



Department of Soil Quality

SOQ Newsletter 9, March 2016

Welcome to the 9th edition of the SOQ newsletter. The next release is scheduled for May, so please send in contributions before April 30, to [Marnella van der Tol](mailto:Marnella.van.der.Tol@wur.nl)

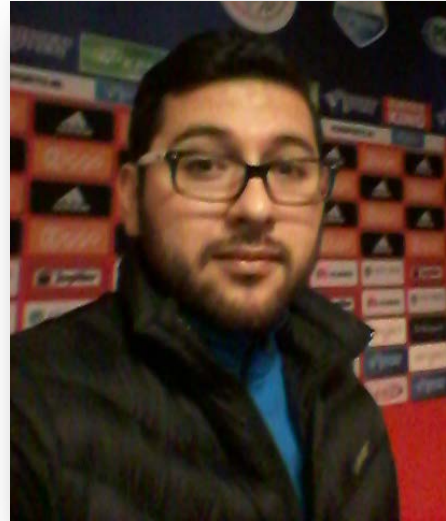


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Introducing MSc students

Hi, my name is **Gabriel Chimbo Yépez**, I am from Ecuador. I studied agricultural Sciences in Central University (Ecuador). I won a scholarship sponsored by the government of my country and I decided to continue my studies here in the Netherlands. Here I study the Plant Sciences Master Program; my specialization is Natural Resources Management. I started doing my thesis project about of the role of Organic Matter and its fractions in the improvement of the bioavailability of Zinc. Susan, Ellis and Rob are my supervisors. What could I say about myself? I love plants, and animals (especially cats). I like growing crops, playing football, watching movies, and dancing salsa. After I finish I will return to my country to work there but I would really love to study more in order to acquire more knowledge to share with the people from my country.



Introducing guests



My name is **Kira Hontoria Fernandez** from the Universidad Politecnica de Madrid, Spain. I am also the Spanish supervisor of Irene, the visiting PhD student who worked with Janna and Gerlinde last spring-summer.

As a follow up of the microscopy work of Irene I will work with Henk and Gerlinde on investigating root microbial communities in roots of the field experiment from Janna using molecular techniques.

I will stay for the next three months, my office is B 301 but I will often be in the soil-biology-molecular on the 0 floor.

I would like to introduce myself. My name is **Giulia Mainardi**, MSc student from the University of Padova. I'm originally from Vicenza, small town in the north-east of Italy.

I graduated in Environmental Science in 2014, and I will be in Wageningen for the next six months to work on my MSc thesis with Laura Garcia Martinez. We will test how different agricultural practices impact on the soil microbial community, especially on their ability to degrade plant litter.

I can't wait to meet you all and work in your department.



a



Hi everybody! My name is **Mengchu Guo** and I come from China. I'm a PhD student in plant nutrition from China Agricultural University. I will spend 2 years as a visiting PhD student (from January 2016) in Wageningen UR with Oene Oenema supervising me. I am working on the impact of human diet on nitrogen flows in the food chain of China.

I am a huge fan of Arsenal football team, and I am very interested in digital technology and photography. I think Wageningen is a nice place to do scientific research and to know different people. You can find me in room B. 301 Atlas.

Introducing PhD candidates

On November 1st **Giulia Bongiorno** started as a PhD student in the Soil Biology and Biological Soil Quality group. Giulia is from Italy, and is appointed on a EU project entitled iSQAPER (acronym for: Interactive soil quality assessment in Europe and China for agricultural productivity and environmental resilience).

During the first two years of Giulia's appointment she will work with us in Wageningen at the department of Soil Quality. Thereafter, she will move to the Swiss Research institute of Organic Agriculture FiBL, where she will finish the project during the final two years. We expect her back in 2019 to defend her thesis in Wageningen.

Giulia can be found in office D.309 (with Ingrid and Mart), she will work 5 days per week, and she will be supervised by Ron and Else Bünemann from FiBL.



In recent years, extensive research in the field of soil quality indicators has been carried out worldwide. However, there is no consensus yet as to what combination of measurements for the assessment of agricultural soil quality is the most suitable, in particular regarding essential soil functions (soil structure formation, litter decomposition, and carbon, nutrient, and water cycling) that sustain soil ecosystem services.

Our aim, in the context of the EU project iSQAPER, is to unravel new possibilities and advancements, and filling knowledge gaps in soil quality indicators (especially biological indicators). We will study and explore knowledge gaps in the field of quality indicator systems, by carrying out experimental work. Factors including sensitivity to indicate soil threats, soil functioning, and management interactions, as well as costs, reliability and simplicity, will all be considered during the selection and development of soil quality indicators.

My name is **Eduardo Prudencio**, I was born and raised in Bolivia but I lived in Italy for 4 years studying Natural Science at the University of Pisa. I also studied two years in La Paz, Bolivia at the San Andres State University. I have worked for 3 years part time in the city and part time in the countryside. The last job that I had was a full time project in the rural area of Santiago de Chiquitos, Bolivia. In the last two years I obtained a Master degree in Integrated Watershed Management at CATIE in Turrialba, Costa Rica.

I have just started a PhD. at the Soil quality Department in the FOREFRONT program (coordinated by Dr. Lijbert Brussaard). I have been offered the project MW-PhD2 "Deflecting land degradation and promoting recovery of biodiversity and ecosystem functions in agro-



forested landscapes". The field work of the project will be conducted in Marqués de Comillas, Chiapas, México.

During my PhD project of 4 years I will spend 3x6 months at Wageningen: 6 months at the start, 6 months at the end and 6 months in between. During those periods I will be formally employed by Wageningen University.

My supervisory team ((co-)promotors/ directores) will consist of Dr. M. Gavito (IIES) in Mexico and Dr. M. Pulleman, Dr M. Peña-Claros and Prof. Dr. L. Brussaard at Wageningen University in The Netherlands.

My office is room D-305. Looking forward to meeting you all.

Introducing André Braga Junqueira.....

I would like to introduce myself as I have just started a post-doc at the Soil Quality Department. My name is **André Junqueira**, I am originally from Brazil, and I have obtained my PhD last year from Wageningen University, within the Terra Preta Programme (coordinated by Dr. Thom Kuyper). During my PhD I have investigated the use of Amazonian anthropogenic soils (Terra Preta) by smallholder farmers, focusing on farmers' perceptions, agrobiodiversity and land-use patterns associated with these soils. For the next year I will work as a post-doc of the Terra Preta Programme, with the challenging task to integrate - using interdisciplinary approaches - results from the different PhDs who have finished (or are finishing) their theses within the programme. Apart from interviewing farmers, counting plants and digging soil, I also enjoy bothering other people with my (lack of) guitar and football skills.

My office is room B.319.



I look forward to meeting you all! Kind regards, André

..... and Diego Abalos Rodriguez

My name is **Diego Abalos** and I'm a(nother) Spanish postdoc in the group (we are taking over!). I got my PhD from UPM (Spain) in 2014 - The main goal of this research was to evaluate how agricultural systems can be managed to reduce N losses and increase crop productivity, with a focus on N₂O emissions. Since then and working in the same research line, I have been a research visitor at Rothamsted Research (UK) and a postdoc at the University of Guelph (Canada). I recently moved here after securing a Marie Curie Fellowship under the supervision of Jan Willem van Groenigen and Gerlinde De Deyn, to work on the project: *Plant Ecology for Nitrous Oxide Mitigation and Sustainable Productivity*. I will be in room B.319 if you want to discuss anything related to science or plan a visit to the pub!



Cheers, Diego

News from Walter Andriuzzi

On 5 January 2016, two helicopters landed a team of researchers in a place that, at least geographically, is at the frontier of ecological science: the McMurdo Dry Valleys, Antarctica. Wageningen and Soil Quality group alumnus Walter Andriuzzi was lucky enough to be part of this team, and therefore to access a place unlike any other in the world. Below he shares his impressions from this experience.

Imagine a huge valley surrounded by ice-capped mountains and glaciers. The silence is surreal, and the cold is fierce. You are over 10° further south than the Antarctic polar circle (a longer distance than between sunny Madrid and misty Dublin). It's summer, and the Sun never sets – but neither does the cold, relentless wind. In front of you there is a small lake that stubbornly refuses to freeze; turn around, and you see the mouth of a huge glacier, a wall of ice that puts any human fortress to shame. At first the glacier looks small and just a short walk away, but don't be fooled – you may not reach it and come back in time for the helicopter to pick you up before the weather turns hostile! Distances are deceiving in this place without roads, buildings or trees.



There is no green for the eyes to rest upon, not even a patch of mosses or lichens. No bird songs, no buzz of insects. And yet – or perhaps because of it – everywhere the elements conjure the illusion of noisy, visible life. A sudden ripple in the pond makes you think of a surfacing fish, but it was just the wind. Long lines of compacted terrain help you walk across the sandy surface, but they are the results of cracks made by the freezing and thawing of the permafrost, and neither human nor animal feet had a role in making them. The place seems utterly lifeless. But it isn't.

Minuscule animals live, thrive in the dry, saline soil spared from the grip of the ice that covers the most part of this strange continent. The nematode *Scottinema lindsayae*, a worm no longer

than 1 millimeter, is in many places the largest to be found; it makes a living out of the even sturdier microbes and on whatever organic matter it can find (some of it perhaps thousands of years old). Invisible cyanobacteria on the surface manage to get enough energy from the faint (but UV-packed) light during the short Antarctic summer to set a miniature food web in motion. Deep in the ice-covered lakes communities of phytoplankton and bacteria thrive undisturbed. All these organisms are tough, superbly adapted to these hostile conditions. They can inactivate when it gets too cold, cope with high salinity and low moisture, cycle carbon and nutrients in a soil that has less organic matter than most deserts. But even these survivors are having a hard time. Due to human-induced climate change, environmental conditions are becoming increasingly unpredictable. More freeze-thaw cycles impose physiological stress and lead to mismatch in the organisms' responses to seasonal temperature fluctuations. Increasing ice-melting events across the valleys may be spreading some species at the expense of the dominant, dry-specialist ones. Lessons learnt from the McMurdo Dry Valleys may give hints on the fate of other, more complex ecosystems that are also shaped by an unforgiving environment and a changing climate.

It is a privilege to contribute to research on such a paradoxical ecosystem, so tough and yet so fragile, simpler than most other ecosystems but still not fully understood. I trust that the insights I have gained during my time in Wageningen with the Soil Quality group will allow me to contribute to the long-term, collaborative research on the McMurdo Dry Valley soil ecosystem. One thing I can tell already is that a few sampling campaigns in the Netherlands changed my tolerance for bad weather during fieldwork: it surely is cold in the Antarctic valleys, but with the appropriate clothing it may be preferable to the Dutch rain.

News from Hannah Vos

Dear all,

To help you through the cold and rainy Dutch winter I send you a picture from nicely warm Brazil! The picture is taken at the South Eastern coast of this beautiful country, which I visited around Christmas. I'm here to work on a project at the University of Sao Paulo and I found here convincing proof that Wageningen is everywhere: you still remember Andre Mazzetto from a few years ago? Well, I see him often since I work in the same office as his girlfriend. And for sure you remember Tatiana Rittl who got her PhD last summer. She is now a post-doc at USP and it turns out that she is my downstairs neighbour! We live in a small world!

Abraços, Hannah



News from Carlos Alho

Last year, I, Thom, Ellis, Paolo Di Lonardo and Annemieke van der Wal went to the 5th International Symposium on Soil Organic Matter which took place at Georg-August Universität in Göttingen, Germany.

There, Paolo (Priming of soil organic matter and fungal ecology) and Ellis (Dissolved organic carbon as a key factor in general disease suppression by soils) presented their works orally and I (Evaluation of soil organic matter chemical characteristics in Terra Preta de Índio by X-ray photoelectron spectroscopy) presented my work with a poster.



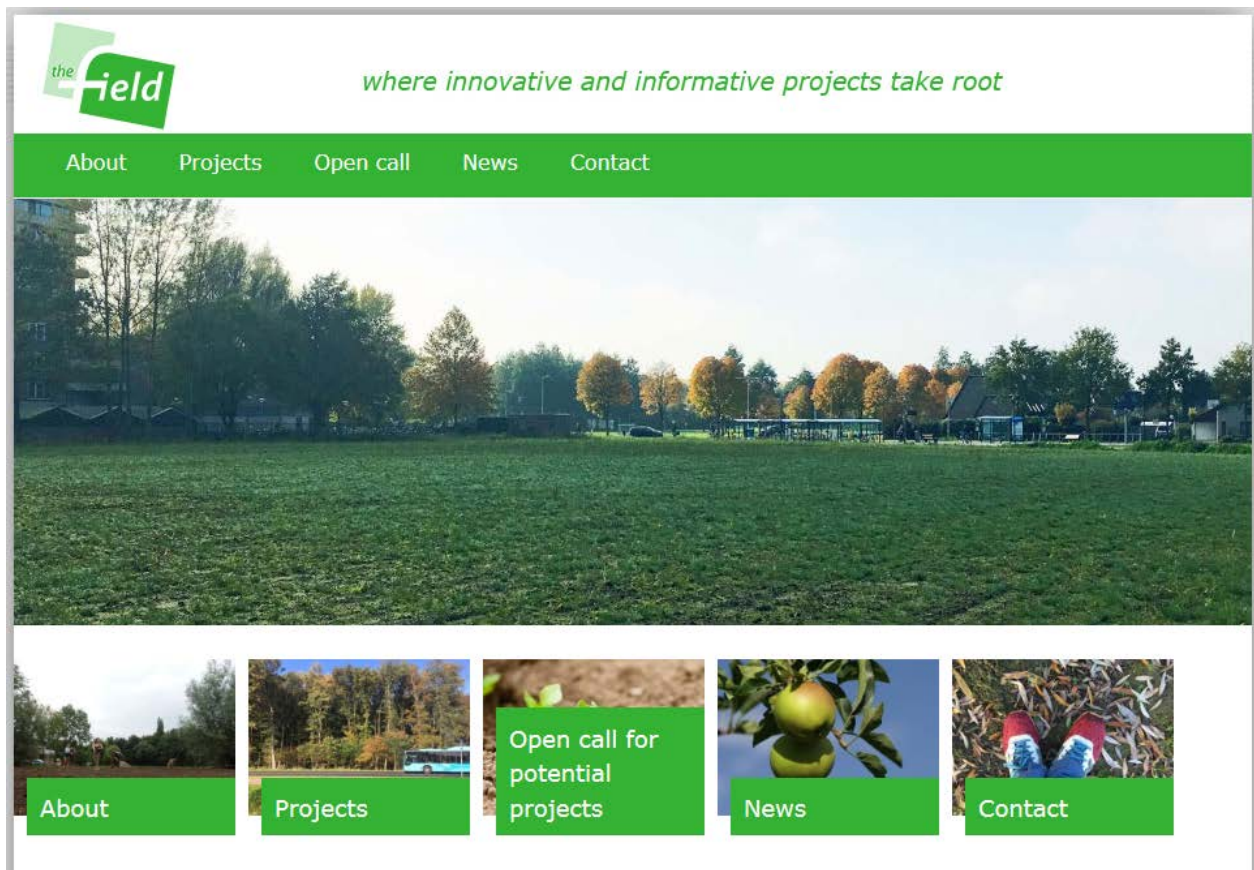
Very good news from Itaynara Baptista.....

Her son, Pedro, was born on December 23rd. She is very happy. Pedro is a sweet and very smart boy.



The Field, Wageningen Campus

Click [here](#) to read more about the Field.



Crowdfunding at the WUR

Gerlinde, Ingrid, Jan-Willem and Wim van Egmond have joined the new Wageningen UR initiative: 'crowdfunding'! This is a very nice opportunity to raise funds to visualise soil life in action (and to see whether there is actually a crowd out there willing to support us?!). More info about our specific project can be found on (we will soon include the English clip too): <http://crowdfunding.wageningenur.nl/project/maak-het-mysterieuze-bodemleven-zichtbaar?locale=en>

Some background info about the crowdfunding platform is provided in this recent Resource article:

<https://resource.wageningenur.nl/en/science/show/Crowdfunding-platform-starts.htm>

Interesting links

- [SOQ website](#)
- [Chemical Biological Laboratory](#)
- [Terra Preta](#)
- [Science cafe](#)
- [colloquia Environmental Sciences](#)
- <http://www.soilecology.eu/>

New born girl for Steve and Eva

Their second beautiful daughter was born on the 25th of September. Audrey Crittenden Urquia was only 50 grams and 1 cm different than her sister Dafne when she was born. Congratulations from all of us.



Oral defences in September

September 30, **André Braga Junqueira** on: Anthropogenic soils in central Amazonia: farmers' practices, agrobiodiversity and land-use patterns

And his lovely wife **Catarina Jakovac** on: 'Resilience of Amazonian landscapes to agricultural intensification'.

Photo stolen from the internet



Wei Qin on October 6: 'Exploring options for improving water and nitrogen use efficiency in crop production systems'.

The after party was really nice. Food, drinks and music.



Steve Crittenden on December 9 on: 'Biophysical soil quality of tillage systems in conventional and organic farming'.



Upcoming oral defence ceremonies:

Xinxin Wang , June 7, 11.00 hours on: 'Variation of Phosphorus Acquisition Efficiency of Maize Varieties as Related to Mycorrhizal Functioning'.

Pelin Kocatürk, June 24, 08.30 hours on: 'Recovery of nutrients from biogas digestate with biochar and clinoptilolite'.

Kimo van Dijk, June 24, 11.00 hours on: Exploring options to increase phosphorus use efficiency in the food chain in Europe.

Also upcoming: **Lijbert's farewell address**, October 6, 16.00 hrs on: De bodem onder ons bestaan (The ground below our existence).

All presentations will be at the Aula of Wageningen University, Generaal Foulkesweg 1, building 362. Graduation ceremonies can be followed real-time on the internet, click [here](#).

Thom and Ellis in China

Thom and Ellis went to see our colleague Chunjie Li in China, also to inspect her field experiment. Thom gave a presentation at the International Workshop of Intercropping. Pictures were made by Chunjie.





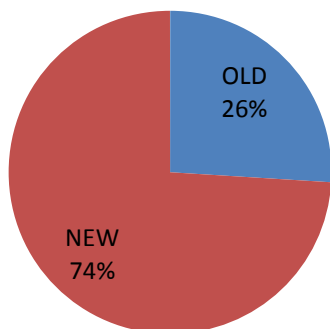
The Atlas Work Floor Survey: OLD or NEW?



Author for correspondence is ingrid.lubbers@wur.nl. Electronic supplementary material and references at request. Open access exclusively for SOQ employees.

New Year Special - "Two things" dedicated to OLD or NEW

Now all the 'New Years' have started and 'old years' have ended (recently the Chinese joined the new (Monkey) year), the question for this edition of 'Two things' was appropriately "Do you prefer the OLD or the NEW?". Obviously this could mean absolutely anything.



Like Lijbert asked himself aloud: "Is there anybody saying OLD??" There is no question about it: on average SOQ employees prefer the NEW. There seems to be much truth in what for example PeiPei said: "Discard all the OLD", or Wim claimed: "All is NEW".

Fig. 1 | Percentage of people who preferred "OLD" and "NEW" for the 42 responses of SOQ employees

Looking even further into the matter, it is striking that older people like the NEW better than younger people (82% vs. 71% pro NEW, respectively). One would expect the opposite, because a favourite statement of the old is: "Everything was better in the past". Apparently not so on the Atlas Work Floor.

Another interesting detail this research reveals is that Asian people like the NEW better than European people (89% vs. 69% pro NEW, respectively). This can easily be explained. Europe is the continent with many different old cultures, or at least, that is what Europeans like to think, and Asia is the booming continent, where all is happening at the moment.



However, as always, not everybody agrees. At least a quarter of the employees has a different opinion. Jan Willem van Groenigen, who was interviewed at the spot, even strongly disagrees.

In conversation with Jan Willem

Reporter: "Jan Willem, would you choose OLD or NEW?"

Jan Willem: "Oh no! Not 'two things' again!?!?!? Can't you think of something new!?!?!?"

Reporter: "But it's a timely dichotomy, don't you think?"

"No I don't. It's as old as Methusaleh! But if I have to choose, it is 'Old' of course! No competition there. New is very much overrated. I've seen many things that were supposed to be new in my life, and I observed that at some point people always started to notice that they're actually old. Old is the old new. Actually, when I think of it: new is the new old. Or, at least, it will be very soon...."

I can still remember that wearing knitted socks in your sandals was the sign of a hipster. Now all of a sudden, people start looking at me funny! Well, people outside of ecology at least - perhaps ecologists are more consistent than others. Or more fashionable. Perhaps both!

Conversely, old may very well turn out to be new after all. Look at recent developments: drinking rosé wine and eating fondue is totally back; Paul McCartney will be the opening act at Pinkpop this year; and recently a Star Wars movie came out in which Princess Leia is finally single again. People act like these things are new. I've been begging for all those things at least since the mid-80s!!!!!"

Reporter: "But, surely, in science novelty is very important?"

"Of course not! Good concepts never get old! Look at soil quality indicators: they have been a promising new field for at least 30 years, and will probably remain so for the coming 30 years as well. And, if you take a broader perspective: look at the two most significant scientific findings in recent years: first, gravitational waves have been detected, so Einstein was right. Second, we showed that earthworms increase crop yield, so Darwin was right. This is good. This is solid. Why argue with the greats!?!?! Whitehead said that all western philosophy of the last 2000 years was basically a footnote to Plato. I say that all ecology of the last 130 years is basically a footnote to one book by Darwin. The one on earthworms.

So, it has been, and will be, old all along. People have to be more consistent, that's the problem nowadays! Old is the way to go."

Reporter: "Thank you for your opinion! Can we ask you for the next newsletter as well?"

"Yeah, sure. As long as you finally come up with something new....."

Extra's

DID YOU KNOW...

- Tjisse is OLD but always had NEW ideas?
- Tamas hates to throw away OLD things that are still NEW?
- Gerlinde is a bit RETRO?
- ... and does not like NEW technologies?
- Gerwin is nostalgically inclined?
- Office mates Thom and Ron always have different answers?
- ... and Ron is the one who likes the NEW?

Quotes with OLD and NEW

To raise NEW questions, NEW possibilities, to regard OLD problems from a NEW angle, requires creative imagination and marks real advance in science.

Albert Einstein

I have always been delighted at the prospect of a NEW day, a fresh try, one more start, with perhaps a bit of magic waiting somewhere behind the morning.

J. B. Priestley

OLD wood best to burn, OLD wine to drink, OLD friends to trust, and OLD authors to read.

Athenaeus

The sun is NEW each day.

Heraclitus

You are never too OLD to set another goal or to dream a NEW dream.

C. S. Lewis

I don't feel OLD. I don't feel anything till noon. That's when it's time for my nap.

Bob Hope

Anyone who has never made a mistake has never tried anything NEW.

Albert Einstein

We keep moving forward, opening NEW doors, and doing NEW things, because we're curious and curiosity keeps leading us down NEW paths.

Walt Disney

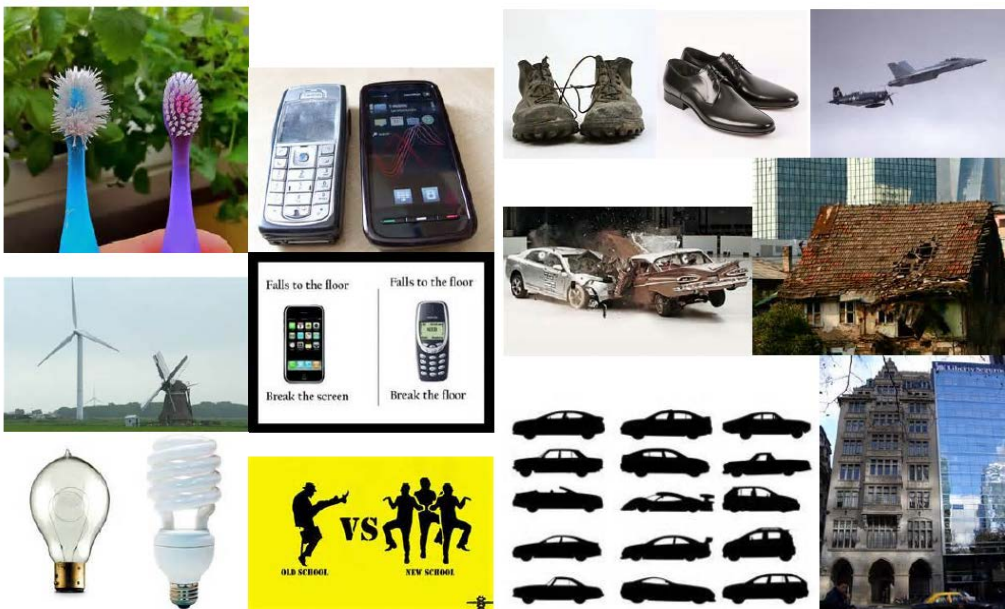
Old friends pass away, NEW friends appear. It is just like the days. An old day passes, a NEW day arrives. The important thing is to make it meaningful: a meaningful friend - or a meaningful day.

Dalai Lama

Every NEW beginning comes from some other beginning's end.

Seneca

Visualization report for OLD vs. NEW





3 questions for Diego!



1. WHAT'S YOUR FAVOURITE COLOUR?

.....
"Grey, black and brown. I have a distinguished sense of elegance so these are the only colours I allow myself to wear."

2. WHAT'S YOUR FAVOURITE DISH?

.....
"Cocido. A Spanish national dish made of chickpeas and a combination of all the possible meats you can think of. Some people add vegetables. I don't like these people."

3. WHAT'S YOUR FAVOURITE BOOK?

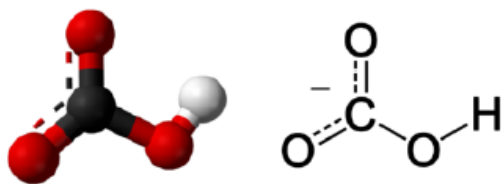
.....
"Cien años de soledad (One hundred years of solitude). I read it when I was a teenager (2 years ago) and it made me wish to be a novella writer. I recommend it if you think you are a teenager who may want to be a novella writer."

BONUS QUESTION.

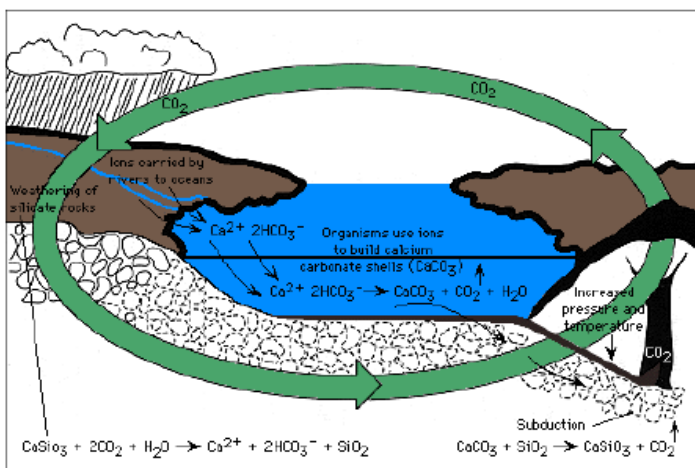
Can you explain how answering difficult pub quiz questions can contribute to your career as an independent scientist?

.....
"I'll tell you when I manage to answer a difficult pub quiz question. So far my experience in pub quizzes have been a concentration of failures blurred by large amounts of beer consumption."

Marcel's favourite soil species



Bicarbonate (hydrogen carbonate) ion, because it plays a key role in stabilizing Earth's climate on geological time scale.



Gopher (Geomyidae), because of their tunneling activities and relaxed life style...

