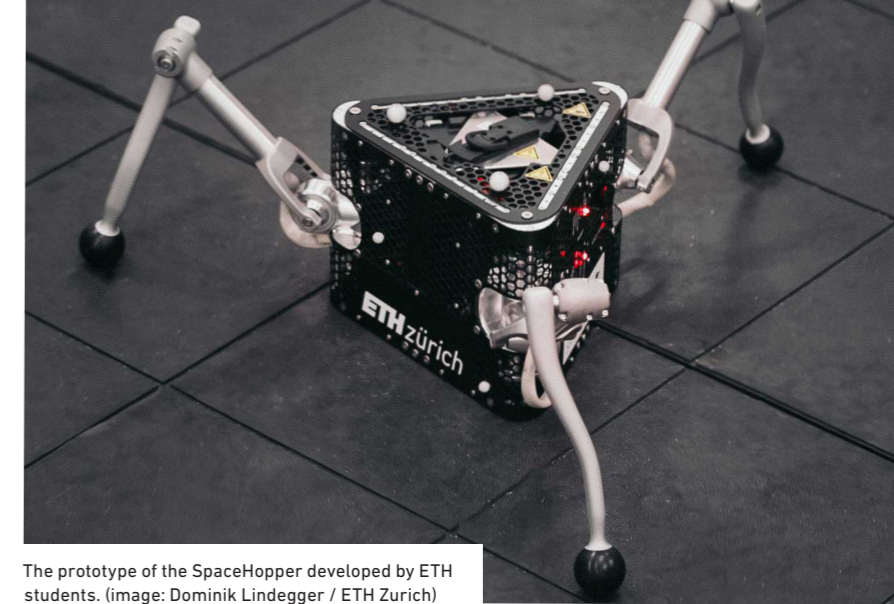sible use of both biotic and abiotic resources, and the value of exploring the fundamental biological questions that illuminates the complexities of the natural world. Addressing the challenges of our planet also calls for expanding our perspective beyond Earth, deepening our understanding of planetary systems, and exploring the broader Universe to gain insights that can guide our stewardship of Earth.

Developing solutions to reduce the silting up of reservoirs. Here the Lac des Dix in the canton of Valais. (image: Adobe Stock / Viacheslav)

The prototype of the SpaceHopper developed by ETH students. (image: Dominik Lindegger / ETH Zurich)

Responsible Digital Transformations

Digital technologies and data science have recently achieved remarkable breakthroughs, largely driven by advanced algorithms, sophisticated statistical models, and the ability to process vast amounts of data with high computing power. These advances have created opportunities for new industries and business models while also having the potential of disrupting traditional sectors, reshaping workforces, challenging existing social and political structures, as well as legal and ethical standards. The digital transformation risks widening social disparities, increasing environmental impacts and is also raising concerns about energy consumption. These transformations also play a crucial role for ETH Zurich in shaping its research, teaching, operations and enhancing its societal contributions in an increasingly digital world.

Health & Wellbeing

Every aspect of life and the environment impacts human well-being, which encompasses the complex interplay of physical, mental, emotional, and social health. The health sciences are experiencing rapid and continuous transformation, driven by advances in nutrition, environmental research, preventive practices, and health and clinical research at all scales. This progress is further enhanced by the development of innovative medical and health-related engineering solutions, as well as data-driven insights and public health monitoring and surveillance. The potential for improving human health and well-being is significant when traditional disciplinary boundaries, such as those between biology and engineering, are transcended.

Researchers have found a way to produce and test huge collections of molecules, known as DNA-encoded chemical libraries (DEL). (image: Adobe Stock / AI edited montage: Anouk Schuler / ETH Zurich)