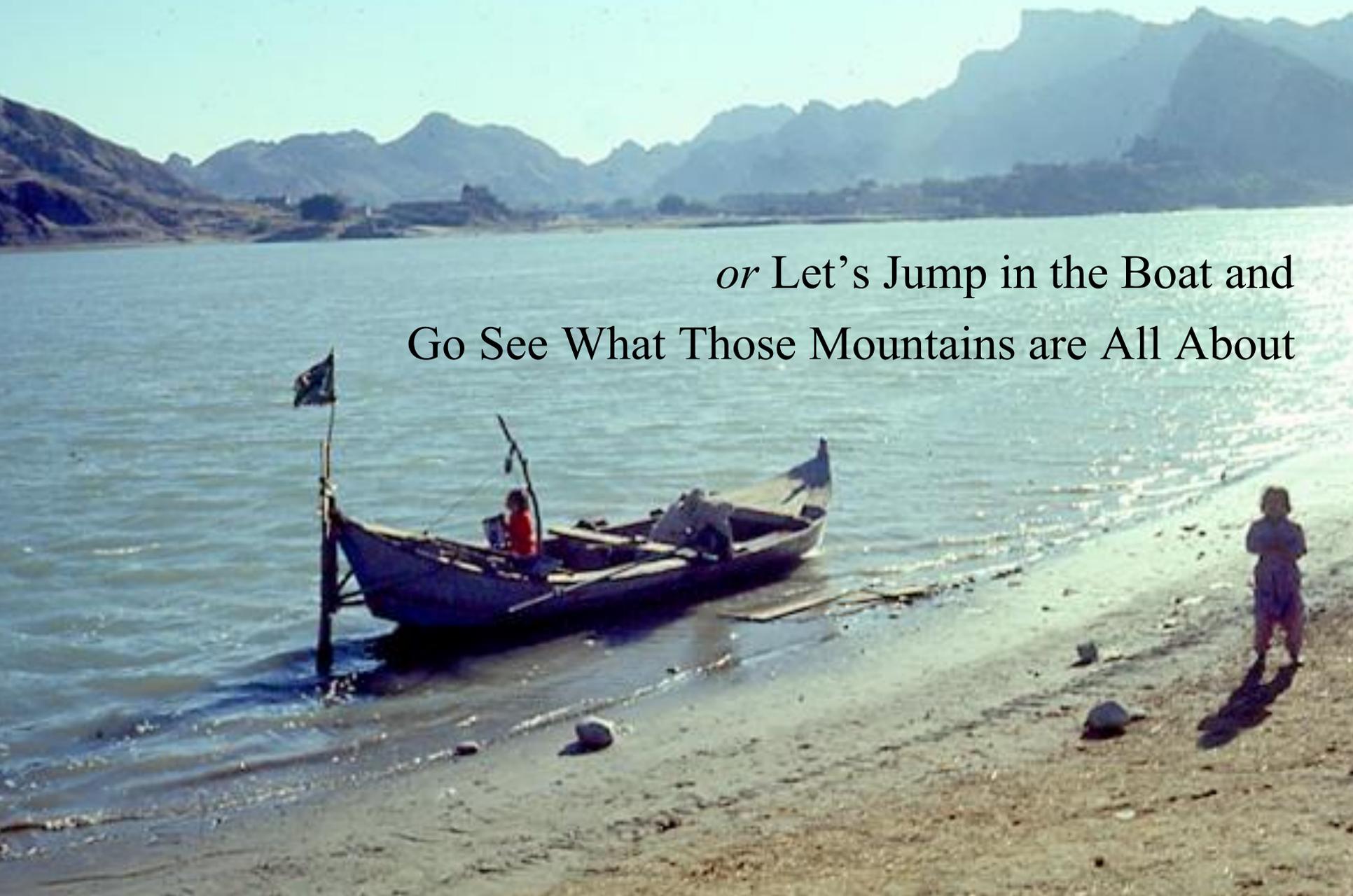


A Research Career Without Testable Hypotheses

or Let's Jump in the Boat and
Go See What Those Mountains are All About

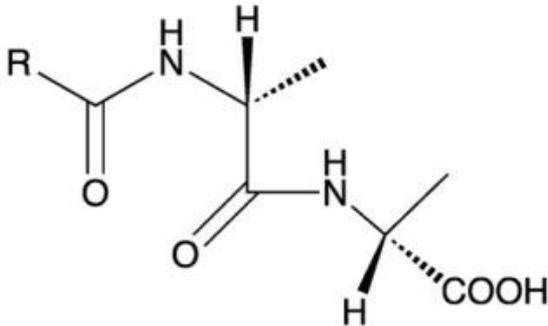


Starting Out – *First Paper*

Marine Sediments: Dating by the Racemization of Amino Acids

Abstract. Isoleucine has been found to undergo a slow racemization reaction in a 5-meter sediment core taken from the Atlantis fracture zone (water depth, 4014 meters; actual location, 30°15.7'N, 43°18.9'W). The amount of racemization increases with increasing depth below the sediment-seawater interface. This isoleucine racemization reaction was used to calculate an age of 1.23 million years for the bottom of the core.

Bada, Luyendyk and Maynard, **Science**, 1970



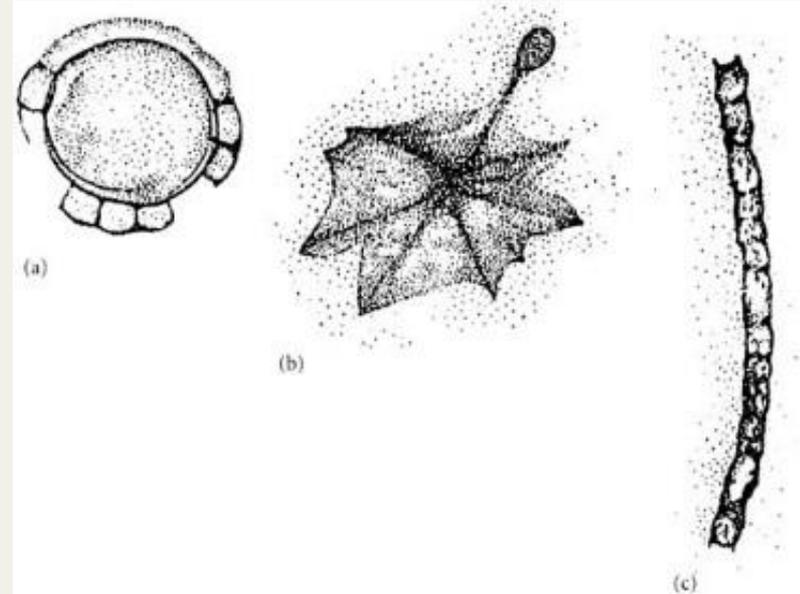
Life on earth has only L-amino acids, an exception being the group D-alanyl-D-alanine, which bacteria use to cross-link their cell walls.

Does Nature have a preference or is it random? Will half of the life forms in the Universe be D and half L?

Elso Barghoorn



1965 – Microfossils from the Gunflint Chert



This paper is one of the reasons I went to Harvard, and it was Elso who introduced me to the Precambrian. His post-doc Dick Leo was doing amino acids on these cherts when I was working on silica in modern sediments in Ray Siever's lab.

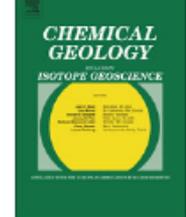
Full Circle – *Last Cinti Paper*



Contents lists available at ScienceDirect

Chemical Geology

journal homepage: www.elsevier.com/locate/chemgeo



Mass-independently fractionated sulfur in Archean paleosols: A large reservoir of negative $\Delta^{33}\text{S}$ anomaly on the early Earth

J. Barry Maynard ^{a,*}, Sally J. Sutton ^b, Douglas Rumble III ^c, Andrey Bekker ^d

In the atmosphere, S is converted in equal amounts to SO_4 , with a negative $\Delta^{34}\text{S}$, and S_8 , which is positive. In the absence of oxygen these survive to be transported to the surface. The earth as a whole should be zero, but Archean ocean sediments are always positive.

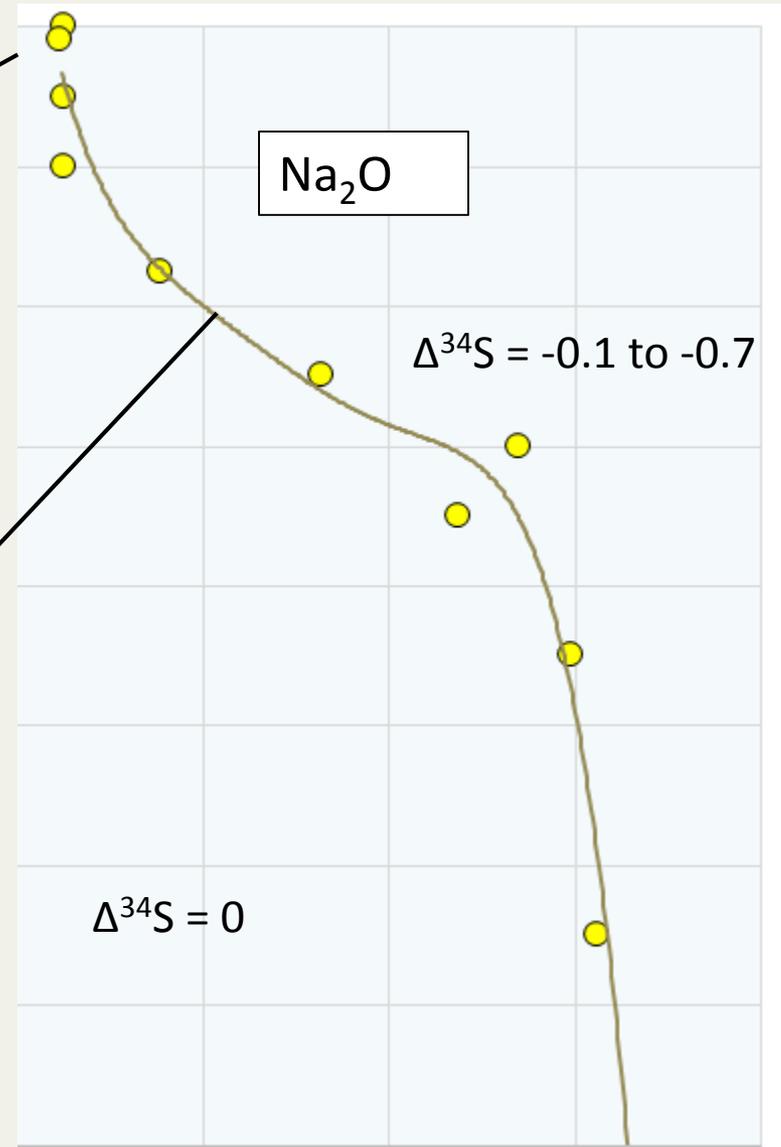
Where is the negative reservoir?

Full Circle – *Last Cinti Paper*

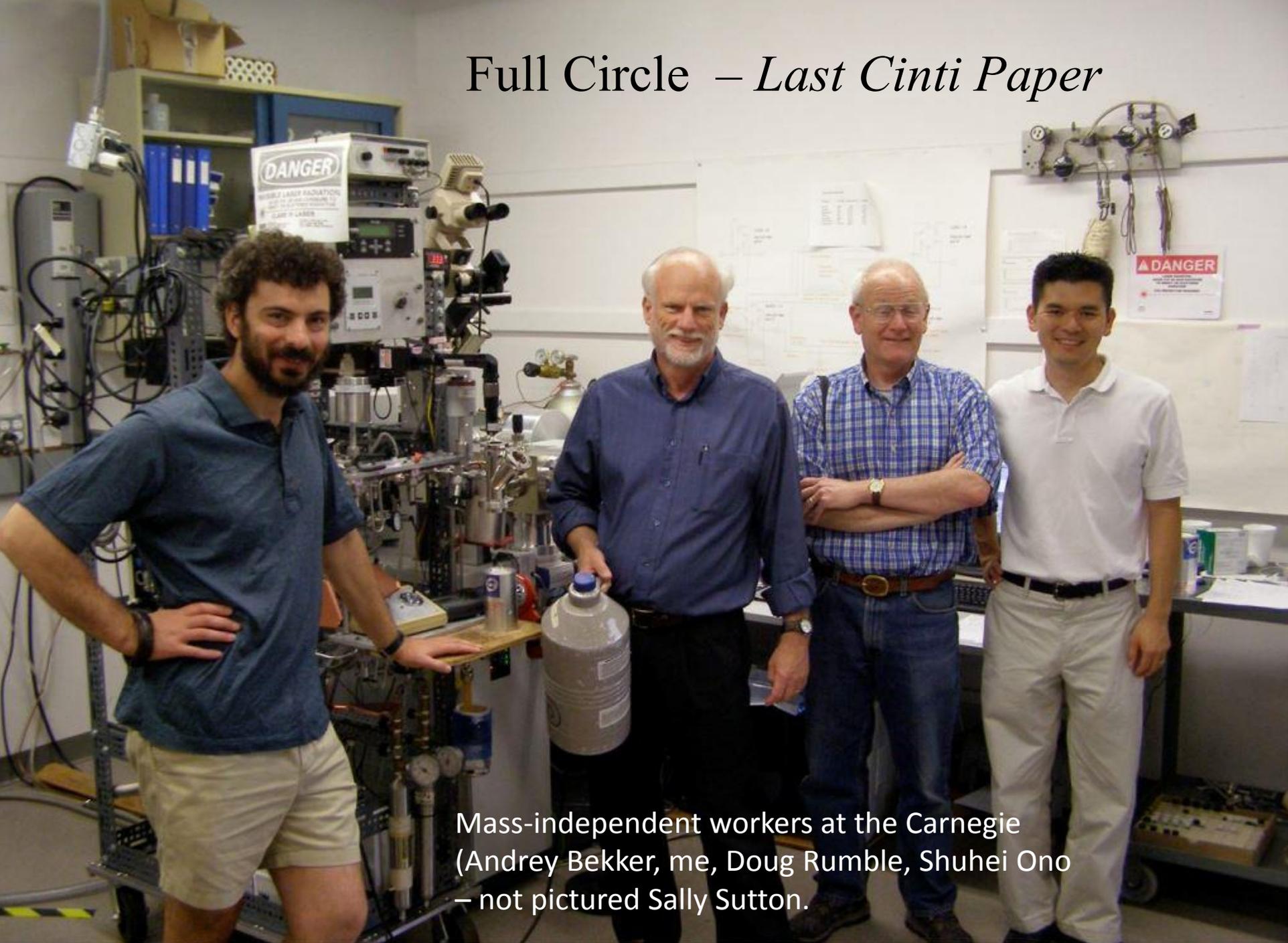
Archean paleosols (and diamictites)
turn out to always be negative



**Archean paleosol,
Cooper Lake Ont**

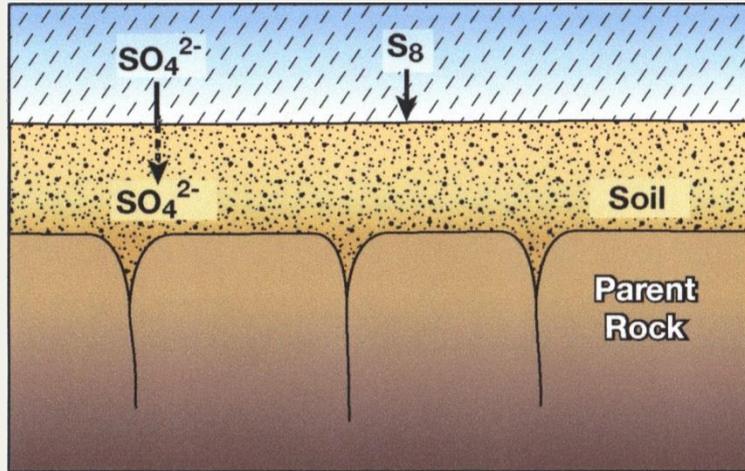


Full Circle – *Last Cinti Paper*

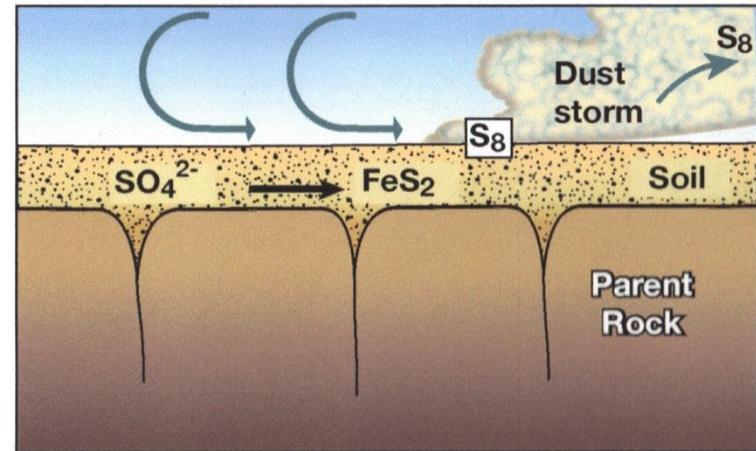


Mass-independent workers at the Carnegie
(Andrey Bekker, me, Doug Rumble, Shuhei Ono
– not pictured Sally Sutton.

A Model for Fractionating Sulfur in the Archean



SO_4^{2-} penetrates to base of soil.



S_8 -enriched dust carried to ocean.

Negative $\Delta^{34}\text{S}$ in SO_4 retained on land, converted to pyrite S by sulfate reducing bacteria

Positive $\Delta^{34}\text{S}$ lost as S_8 to oceans, also goes to pyrite

What Do These Have in Common?

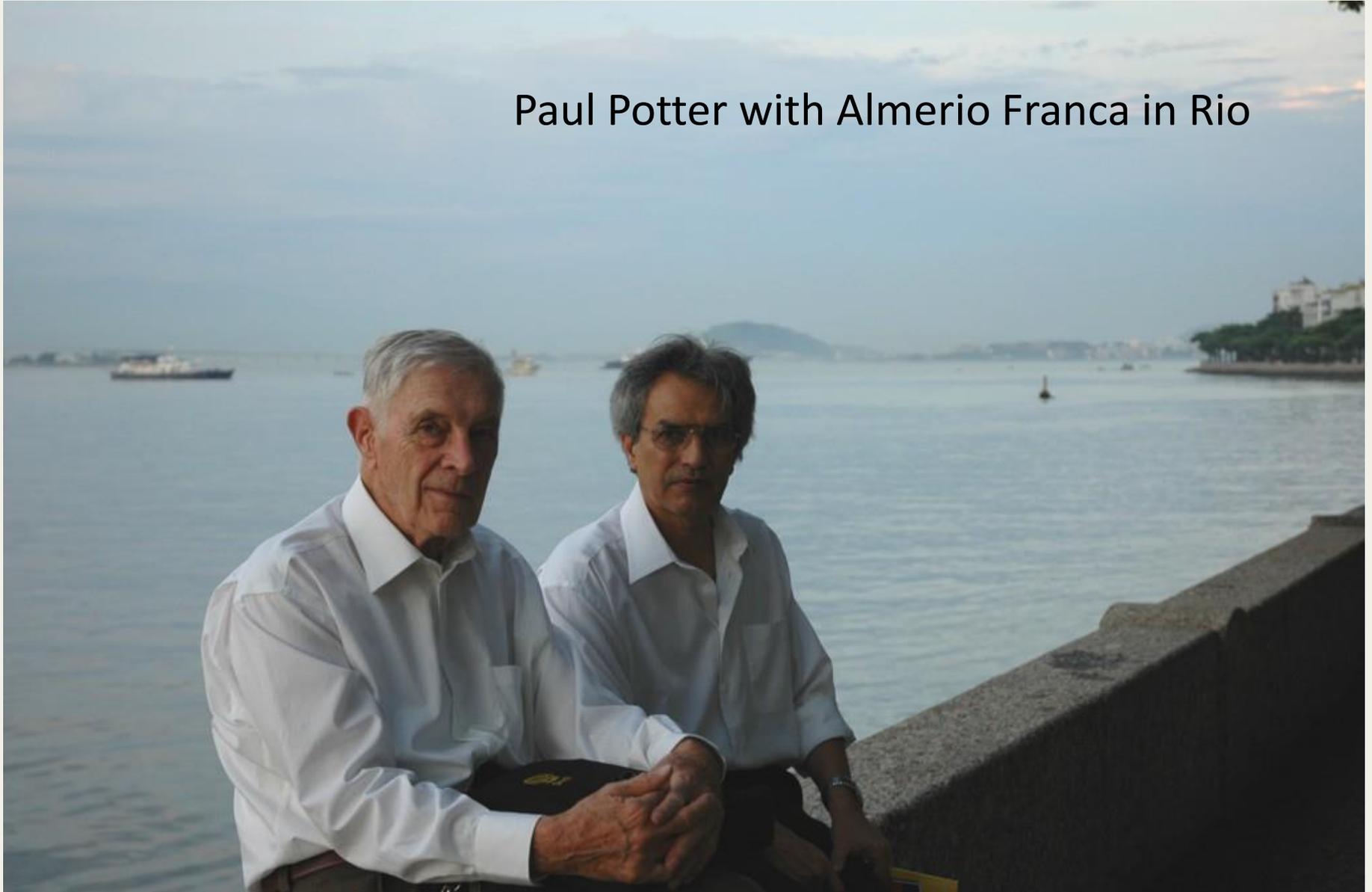
One, they deal with the chemical signal of early life on Earth

Two, neither has anything to do with Mn

Three, neither started out with any hypothesis
– they were both explorations of what appeared to be interesting situations

Help Along the Way —

Paul Potter with Almerio Franca in Rio

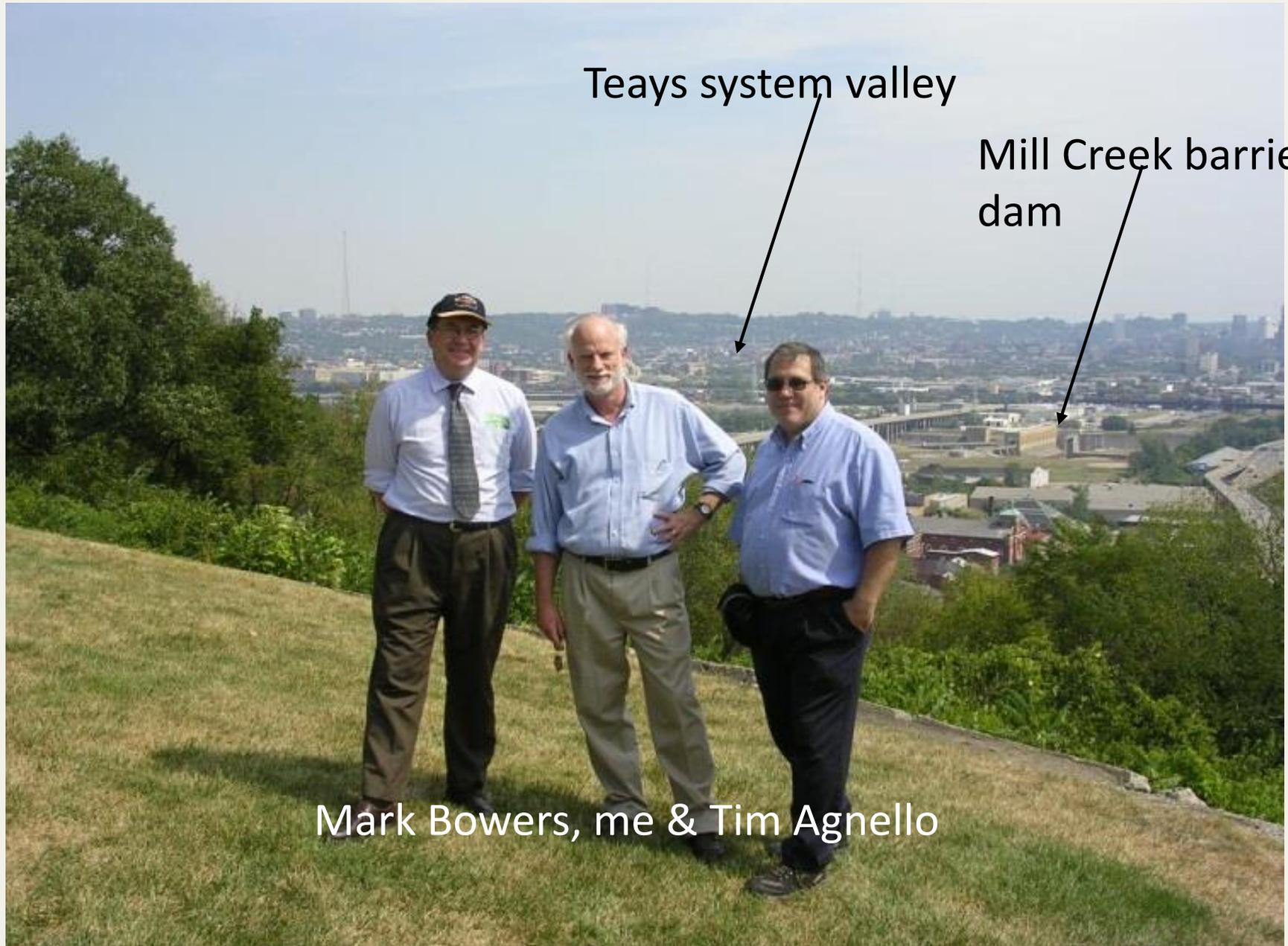


Help Along the Way —

Paul receiving award from Petrobras



Help Along the Way — *the Hillside Boys*



Teays system valley

Mill Creek barrier dam

Mark Bowers, me & Tim Agnello

Help Along the Way – Tom Algeo, the Black Shale Czar

J. Barry Maynard - Google x

← → ↻ <https://scholar.google.com/citations?user=Etl2c2UAAAAJ&hl=en>



J. Barry Maynard

Professor of Geology, University of Cincinnati
[geochemistry](#)
Verified email at uc.edu - [Homepage](#)
My profile is public

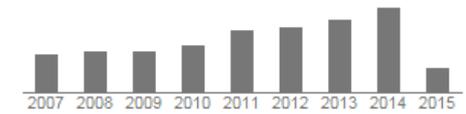
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SM McLennan, SR Taylor, MT McCulloch, JB Maynard <i>Geochimica et Cosmochimica Acta</i> 54 (7), 2015-2050					
<input type="checkbox"/> Sedimentology of shale				439	1984
PE Potter, JB Maynard, WA Pryor Springer					
<input type="checkbox"/> Trace-element behavior and redox facies in core shales of Upper Pennsylvanian Kansas-type cyclothems				301	2004
TJ Algeo, JB Maynard <i>Chemical Geology</i> 206 (3), 289-318					
<input type="checkbox"/> Geochemistry of Sedimentary Ore Deposits				259	1983
JB Maynard Springer-Verlag					
<input type="checkbox"/> Geochemical cycles of carbon and sulfur				220	1988
WT Holser, M Schidlowski, FT Mackenzie, JB Maynard <i>Chemical Cycles in the Evolution of the Earth</i> , 105-173					
<input type="checkbox"/> Factors controlling enrichment of vanadium and nickel in the bitumen of organic sedimentary rocks				218	1982
MD Lewan, JB Maynard <i>Geochimica et Cosmochimica Acta</i> 46 (12), 2547-2560					

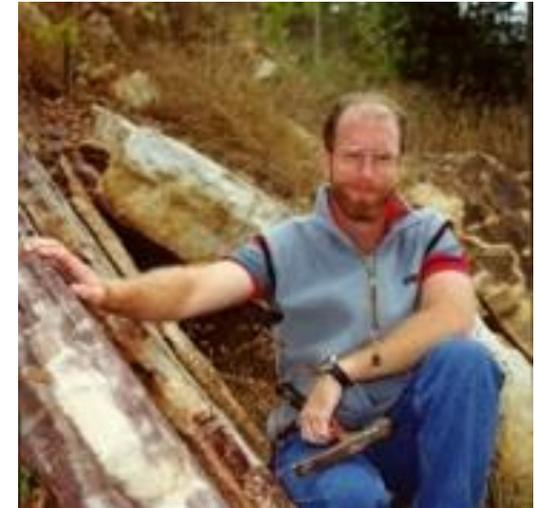
Google Scholar

Citation indices	All	Since 2010
Citations	5022	1986
h-index	35	22
i10-index	60	37



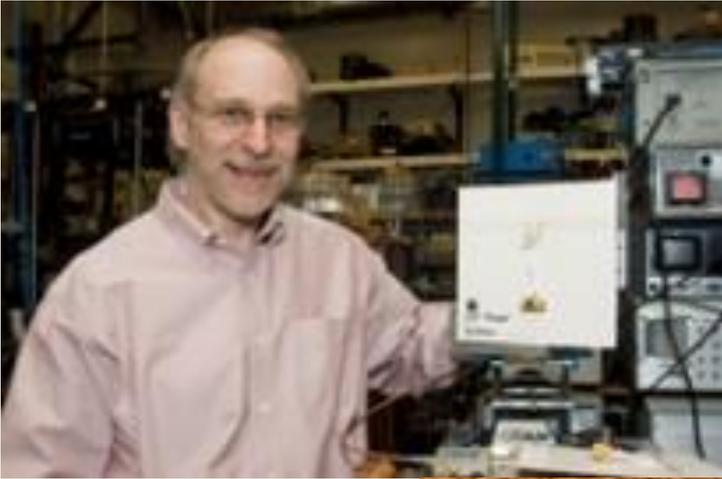
Year	Citations
2007	~100
2008	~150
2009	~180
2010	~220
2011	~280
2012	~320
2013	~380
2014	~450
2015	~150

Add co-authors



Algeo, Thomas J

Help Along the Way – David Mast: generator of pipe dreams



With Mike Schock – the source of all information on Pb scales; Anne Sandvig – who lured us into this arena; Mike DeSantis – who takes the best photos in the world; Steve Harmon – who does the best SEM work; and most of all Abigail Cantor for her support through many projects together.



Help Along the Way – Nick Beukes & Charles Kingsley show why the Precambrian is different



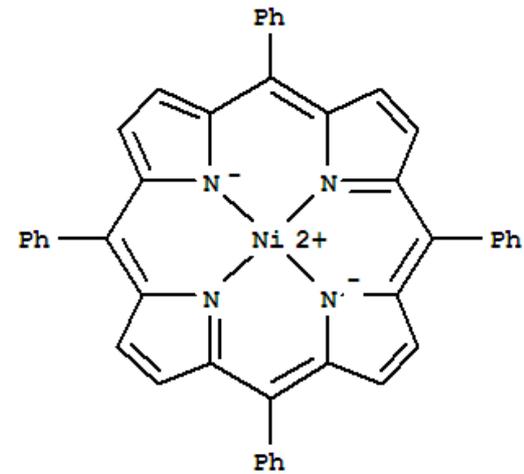
Giant Stromatolites

Chocolate Dolostones (Mn enriched)

Thanks to the many who helped me with the “Manganese Adventure” in Canada, Pakistan, South Africa, Mexico, and China

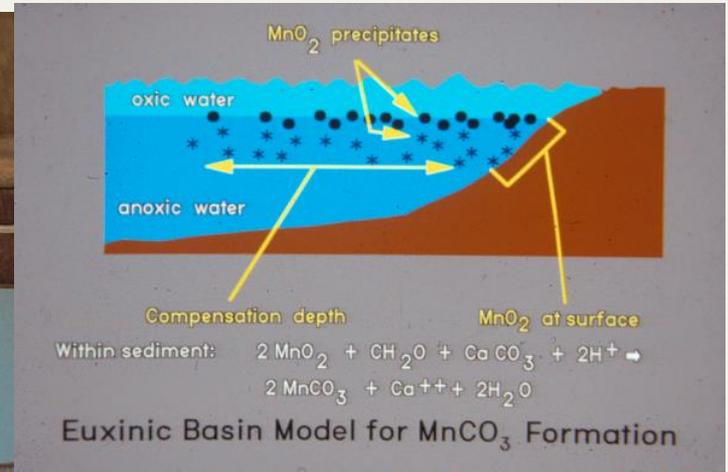
Help Along the Way —

Students – Mike Lewan: top guy in oil generation



Help Along the Way —

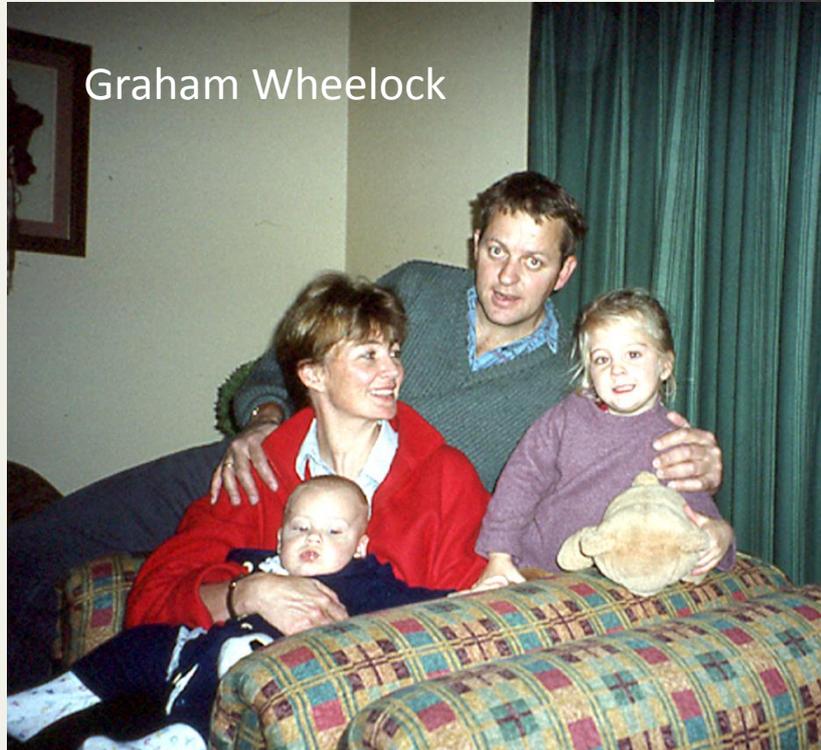
Alphonso Martinez, Pat Okita (top guy in mine development)



Help Along the Way – Students –



Tie-bing Liu



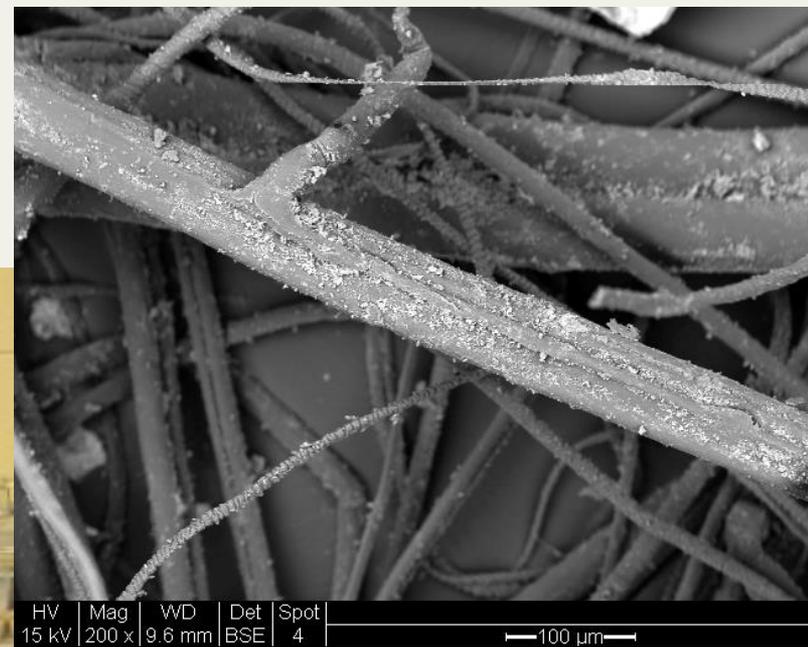
Graham Wheelock



Adam Flege

Help Along the Way –

Students – Lauren Wasserstrom: the best chemist (And also Phil Hart: the best engineer)



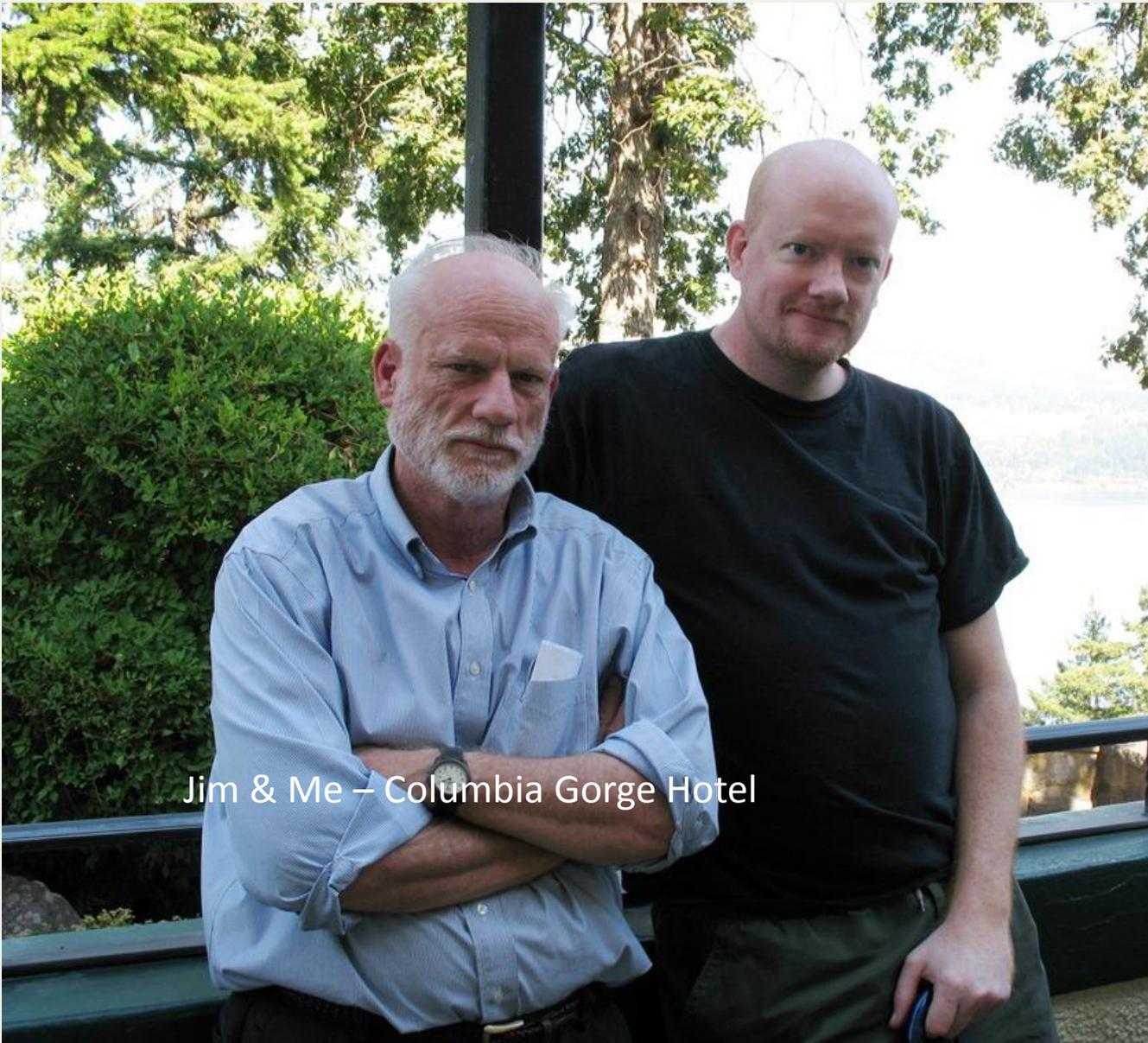
HV	Mag	WD	Det	Spot
15 kV	200 x	9.6 mm	BSE	4

100 µm

Help Along the Way – Family



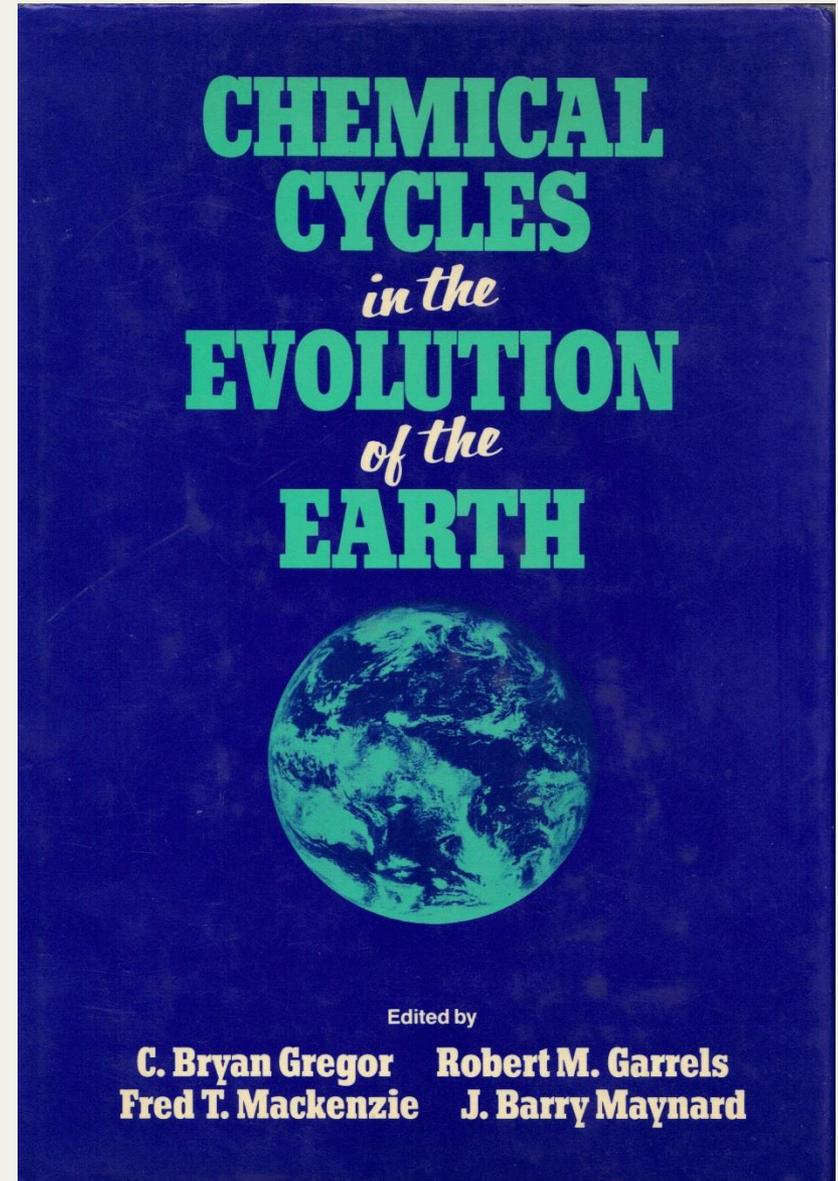
Help Along the Way – Family



Jim & Me – Columbia Gorge Hotel

My logistics
expert: Laying
out the 4-day
Field Trip

Help Along the Way — Emmaly: The world's best editor



Getting there — China, Train to Changsha



Soft sleeper



Hard sleeper

Many thanks to my colleagues in the Federal and State Surveys, especially Eric Force, Bill Cannon, and John Slack

Nelson Shafer and Joel Leventhal enjoying superior accommodation

Places – Brazil, always time for a nice lunch

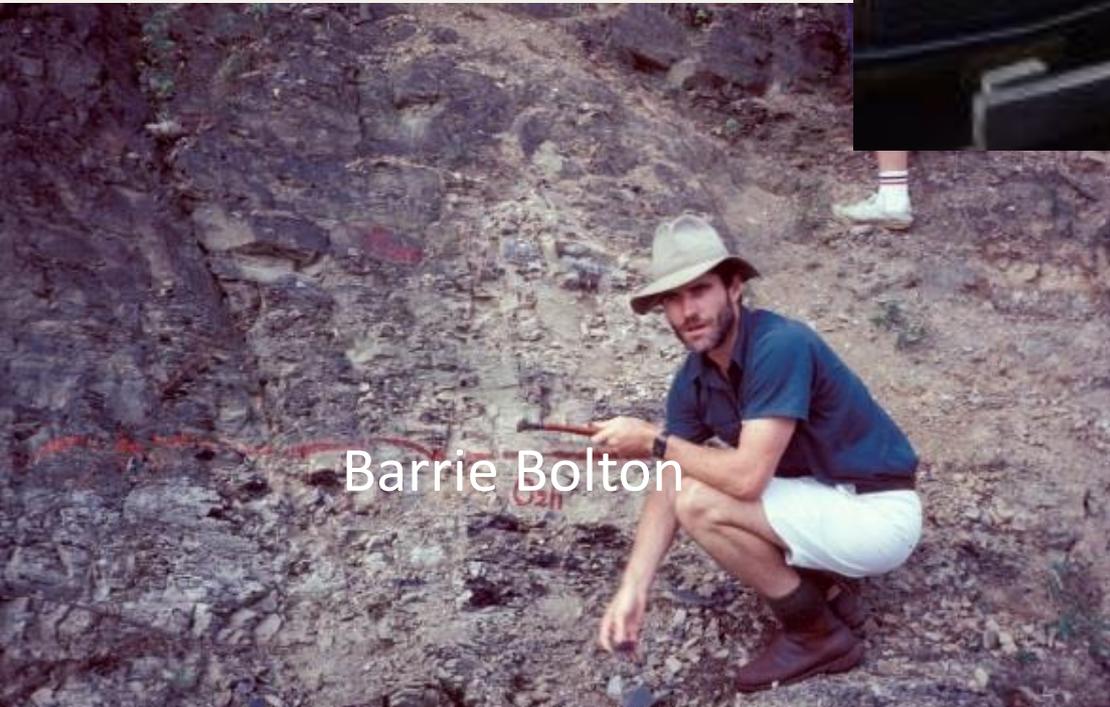


Muito Obrigado
Almerio, Laury, Carlos.
Tudo Bem.

Places — Australia, a unique spot. Thanks to my hosts at Tas Uni and Sydney Uni plus all my friends in mining



Beer Plumbing



Barrie Bolton

Places -

Mexico, geology from horseback. Student is Eric May. Our thanks to Rafael Alexandri and Alphonso Martinez

Los refrescos en frente de la tienda



Ritual de la mañana



Descanso de la tarde, los caballos y los caballeros



Places — 4-Day Field Trips to Gettysburg and to Cumberland Gap

Re-enactment of Confederate prisoners being marched to the rear



Kees Dejong on top of Pine Mountain drawing the overthrust

Places — Keeneland, Spring Meeting



Calvin Borel towering over his trainer



What Now???

New Frontiers in the West

