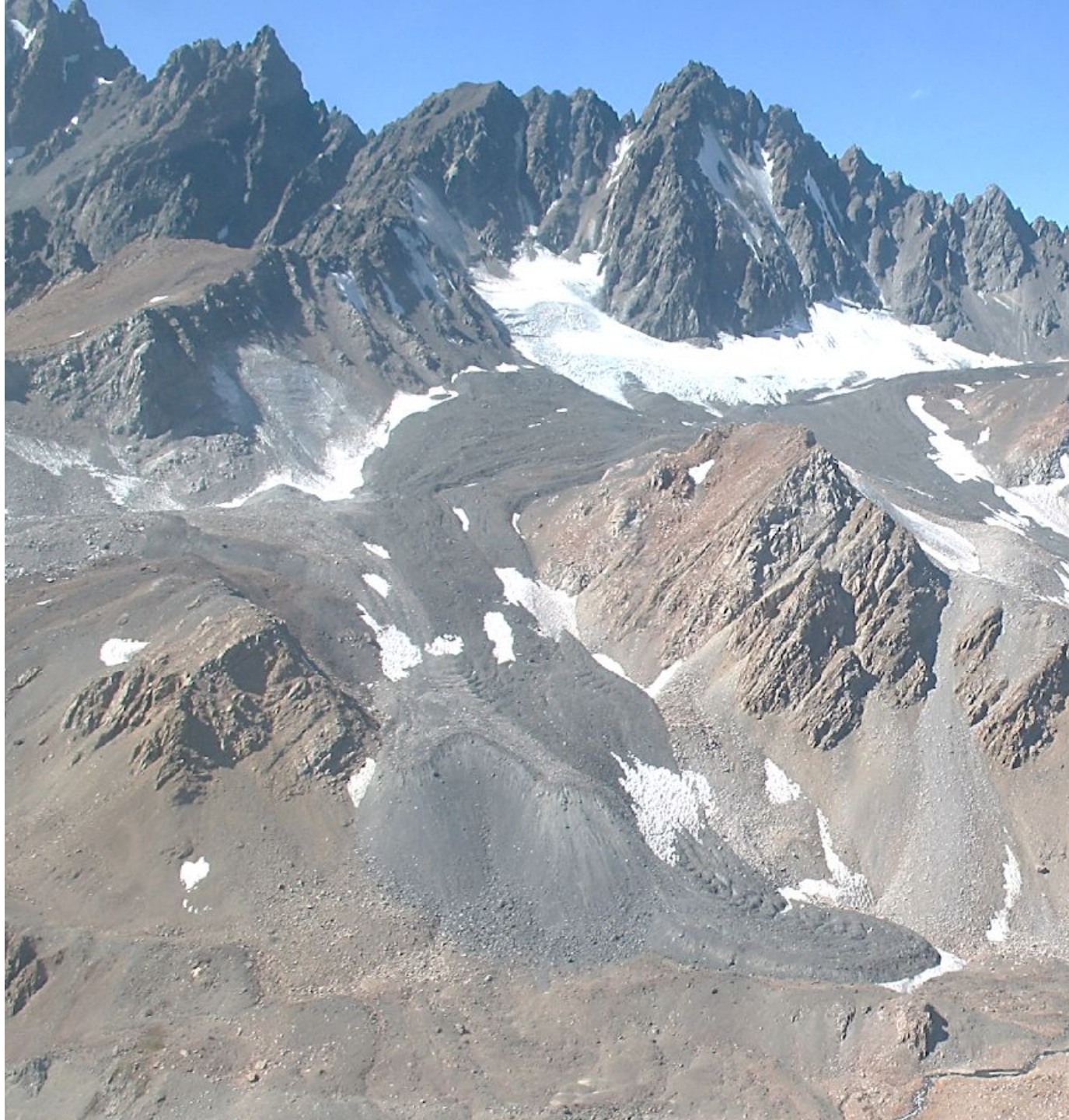
RGIK 2024 General Assembly

Francesco Brardinoni, Diego Cusicanqui, Yan Hu, Kaytan Kelkar, Cécile Pellet, Benjamin Robson, Line Rouyet, and Mishelle Wehbe (alphabetically)

Agenda

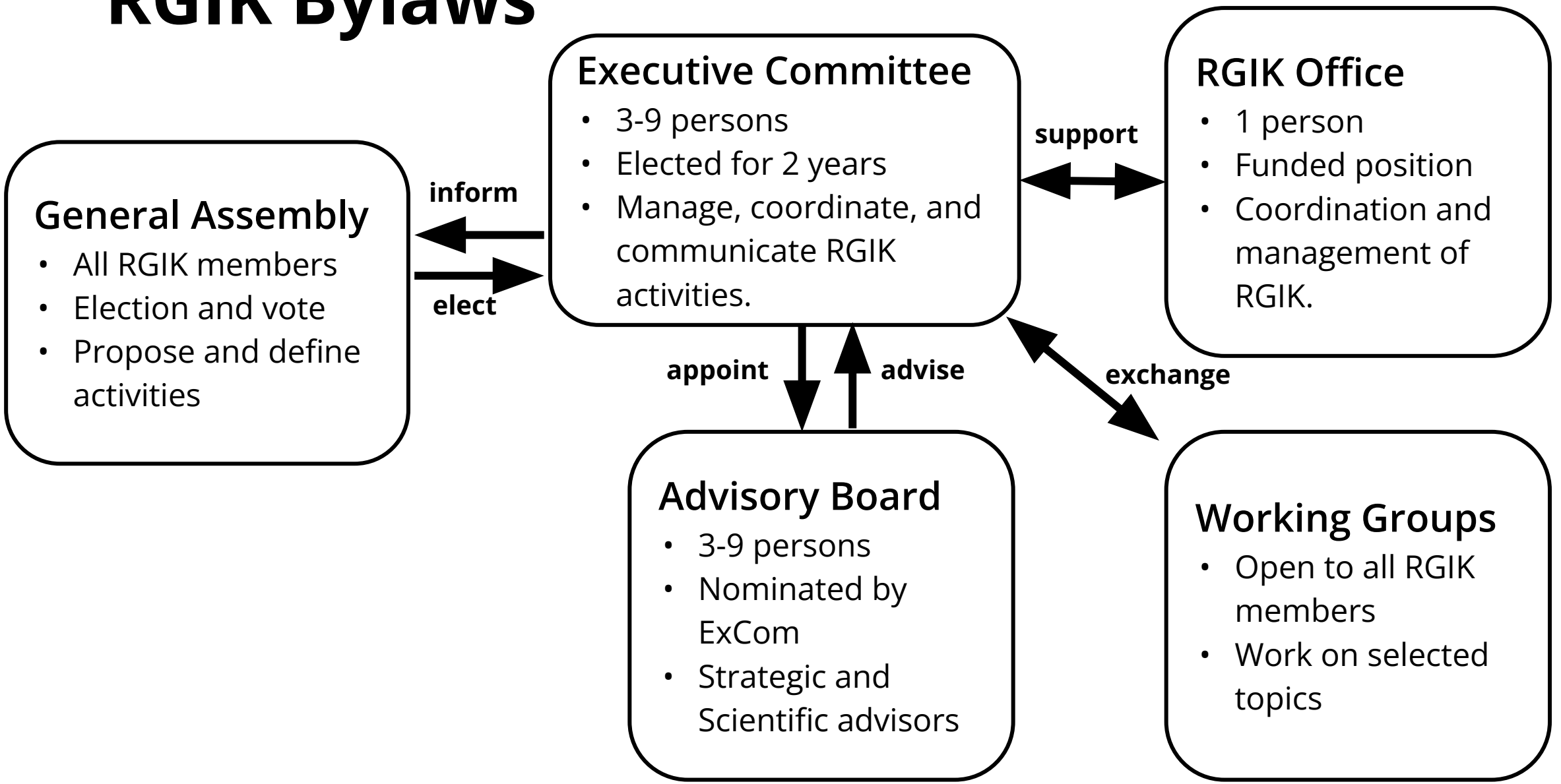
- Welcome!
- RGIK Bylaws
- ExCom Candidates
- Election & Voting Procedure
- RGIK Logo & Website
- Next Events & Activities



RGIK Bylaws

- Requirement for the transition into an IPA Standing Committee - official presentation on 16 June 2024 at ICOP
- Defines the goal, structure, and organisation of the RGIK Standing Committee.
- RGIK Mission Statement:
  - RGIK mission is:
    - To coordinate the global compilation and distribution of standardised rock glacier products; and
    - To foster international collaboration and advancements in the understanding of rock glaciers.

RGIK Bylaws


General Assembly
• All RGIK members
• Election and vote
• Propose and define activities
inform
elect
Executive Committee
• 3-9 persons
• Elected for 2 years
• Manage, coordinate, and communicate RGIK activities.
support
RGIK Office
• 1 person
• Funded position
• Coordination and management of RGIK.
appoint
advise
exchange
Advisory Board
• 3-9 persons
• Nominated by ExCom
• Strategic and Scientific advisors
Working Groups
• Open to all RGIK members
• Work on selected topics

Bylaws Comments

- Membership fees and registration:
  - **Free membership**
  - **Official registration** required once the Standing Committee has been approved by the IPA.
- Executive Committee term and organization:
  - **2-years term** with the possibility of re-election (max. 3) to guarantee sustained involvement and long-term vision.
  - **Flexible roles** and responsibilities to adapt to current needs.
- Advisory Board role and organization:
  - Scientific and strategic **advisory structure** to be organized in a **flexible way**
- Equity, Diversity, and Inclusion (EDI) Code of Conduct
  - Update of the current version foreseen by a **dedicated working group.**

Francesco Brardinoni

Department of Biological, Geological and Environmental Sciences, University of Bologna
Italy

Background: My research interests mainly focus on mountain geomorphology. I started working on rock glaciers in 2012, with the compilation of a geomorphologic RoGI across the Lombardy region, Italy (Scotti et al. 2013). This effort was followed by a study on the post-LGM geomorphic response glacial and periglacial landforms to deglaciation by means of 10Be, Schmidt hammer and geomorphologic mapping (Scotti et al. 2017). Subsequently, I have addressed the questions of uncertainty and variability in the compilation of RoGIs (Brardinoni et al. 2019). More recently, I have been involved in: (1) the RGIK action group, contributing to the drafting of the relevant baseline and practical concepts; (2) the ESA CCI Permafrost project, first as an external partner (Phase I) and later as partner of Option 9 (Phase II). CCI Permafrost has led to the publication of two papers, one on incorporating an InSAR kinematic attribute in RoGIs (Bertone et al. 2022), the other on the integration of geomorphological mapping and InSAR-based kinematic information (Bertone et al. 2024). I am currently PI of WP4 in PARACELSO, funded by the Italian Space Agency. WP4 aims to the kinematic classification of RGs in Valle d'Aosta, Italy. At ICOP24, I will co-chair a RG session.

Vision and motivation: I have enjoyed being an active member of the RGIK initiative, back from the Evolène meeting onward, and through the hurdles of the COVID experience. My main motivation for candidacy is to warrant some continuity to the collaborative effort started in 2019, through fostering international interaction in an informal, easy-going fashion. In this context, I will bring in my landscape-scale approach to mountain environments, promoting the incorporation of RG investigations in the broader context of glaciated (or formerly glaciated) drainage basins in a changing climate. In my view, looking at RGs within the broader hydro-geomorphic sediment cascade, will allow our community to build stronger ties with glaciologists, hydrologists, engineering geologists and ecologist, but also with practitioners outside of the academic world. I believe this will provide increased visibility to our community both from a basic and from an applied point of view.

Diego Cusicanqui

Centre National d'Etudes Spatiales (CNES), Institut des Sciences de la Terre (ISTerre), Université Grenoble Alpes
France

Background: I am a postdoctoral researcher funded by the National Centre for Space Studies (CNES) and currently employed at the Institute of Earth Sciences (ISTerre) of the University Grenoble Alpes (UGA) in France. I completed my Ph.D. at the same university, where I focused my research on the understanding of mountain glacial and periglacial interactions, with a particular emphasis on rock glacier dynamics. During my Ph.D. thesis, I employed a combination of historical and modern remote sensing techniques to depict long-term dynamics, with the objective of better understanding how rock glaciers react to ongoing climate warming. Additionally, I utilized geophysical and geomorphological methods to understand and characterize subsurface material and physical processes, respectively. At this juncture, I have a robust foundation in advanced remote sensing techniques (e.g., InSAR and optical) from a multitude of sensors, enabling the generation of high-quality data, particularly pertaining to rock glacier velocities. I have continued to be intrigued by this topic and my current postdoctoral project is centered on a combination of advanced remote sensing techniques applied to the investigation of long-term dynamics of rock glaciers at the regional scale (e.g., the French Alps and Central Andes). Furthermore, I am currently spearheading the development of a semi-automatic pipeline that will enable regional-scale studies to be conducted using freely available open-source remote sensing datasets. This will enable the production of surface velocities of rock glaciers at the regional scale.

Vision and motivation: My active participation in the RGIK Action Group since its beginning, during my PhD and in my current project has provided me with the necessary background to have a deep understanding of rock glacier kinematics and the associated challenges and opportunities we face. In particular, I bring a solid knowledge of remote sensing techniques applied to rock glacier kinematics to produce surface velocities time series, a key product expected at the community. I am confident that I can contribute to the success of the RGIK during this pivotal starting period. Although I do not currently hold a permanent position (first application is expected next year), I am motivated by the prospect of actively shaping the formal structure and rules of the Executive Committee and working together to achieve the goals outlined in the Puigcerdà Commitment. My commitment to the mission of the RGIK extends clearly beyond the interim period (current position) and I am committed to serving on the Executive Committee for the long term.

Yan Hu

Chinese University of Hong Kong (CUHK)
China

Background: I am a postdoctoral researcher at The Chinese University of Hong Kong (CUHK), China, specializing in rock glacier study. I developed my passion for rock glaciers during my Ph.D. at the Cryosphere Lab of CUHK. I focus primarily on rock glaciers found on the Tibetan Plateau. My research encompasses several key areas:

1. Compiling rock glacier inventories across the plateau using remote sensing and deep learning to bridge spatial data gaps.
2. Conducting new field observations, including borehole drilling, ground temperature monitoring, and geophysical surveys, after a two-decade research gap.
3. Developing an empirical rheological model to simulate rock glacier movement and estimate ground ice content.
4. Reviewing the scientific significance of Rock Glacier Velocity as an Essential Climate Variable Product for permafrost.

Vision and motivation: I actively engaged with the RGIK Action Group from 2018 to 2023, drawing inspiration from its vibrant discussions and fueling my research endeavors. Presently, I serve as a member of the RGIK Interim Executive Committee, with the motivation to give back to the community. I envision RGIK as a community for rock glacier enthusiasts and young students to exchange ideas, fostering collaboration, and pushing the boundaries of scientific understanding. It's a place where inspiration ignites, and aspirations manifest into reality. Leveraging my research expertise, I aspire to continue developing international guidelines and coordinating the global compilation of standardized rock glacier products.

Kaytan Kelkar

University of Alaska Fairbanks
USA

Background: Kaytan Kelkar completed his B.Sc. and M.Sc. in Geology from the University of California, Riverside and Texas A&M University, respectively. Presently he is a Ph.D. student at the University of Alaska Fairbanks. His primary research interests are in periglacial geomorphology focused on rock glacier dynamics, periglacial landslides, and mountain permafrost modeling. He conducts his research in the Central Alaska Range in Alaska. For his Ph.D. work he is compiling a rock glacier inventory for the Central Alaska Range, examining landslide dynamics along a north-south transect in Alaska, and modeling mountain permafrost distribution within a section of Denali National Park.

Vision and motivation: Kaytan's motivation stems from the growing need to further our knowledge on how mountain regions of the cryosphere are impacted by ongoing climate change. Specifically, he is motivated to address the lack of research focused on rock glaciers in sub-Arctic environments. The limited rock glacier investigations in Alaska serve as a motivation for Kaytan's work to address knowledge gaps of rock glacier distribution, movement, and potential destabilization in the Arctic. His work will provide baseline data on rock glacier extent and will help with identifying cascading mountain permafrost driven geohazards in high-mountain Alaska. Kaytan is excited at the prospect of serving as a member of the RGIK Executive Committee. This role will enable him to build life-long collaborations with new peers, exchange varied ideologies, and promote rock glacier mapping and velocity classifications around the world among researchers with diverse expertise.

Cécile Pellet

Department of Geosciences, University of Fribourg
Switzerland

Background: I am a senior researcher at the Department of Geosciences of the University of Fribourg in Switzerland, where I also obtained my MSc and PhD (2013-2017) diploma. Physical geographer by formation, I focused my studies and subsequent research work on mountain permafrost, assessing its evolution over the last decades and understanding the physical processes driving it. I mainly used in-situ observation methods (i.e. applied geophysics, temperature, and soil moisture monitoring) and numerical modelling approaches. Since 2018, I am a science officer within the Swiss Permafrost Monitoring network PERMOS, where I oversee the rock glacier velocity and electrical resistivity observations. My work focuses on the long-term collection of robust and standardized data to assess the state and changes of permafrost in Switzerland. In this context, I am currently leading a one-year project to develop prototype data processing tools and data management system for rock glacier products. I also strive to understand the relation between climate forcing, permafrost temperature evolution and rock glacier velocity to better exploit RGV as an associated product of the ECV permafrost.

Vision and motivation: My position at the university of Fribourg gave me the opportunity to get involved in the RGIK Action Group since the very first preparatory meeting held before the EUCOP 2018. Since then, I contributed to the compilation of the RGV guidelines and participated to the various workshops as participant and organizer. Lively discussions, intense scientific exchanges and common outcomes are the backbone of the RGIK community, which I hope to help foster as an ExCom member. Building on the outcomes of the Action Group (guidelines, tools, product specifications, ECV requirements), my wishes for the future RGIK Standing Committee are to develop a dedicated data management system for rock glacier products, facilitate the compilation of RoGI and RGV products in all mountain regions worldwide, especially where little information is available, and use the data to better understand the evolution of mountain permafrost at regional scales. I am looking forward to contributing to this new phase of RGIK and to helping shape a permanent structure dedicated to rock glacier study.

Benjamin Robson

University of Bergen
Norway

Background: I have worked with developing machine learning techniques for automated mapping of rock glaciers from freely available satellite imagery – this resulted in a paper in 2020 (reference below) on the use of deep learning for rock glacier identification. I have two PhD students now working in this space, one on large-scale mapping of rock glaciers in the Andes, the other looking at issues of trustworthiness of AI, and how to validate large-scale inventories. My students and I have also worked with rock glacier kinematics from feature tracking and InSAR, and quantifying surface elevation changes from UAVs and satellite based topographic analysis, mainly in the Andes, but I am also working in High Mountain Asia (reference below).

Bolch, T., Rohrbach, N., Kutuzov, S., Robson, B.A. and Osmonov, A., 2019. Occurrence, evolution and ice content of ice-debris complexes in the Ak-Shiirak, Central Tien Shan revealed by geophysical and remotely-sensed investigations. *Earth surface processes and landforms*, *44*(1), pp.129-143.

Robson, B.A., MacDonell, S., Ayala, Á., Bolch, T., Nielsen, P.R. and Vivero, S., 2022. Glacier and rock glacier changes since the 1950s in the La Laguna catchment, Chile. *The Cryosphere*, *16*(2), pp.647-665.

Robson, B.A., Bolch, T., MacDonell, S., Hölbling, D., Rastner, P. and Schaffer, N., 2020. Automated detection of rock glaciers using deep learning and object-based image analysis. *Remote sensing of environment*, *250*, p.112033.

Vivero, S., Bodin, X., Farías-Barahona, D., MacDonell, S., Schaffer, N., Robson, B.A. and Lambiel, C., 2021. Combination of aerial, satellite, and UAV photogrammetry for quantifying rock glacier kinematics in the Dry Andes of Chile (30 S) since the 1950s. *Frontiers in Remote Sensing*, *2*, p.784015.

Vision and motivation: My motivation stems from wanting to be more in the loop of the direction RGIK is going. Since I have been working with machine learning of inventories, it is very interesting to be part of discussions about methods and guidelines for how to compile inventories. I also see being part of the committee as a means for networking working with peers working with rock glaciers and remote sensing data.

Line Rouyet

NORCE Norwegian Research Centre AS
Norway

Background: I have a B.Sc. and M.Sc. education in physical geography and environmental sciences from the University of Lausanne, Switzerland. Since 2013, I am researcher in the Earth Observation group of NORCE in Tromsø (Northern Norway). My Ph.D. research (2017-2021) focused on developing methods and products to map and monitor ground surface movement on permafrost landforms using radar remote sensing and analyse their environmental significance. Since then, my research has mostly focused on applying InSAR for the development of novel permafrost products to be used as climate change indicators in arctic and mountainous regions. I contributed to the production and analysis of rock glacier inventories and velocity time series, both in Northern Norway (Lyngen-Kåfjord area) and Spitsbergen (Svalbard). Since 2023, I have an additional part-time position at UNIFR (Switzerland) for coordinating the mountain permafrost component of the ESA CCI Permafrost project, focusing on developing RoGI and RGV using satellite remote sensing. My involvement in RGIK started at the Evolène workshop in 2019. I have been an active member of the RoGI and RGV scientific committees since then. I am currently part of the interim ExCom.

Vision and motivation: The RGIK journey started with the vision that rock glaciers provide an underexploited opportunity to improve the mapping of permafrost distribution and monitoring of permafrost conditions in mountains, with a climate-oriented perspective. Until now, we have focused our effort on developing the network, defining what we want to prioritize, agreeing on guidelines and product specifications. Today, we are at a tipping point. Our efforts have been recognized. The community is growing. Our guidelines are more and more used/cited. RGV has been accepted as a new ECV Permafrost parameter. However, there is still a lot to do to produce and exploit RoGI and RGV consistently in all cold mountain ranges. The concrete priority is to generate comparable rock glacier products, compile them in a well-structured database and disseminate them widely. So that we can finally go further with the interpretation and answer to the scientific questions we all aim to focus on: How do the rock glaciers distribute globally? How do they evolve in respect to climate variables? Are there similar/different regional trends? etc. Many exciting tasks for the upcoming years that I would be happy to contribute to, with a bunch of great people spread around the World.

Mishelle Wehbe

University of Ottawa
Canada

Background: Since 2017, I have been engaged in researching rock glaciers and features of interest (debris-covered glaciers, embryonic rock glaciers, protalus ramparts, etc) that started as my undergraduate research thesis, which has evolved as independent research that will branch into future work for my academic journey. For a bit of background, my study areas within Canada include the interior mountain ranges of Western Canada, along with the coastal mountain ranges of British Columbia. My methodology in these regions has various strategies and stages that have, in some regions and further aspires to, inventory rock glaciers, conduct kinematic and geomorphometric investigations, as well as identify potentially hazardous areas through slope-failure modelling and analyses. This research will integrate comprehensive geophysical investigations as well to analyse the complex relationship between hydrological processes, ground ice distribution, and permafrost conditions in these regions. The overall objective with my research is to create a rock glacier monitoring network in Canada as one has yet to be created, establishing new benchmarks within the regions and that will contribute to rock glacier research on a global scale as well.

Vision and motivation: Since the inception of the RGIK IPA Action Group, I have been actively involved within the RGIK community and have continually supported various initiatives. My involvement grew to committee member with the Rock Glacier Inventory (RoGI) part of the Action Group in 2022, where I contributed to editing the merged baseline/practical guidelines, attended workshops, and participated in the CCI Consensus RoGI initiative. I bring a repertoire to the team that is shaped by multi-faceted life experiences, which includes being a mother, navigating autism/physical limitations, and my experience as Director of Academia Initiatives at a Canadian museum. I have a unique determination and resilience that is a catalyst to my commitments to rock glacier research, as well as fostering inclusive and supportive research environments for all members, particularly those facing marginalisation or barriers. Currently, I am an active member of the Interim Executive Committee and am dedicated to building upon the foundational, RoGI, Machine Learning, and RGV work that the Action Group accomplished. I wish to continue as an Executive Committee member to further contribute to, lead, and support initiatives that not only extend those achievements, but ensure RGIK is continually expanding and developing, both regionally and globally.

Election and Voting Procedure: 6-7 June

- **Online links** sent on 6 June to mailing list email addresses.
- Election and vote will **close** on **7 June** (midnight UTC-12)
- One observer (S. Vivero, RGIK Office) will tally the votes.

- **Bylaws:**
  - Do you agree with the RGIK Bylaws ?
- **Election:**
  - Select up to 8 candidates by ticking the box next to their names.

RGIK Logo Submissions

Logo A

Logo C

Logo D

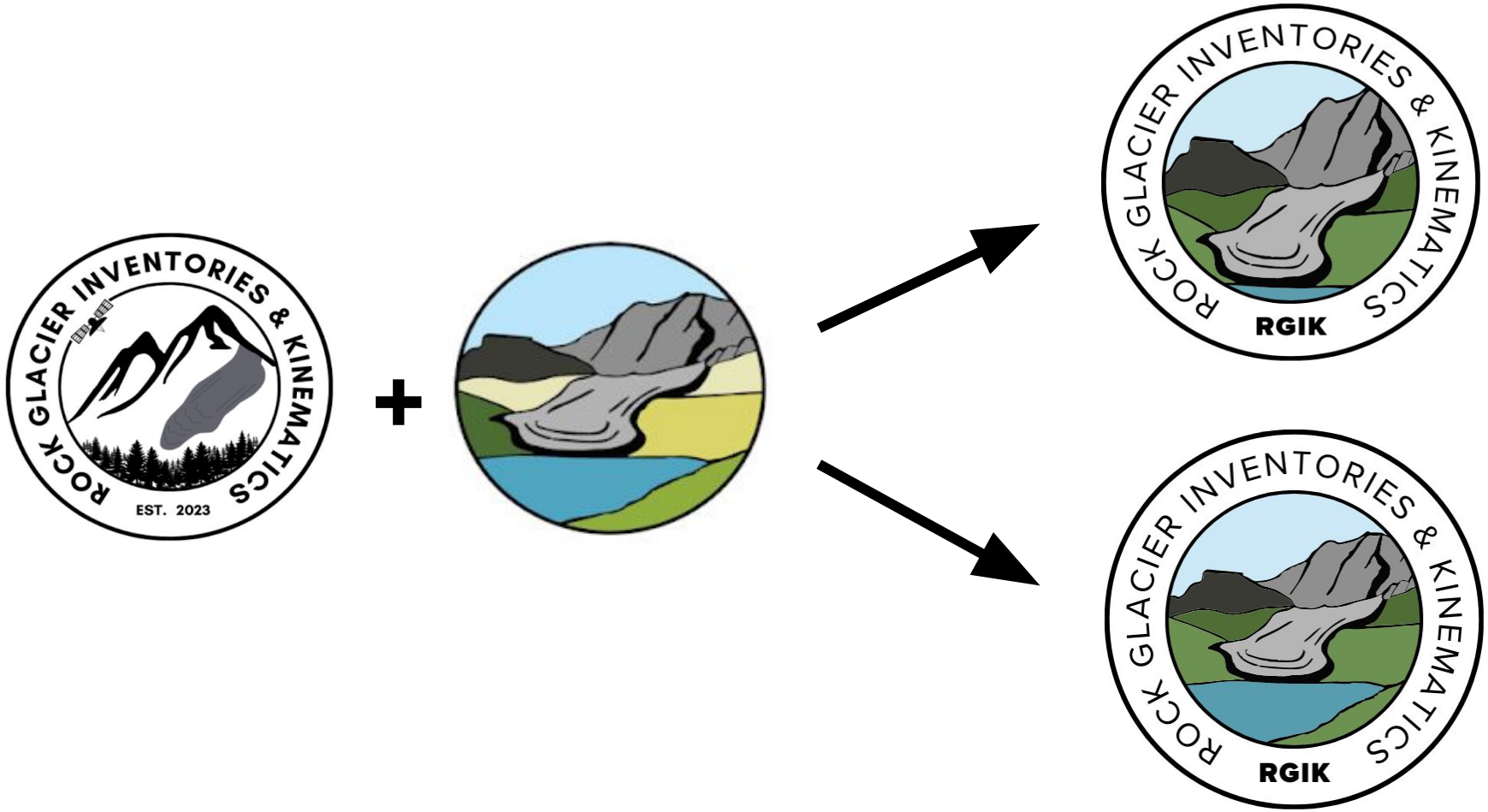
Logo F

Logo G

Logo I

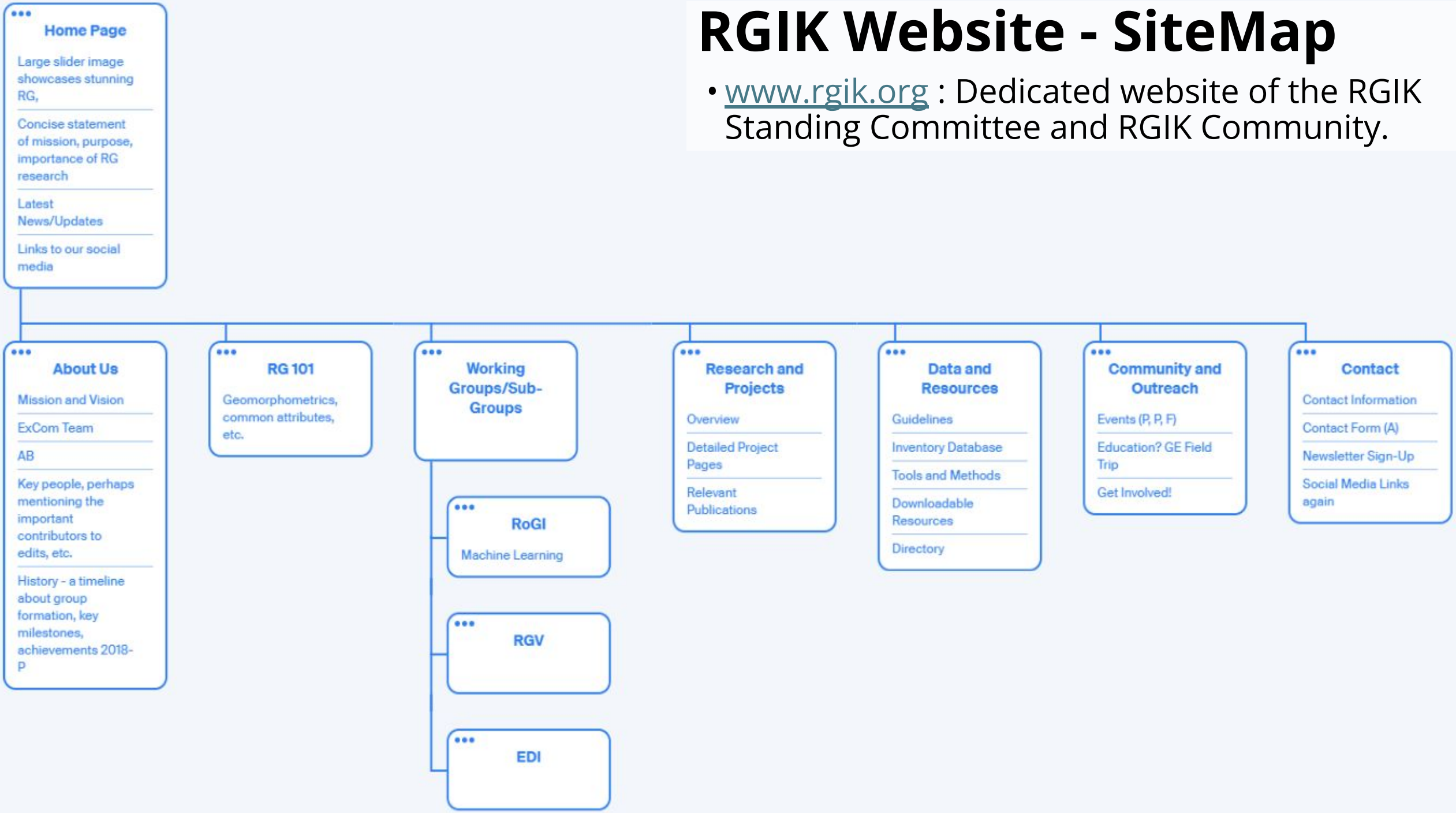
Logo J

RGIK Logo Compilation



RGIK Website - SiteMap

- www.rgik.org : Dedicated website of the RGIK Standing Committee and RGIK Community.



Next Events and Activities

- RGIK Events:
  - RGIK meet and greet at ICOP 2024 in Whitehorse
  - Rock glacier session at ICOP 2024 in Whitehorse
  - ...
- RGIK Activities:
  - RGIK monthly seminars: looking for presenters for the next ones!
  - RGIK data management: development of RGIK database and tools
  - ...
- RGIK Working Groups:
  - Rock Glacier Inventory using machine learning
  - Rock Glacier Velocity
  - Equity, Diversity, and Inclusion (EDI)
  - ...

Questions, comments, concerns?

If you have any questions, comments, or concerns after this presentation, you can contact the RGIK office, or any member of the RGIK Interim ExCom directly through email or the RGIK Slack channel. Thank you!

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