



“WHO ARE WE,
WHERE DID WE
COME FROM,
AND WHAT DOES
IT MEAN TO BE US?”

These are questions that fascinate many of us, if we pause to think about them, but for Rhy McMillan (BA with Distinction, Anthropology & Earth Science '13) they have taken him on a serendipitous journey in education and research and to the depths of a world famous cave in Belgium.

UNCOVERING THE SECRETS OF SCLADINA CAVE



Kyle Hall (front), a VIU student on a summer 2014 Study Abroad trip to Scladina Cave in Belgium, inspects a sample with Rhy McMillan.

Rhy McMillan makes his short “commute” to Scladina Cave from his temporary home in the work camp on site.

It all began on a blustery December day in 2009, as McMillan leaned on his surfboard, watching waves crest on Long Beach near his home in Ucluelet, BC. Recently returned home from a year of touring playing his music, he’d decided it was time for a new direction in life.

Answering his cell phone, he got the news he’d been accepted to study for his Bachelor of Arts degree at VIU. He packed and moved to Nanaimo the same day.

With hardly a clue at where his

with a doctoral degree – he’ll continue the work he began as a VIU undergrad in Scladina Cave in Belgium.

The site of the discovery of some of the world’s oldest Neanderthal DNA on record – approximately 100,000 years old – Scladina Cave opened a world of opportunity for McMillan in advancing his studies in geology and archaeology.

This year he was designated an honorary research associate at the Centre archéologique de la grotte Scladina (ASBL Andennaise), the

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university experience might take him, McMillan registered in Anthropology 112, one of the courses still available after his last minute registration. Within the first hour of the class, Professor Dee Cullon had McMillan thinking critically about who we are as humans, inspiring him to begin his academic journey.

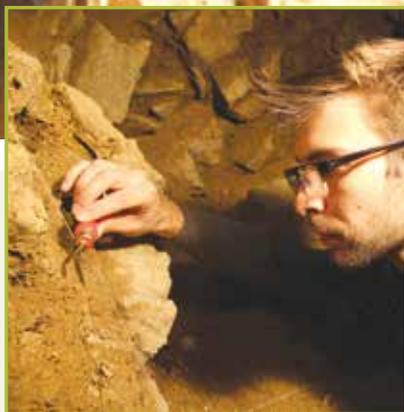
“Ever since then, thanks to Dee, it was something I knew I wanted to do – to find out more about what it means to be human,” he says.

Since that defining moment, McMillan has let his interests, skills and passions shape a path that is today fully occupied by the disciplines of archaeology and geoscience. Entering UBC’s Master of Science in Geologic Science program in fall 2014 – which he plans to follow up

organization that oversees research at Scladina Cave. He is involved in editing and translation, as well as writing for the *Scladina Monograph*, an academic publication chronicling the discovery of an eight-year-old Neanderthal child at the site.

“Scladina is a time capsule, a beautiful little well protected site,” he says. “It has contents that have been dated to about 130,000 years – with undated materials likely much older – and was completely filled up within the last 10,000 years. This means everything inside has been protected since before modern times – nobody was able to access it until scientific excavation began in 1978. And we haven’t excavated to the end of the cave





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“SCLADINA IS A TIME CAPSULE; CONTENTS HAVE BEEN DATED TO 130,000 YEARS.”

yet – we don’t know exactly where it goes. For me, that’s the most beautiful part.”

In his second undergrad internship at Scladina Cave, McMillan began to focus his work on taphonomy – the study of the processes affecting an organism between the time of its death and the time we find it in the archaeological/geological record.

His particular interest is the differential fossilization of bone, and the development of a new standard used when chemically analyzing bone material.

“Because I have training in both archaeology and earth science, one of my main objectives is to help archaeologists better understand, describe and explain the relationships between groups of valuable objects by using geoscience,” McMillan says. “This means understanding, through methods I’m helping to develop, the objects’ various states of preservation and alteration, and using this data to help us better understand how they are related.”

Working with the new method he’s developing for analyzing tiny samples of fossilized bone at the UBC Pacific Centre for Isotopic and Geochemical Research, McMillan says he’s trying to help solve a problem that occurs when objects are re-deposited and mixed into overlying sediments by erosion, causing a mélange of objects

representing different time periods.

Objects found together in one layer of sediment might have been deposited during different events. This problem goes both ways – objects that are found in separate contexts might have been originally deposited by the same event, and therefore represent the same age, even though they are not excavated from the same layer.

One particular find at Scladina that has involved McMillan is the discovery of a brittle, graphite substance that may well be evidence of a colorant – or a very early pencil – used by Neandertals.

“Not only is the use of graphite as a colorant by Neandertals new and exciting, these could be the first pencils ever used,” McMillan says.

The initial encouragement to undertake the VIU Study Abroad trip to Scladina came from Professor Cheryl Roy, who has been an unfailing mentor and colleague for McMillan. And with Roy now poised to retire from her position leading student research at Scladina, her former student is now preparing to take over that role.

Roy is happy to see one of her most promising students continuing his research and sharing his skills with future VIU students working at Scladina Cave.

“Rhy is one of the most enthusiastic

students I have ever encountered,” Roy says. “He is excited about learning and he has used every opportunity offered to him to create his own future.”

McMillan says Roy, along with retired Professor Gay Frederick, encouraged the interdisciplinary approach he has taken in his studies, combining archeology and geological science. “Cheryl’s been nothing but supportive – she was one of the first people to treat me like a colleague.”

Working with UBC’s Multidisciplinary Applied Geochemistry Network, McMillan is excited to continue his research examining the fossilization of bone and how this may impact future work on sites like the Scladina Cave.

“The bottom line is, most of the chronology information we use as archaeologists comes from studying objects that have undergone at least some degree of taphonomic alteration – the processes that occur after an organism dies and before we find it,” he says. “I don’t think we understand and use the taphonomic information that is available to the degree that we should when analyzing archaeological bone.”

McMillan believes there is much to be learned from advancing the relationship between archaeology and geology, and he plans to be part of doing just that. ➦