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From Peer-Reviewed Publication to Animated Videos in Social Media: A Collaborative Strategy for Research Communication

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In traditional scientific research, results are shared mainly through conference presentations, reports to funding agencies, and peer-reviewed publications. Over the past three years, our team has extended these pathways to wider audiences by translating biogeochemical research into short science communication videos for social media. In practice, the main challenge is not whether a video can be produced, but whether three requirements can be achieved simultaneously: time efficiency, cost-effective production, and scientific accuracy.

To address these challenges, we evaluated several approaches: 1) video production led by researchers; 2) an elective course in which undergraduate students collaborate with paper authors to produce videos; 3) outsourcing to external production teams; and 4) video generation using generative content tools. Each approach offers advantages but also introduces bottlenecks. Researchers often lack professional production training, resulting in substantial time investment; collaboration between undergraduate students and faculty members can be hindered by communication barriers and disciplinary jargon; outsourced production can be costly and may introduce scientific inaccuracies due to limited understanding, often requiring repeated revision; and generative tools, constrained by their training data and generation mechanisms, frequently produce plausible-sounding yet inaccurate representations of instruments, principles, and procedures, increasing both misinformation risk and review burden.

Based on these experiences, we are implementing a collaborative strategy that integrates video production into the research workflow. A stable team comprising students with film or video production backgrounds or strong interest, researchers engaged in field and laboratory work, and project supervisors allows video production to proceed in parallel with research. Video producers participate in field and laboratory activities to capture footage in real time, while researchers provide explanations and demonstrations of key processes to improve narrative accuracy. Editing and production advance alongside manuscript preparation and publication, enabling papers and videos to function as “parallel dual outputs” rather than delayed by-products. In this way, papers deliver academic contributions, videos enhance public accessibility and communication impact, and participating students gain practical training and tangible outputs. Preliminary implementation suggests this approach shortens the lag between research initiation and video release, reduces revision and review burden, and improves communication timeliness and sustainability while maintaining scientific rigour.