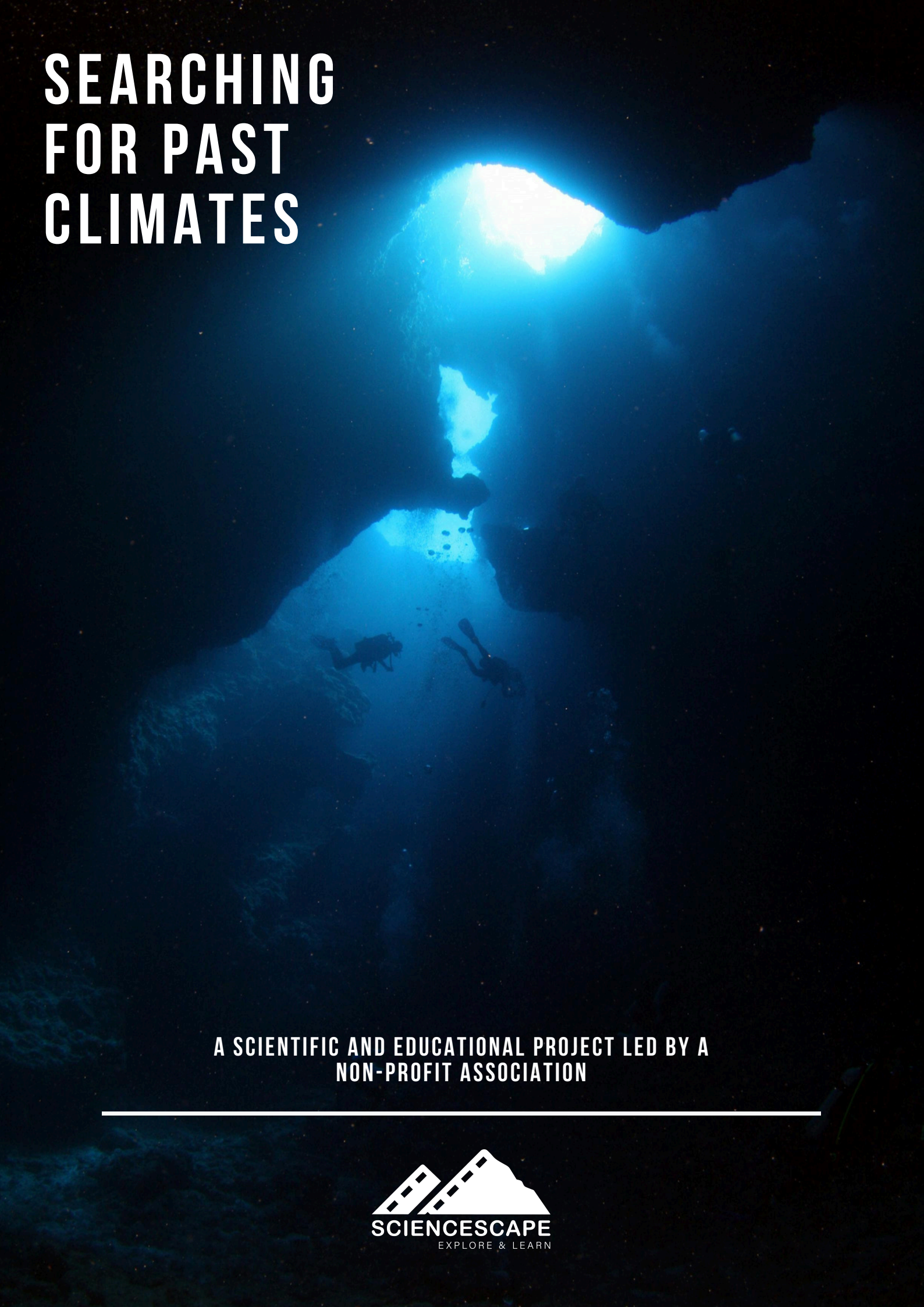
SEARCHING FOR PAST CLIMATES



A SCIENTIFIC AND EDUCATIONAL PROJECT LED BY A NON-PROFIT ASSOCIATION

SCIENCESCAPE
EXPLORE & LEARN

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SUMMARY

"Searching for Past Climates" is an educational project centered on a 52-minute documentary focused on groundbreaking research aimed at deciphering the subtropical climate of the past 600,000 years through the analysis of stalactites and stalagmites collected from an underwater cave network in the Turks and Caicos Islands.

This documentary will highlight a crucial scientific theme for our times, set in a spectacular background that shows stunning images and presents an exceptional scientific adventure. The film will feature discovery and curiosity, scientific precision, exploration, and physical and technical feats during demanding dives in winding underwater caves.

The film will serve as an educational tool, distributed among various channels. It aims to inform and educate the general public while inspiring younger generations by demonstrating the importance of science and fostering interest in scientific careers. In addition to online and TV broadcasts, screenings at numerous film festivals and scientific conferences, interactive public screening events, and an exhibition showcasing the scientific missions will be organized to strengthen the connection between science and society.

During these screening events and as part of the exhibition, the public and school students will have the opportunity to interact with scientists, handle geological samples, understand the research techniques used, and discover the challenges researchers face in extreme environments. This will allow everyone to ask questions and engage actively in scientific dialogue while exploring an exciting research topic.

In summary, "Searching for Past Climates" is much more than just a documentary; it is an educational and immersive adventure that aims to spark curiosity, convey major scientific messages, and encourage a new generation of scientists.

AN EDUCATIONAL PROJECT ON A CRUCIAL THEME LED BY A NON-PROFIT ASSOCIATION

ABOUT SCIENCESCAPE

A SWISS-BASED ASSOCIATION RECOGNIZED AS BEING OF PUBLIC UTILITY

"THROUGHOUT OUR ACADEMIC JOURNEYS, IT BECAME EVIDENT THAT THE BRIDGE BETWEEN SCIENCE AND SOCIETY WAS STILL A NEW AND FRAGILE CONCEPT, PARTICULARLY DUE TO THE OFTEN INAUDIBLE SPECIALIZED SCIENTIFIC DISCOURSE FOR THE GENERAL PUBLIC. THIS MOTIVATED US TO ENGAGE IN EDUCATION, COMMUNICATION, AND SCIENTIFIC OUTREACH, ESPECIALLY IN NATURAL SCIENCES, WHICH ARE STILL UNDERREPRESENTED IN THE MEDIA."

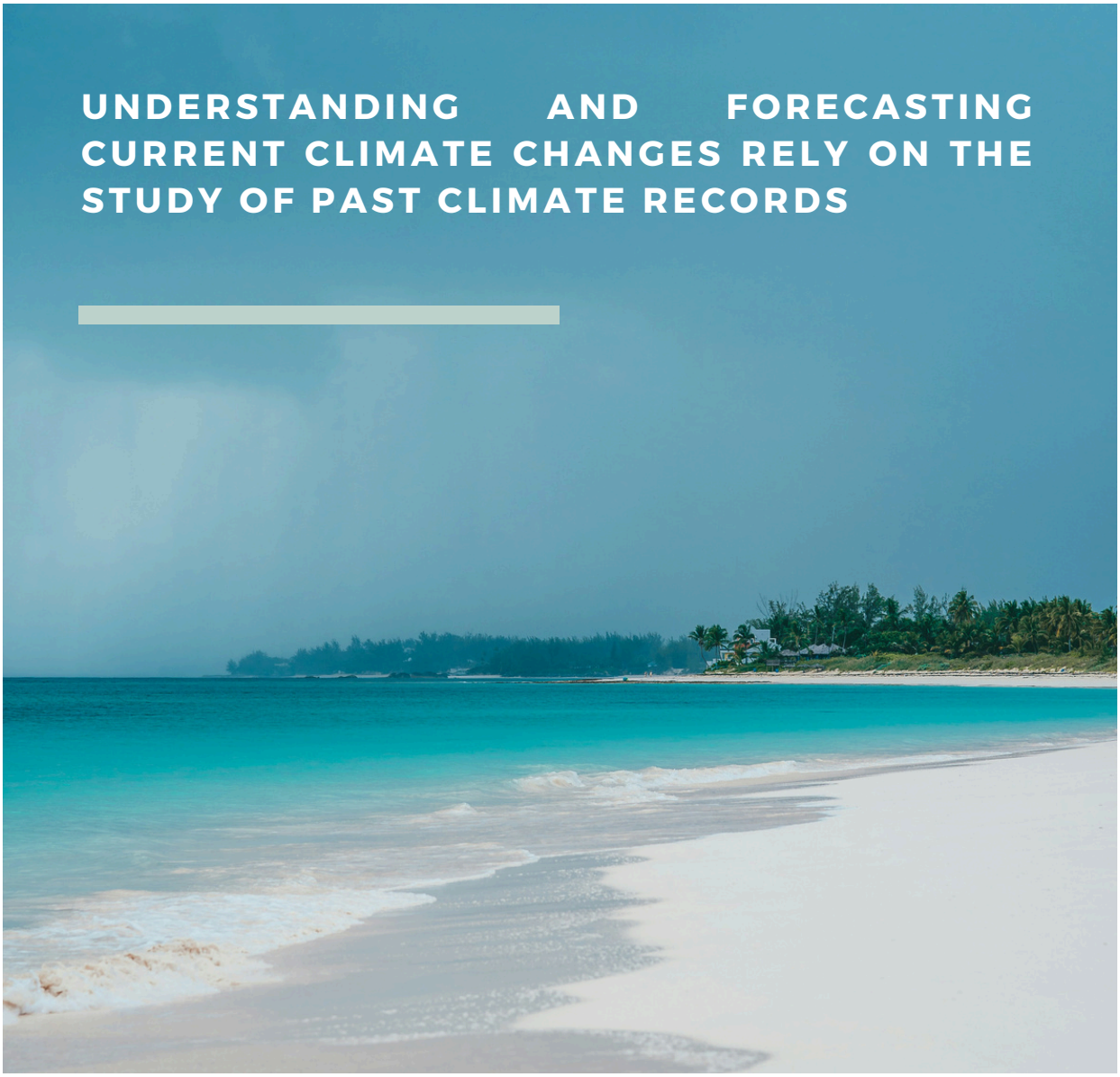
– LUCAS VIMPERE,
CO-FOUNDER OF SCIENCESCAPE

SCIENCESCAPE
EXPLORE & LEARN

SciencEscape, a non-profit association based in Geneva, Switzerland, and officially recognized as a public interest organization, is dedicated to sharing the passion and knowledge of scientists through aesthetically pleasing, educational, and freely accessible videos. Its founding members, researchers in geosciences specializing in analyzing past climate changes worldwide, believe it is their responsibility to share the keys to understanding certain scientific topics with a broad audience. With this goal in mind, they established an association aimed at highlighting research topics that impact society through scientific exploration and field adventures by naturalists.

INTRODUCTION

CONTEXT



The significant fluctuations of climate and sea level over the past 600,000 years have profoundly transformed landscapes, ecosystems, and human civilizations. **Understanding Earth's dynamics during this period provides valuable insights into natural climate variations and helps assess the impacts of current human-induced climate change**. While past climate variations are well documented in the North Atlantic, they are still poorly understood in subtropical latitudes. The Lucayan Archipelago, including the Bahamas and the Turks and Caicos Islands, contains essential natural records for studying ancient climate dynamics and sea level variations.

INTRODUCTION

THE SCIENTIFIC STUDY TO DOCUMENT

The educational project "Searching for Past Climates" aims to highlight an innovative scientific initiative led by Dr. Lucas Vimpere from the University of Geneva 🇨🇭, in collaboration with renowned researchers from the University of Basel 🇨🇭 and Carleton University 🇨🇦.

This scientific study will provide a new perspective on the climate of subtropical regions and sea levels over the past 600,000 years. To achieve this, researchers will collect and analyze carbonate formations (stalactites and stalagmites) from caves now submerged below sea level. These carbonate formations are valuable archives for reconstructing precipitation, temperature, vegetation, and sea levels with great precision.

With growing interest in studying ancient sea levels and climate, the results of this research project will have significant international impact. The findings will contribute to a better understanding of the impacts of climate change in a region that has been relatively under-studied.

HIGHLIGHT AN INNOVATIVE RESEARCH PROJECT

An ambitious research project, supported by various prestigious institutes, aimed at addressing the following questions:

- How has sea level fluctuated over the past 600,000 years?
- How are these variations related to the spatial distribution of past ice sheets?
- How have temperature and precipitation evolved during this period?
- What were the major large-scale climate forcings driving these fluctuations?

DOCUMENTARY PROJECT

THE CORE OF OUR INITIATIVE

The heart of the project "Searching for Past Climates" will be represented by a captivating 52-minute documentary, which will spotlight the scientific missions conducted in the Turks and Caicos Islands, as well as the preparatory work and chemical analyses performed in the laboratory. This documentary will allow the public to closely follow the progression of this innovative research.

The researchers have planned two field missions. The first mission, focused on exploration and mapping, aims to identify the underwater caves where carbonate formations, such as stalactites and stalagmites, can be collected. They will use cutting-edge technologies, including underwater drones, sonar systems, and advanced diving techniques. This phase will create a detailed map of the underwater caves and identify potential sampling sites.

The second mission will be dedicated to collecting and sampling the carbonate formations identified during the first mission. Researchers will use tools specially designed for use by divers operating in extreme conditions. These tools must be effective in deep environments with low visibility, restricted movement, and limited working time due to pressure. Divers will face challenges such as strong currents, reduced visibility, and maneuvering in confined spaces.

The documentary will be rich in images and information, offering a complete immersion in the project. It will showcase breathtaking underwater landscapes, with images of unexplored caves and beautiful carbonate formations. Sequences will feature divers in action, preparing their equipment, exploring the caves, and collecting samples under extreme conditions. Viewers will get an insider's view of a scientific mission, from preparation on the boat to analysis in the laboratory.

The film will include interviews with locals who will share their knowledge and perspectives on the caves, and with scientists who will explain the goals and implications of their research. Detailed sequences will also show the chemical analysis of the samples, illustrating the complexity and scientific rigor required to interpret the collected data.

PARTICIPANTS

RENOWNED SCIENTISTS AND LOCAL STAKEHOLDERS

The research team responsible for the study project will play a central role as the main contributors. However, the project also plans to gather testimonies from local residents and scientists.

DR. LUCAS VIMPERE
GEOLOGIST - UNIVERSITY OF GENEVA
PROJECT LEADER

PROF. DOMINIK FLEITMAN
GEOLOGIST AND PALEOCLIMATOLOGIST
UNIVERSITY OF BASEL

BRYAN NAQQI
ASSISTANT DIRECTOR OF RESEARCH
DEPARTMENT OF ENVIRONMENT AND COASTAL
RESOURCES IN TURKS AND CAICOS ISLANDS GOVERNMENT

DR. PETER CROCKFORD
GEOLOGIST
CARLETON UNIVERSITY

TARGET AUDIENCE AND IMPACT

With your support, we will have the opportunity to produce a documentary that highlights the extraordinary work of scientists in the field, immersed in a stunning oceanic setting. This film will capture not only the achievements of these intrepid researchers but also the complex challenges they face during field missions and laboratory experiments.**

The goal is to create a film that is both captivating and informative, exploring a crucial theme for understanding our climate. By utilizing scientific data, it will allow a broad audience to become familiar with a trending topic while strengthening the connection between science and society through personal stories and fascinating scientific adventures.

Through this documentary, the public will follow a team of renowned scientists in their quest to understand past climates. By addressing a critical theme related to climate understanding, the project will highlight current issues in climate research, such as sea level rise and climate change in subtropical regions. The project aims to raise awareness about the importance of scientific research in fighting climate change, while offering a unique perspective on the innovative methods used to study our planet's natural records.

An essential aspect of this project is to spark the interest of teenagers and young adults in natural sciences. By inspiring future generations, it seeks to ensure the continuity of scientific inquiry and encourage young minds to pursue careers related to the preservation of our planet.

Ultimately, this film will be a living testament to the dedication of the scientific community to climate causes, while helping researchers better communicate their crucial work and ensure the longevity of their studies.

DISSEMINATION AND AVAILABILITY

DISSEMINATION CHANNELS

SciencEscape's primary goal is to share the passion and knowledge of scientists with the widest possible audience. To achieve this, we use our productions as communication tools, disseminating them through various channels to reach the broadest public.

The 52-minute documentary is specifically designed for television and web distribution. Additionally, we plan to implement other interactive distribution channels to facilitate engagement between the scientific community and the general public.

These channels will include public screening events followed by panel discussions between scientists and the audience, an exhibition showcasing the scientific missions, and participation in various scientific film festivals and conferences. Furthermore, we will maintain continuous communication on social media to foster conversations around the themes addressed in the documentary.

We are also committed to making the film available to all interested partners, particularly for educational purposes, including the future local ethnography museum in the Turks and Caicos Islands. This will help widely disseminate scientific knowledge and inspire new generations to engage with science and environmental preservation.

By combining these approaches, SciencEscape aims to broaden access to science and stimulate public interest in contemporary scientific issues, thereby strengthening the connection between science and society.

DISSEMINATION AND AVAILABILITY

DISSEMINATION CHANNELS

1. PUBLIC SCREENINGS

Public screening events will be carefully organized to strengthen the direct connection with the audience and deepen the discussion around the documentary. Currently, three events are planned at the University of Geneva, the Natureum in Lausanne (Palais de Rumine), and the University of Basel. However, we aim to establish additional events in collaboration with project partners, both in Switzerland and abroad.

These public screenings will offer much more than just viewing sessions. Following the documentary, attendees will have the opportunity to participate in a panel discussion moderated by climate specialist journalist **Rachel Barbara Häubi**, a member of SciencEscape, alongside scientists featured in the film. These discussions will provide in-depth context and allow the audience to ask direct questions and engage in meaningful dialogue. The evenings will also include a social and convivial gathering, giving participants the chance to continue the conversation while enjoying food and drinks. These initiatives aim to create a rich experience for the public, fostering dialogue on the crucial issues related to understanding the climate system.

DISSEMINATION AND AVAILABILITY

2. EXHIBITION AND GUIDED TOURS

In addition to the panel discussions following the public screenings, we plan to create an exhibition on the research project to forge an even closer connection between the public and the scientists. This exhibition will immerse visitors in the daily lives of the scientists through the display and presentation of various items representative of the research mission.

Visitors will be able to explore some of the tools used by geologists and divers, such as sampling instruments, underwater maps, and an underwater drone. Additionally, some documents used by the research team to prepare the mission will be on display. One or more stalactites collected from the explored underwater caves will be highlighted, showcasing the different stages of transformation (cutting, polishing, micro-sampling) required for geochemical analysis. These items will be accompanied by simplified scientific explanations outlining the mission's objectives and its significance for climate understanding.

The exhibition will also feature numerous professional photographs taken by the talented photographer **Ambre Peyrotty**, who will join the research team to capture all stages of their fieldwork. This will provide visitors with a photographic insight into the behind-the-scenes work as well as the making of the documentary, which will also be screened within the exhibition.

The exhibition will be held in the exhibition hall of the University of Geneva for a minimum of one month, allowing for numerous guided tours. These tours will be conducted by the scientists and filmmakers for both the general public and schools. We plan to organize school trips where students can first view the film and then participate in a guided tour with the scientists to see the objects and people featured in the documentary. These school events will be structured to facilitate substantial interactions between students and scientists. These interactive discussions aim to spark students' curiosity and engagement with climate issues while broadening their understanding of the topics covered in the documentary. The exhibition will later be available to be presented in other cities in Switzerland or abroad.

DISSEMINATION AND AVAILABILITY

DISSEMINATION CHANNELS

3. TV DISTRIBUTION

Following production, the documentary will be proposed to various broadcasters, including, RTS and Léman Bleu in Switzerland, with whom SciencEscape already collaborates for the distribution of past and ongoing projects.

International TV channels such as Arte will also be approached. Given the subject matter, this project is sure to be of great interest to these broadcasters. The format of the film is specifically tailored to fit the editorial lines of these major networks.

4. WEB DISTRIBUTION

In agreement with other broadcasters, the documentary will be made available on SciencEscape's YouTube channel and promoted across additional platforms (Instagram, LinkedIn, X). The film will also be widely disseminated within our extensive academic network, the research team's network, and on the social channels of SciencEscape's partners (SCNAT, Réseau Romand Science et Cité, Café des Sciences, etc.). The film will be subtitled in French, English, Arabic, and German to reach a broad national and international audience.

DISSEMINATION AND AVAILABILITY

DISSEMINATION CHANNELS

5. FESTIVALS AND CONFERENCES

The film will be screened at several Swiss and international film festivals, that attract hundreds of attendees over multiple years. Most SciencEscape productions have already received numerous awards at various festivals. Additionally, the film will also be presented and broadcast at various international geoscience conferences, that draw tens of thousands of participants (AGU, EGU, IAS, Bathurst, etc.).

6. EDUCATIONAL SUPPORT

Thanks to the extensive academic network of SciencEscape members and participating scientists, the project will be used in Swiss and international schools and universities as an educational support tool. This is already the case for the majority of SciencEscape productions.

PROJECT LEADERS

A MULTIDISCIPLINARY TEAM COMBINING SCIENCE, ART, AND OUTREACH

The comprehensive production of this documentary project will be overseen by **Giovan Peyrotty** and **Lucas Vimpere**. As professionals in documentary filmmaking and geosciences researchers, these two collaborators have jointly developed this documentary project. They will be supported by a skilled team with whom they have already collaborated successfully: **Rachel Barbara Häubi, Jonathan Moy de Vitry, and Ambre Peyrotty**.

Director, co-founder of SciencEscape

Giovan earned a PhD in geology from the University of Geneva. One of the objectives of his doctoral work was to highlight certain global environmental changes that occurred before and after the 4th mass extinction, through the study of fossil tropical carbonates.

President, co-founder of SciencEscape

Lucas earned a PhD from the University of Geneva, specializing in climate science and its impact on reefs and coastal desertification. He has explored sites such as the Zuytdorp Cliffs in Australia and the blue holes in the Bahamas to study the impacts of climate change.

Their Filmography

- The Guardians of the Past of Menjez – 15' – In Progress
- Fire and Coral: The Fragile Balance of the Caribbean – 26' – In Progress
  Awarded the SCNAT 2024 Media Newcomer Prize
- Decoding Climate: A Journey Behind the Scenes of Our Planet – 90' – In Progress
- Beneath the Surface of Kilauea: A Mysterious Network of Faults – 10' – 2023
- Folds Through Time – 15' – 2023
- Tracing Archosaurs at Émosson – 9' – 2023
- The Hidden Treasures of the Lebanese Mountains – 9' – 2022
  Awarded the SCNAT 2022 Media Newcomer Prize
- The Eruption of Cumbre Vieja, La Palma, Canary Islands – 6' – 2022
  Honorable Mention at the Earth Futures Festival UNESCO (New York)
  Official Selection at the Global Science Film Festival (Bern)
- At the Heart of Swiss Glaciers – 5' – 2022
  Official Selection at the Earth Futures Festival UNESCO
- Icelandic Eruption: The Fagradalsfjall Volcano – 10' – 2021
  Public Prize at the International Docs & Screenings Festival
  Official Selection at the Rencontres Montagnes & Sciences Festival

PROJECT LEADERS

A MULTIDISCIPLINARY TEAM COMBINING SCIENCE, ART, AND OUTREACH

RACHEL BARBARA HAÜBI

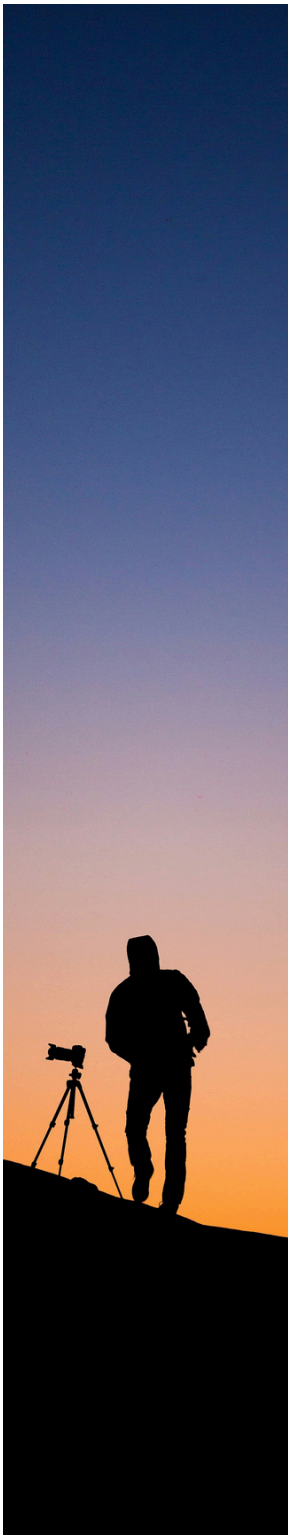
Rachel, a Swiss-English journalist specializing in video and investigative journalism, was trained in geography at the Academy of Journalism and Media. In 2021, she investigated mining conflicts related to the energy transition by spending two months in the Norwegian Arctic with Sámi reindeer herders. She has also followed scientific expeditions on glaciers in Alaska and Greenland. In 2022, she co-founded the Swiss Climate Journalism Network with the aim of providing constructive, rigorous, and innovative coverage of the global climate crisis from a Swiss perspective.

AMBRE PEYROTTY

Ambre, Giovan's elder sister, is a French renowned professional photographer who has won numerous awards. With many exhibitions to her name, she has established herself as a prominent figure in contemporary photography. Deeply connected to nature, Ambre marvels at the beauty of our environment. Her artistic eye and keen sense of detail allow her to capture landscapes and moments in a striking manner. She will skillfully convey the atmosphere and emotions of the research missions. The poetry in her photographs will add a unique dimension to the exhibition, providing exceptional quality images that are sure to captivate visitors.

JONATHAN MOY DE VITRY

Jonathan is a Swiss professional videographer with over 10 years of experience. As the founder of Right Here / Right Now Productions, a next-generation production agency based in Geneva, he brings the human touch of classic cinema to new media formats. Utilizing a streamlined organization and the latest innovations, including AI, he delivers exceptional work. His passion for scientific subjects, particularly natural sciences, makes him an ideal collaborator for projects related to past climates. He works with institutions such as CERN to produce content that explains research topics to the public.



TIMELINE

TASKS	START DATE	END DATE
PROJECT PLANNING AND DEVELOPMENT	MAY 2024	SEPTEMBER 2024
COLLABORATION AVES LES PARTENAIRES FINANCIERS	OCTOBER 2024	AUGUST 2025
COLLABORATION WITH FINANCIAL PARTNERS	SEPTEMBER 2025	FEBRUARY 2026
FILMING 1: RESEARCHERS' PREPARATORY WORK	MARCH 2026	APRIL 2026
FILMING 2: FIRST FIELD MISSION	APRIL 2026	MAY 2026
FILMING 3: POST-FIRST MISSION WORK	JUNE 2026	SEPTEMBER 2026
WRITING AND ORGANIZING SECOND FILMING SESSIONS	SEPTEMBER 2026	FEBRUARY 2027
FILMING 4: RESEARCHERS' PREPARATORY WORK	MARCH 2027	APRIL 2028
FILMING 5: SECOND FIELD MISSION	APRIL 2027	MAY 2027
FILMING 6: LABORATORY WORK	JUNE 2027	OCTOBER 2027
PREPARATION OF DISTRIBUTION CHANNELS AND EXHIBITION	SEPTEMBER 2027	APRIL 2028
POST-PRODUCTION	NOVEMBER 2027	APRIL 2028
DISTRIBUTION AND EXHIBITION	MAY 2028	->....