

# Science Communication

Outreach-disseminate

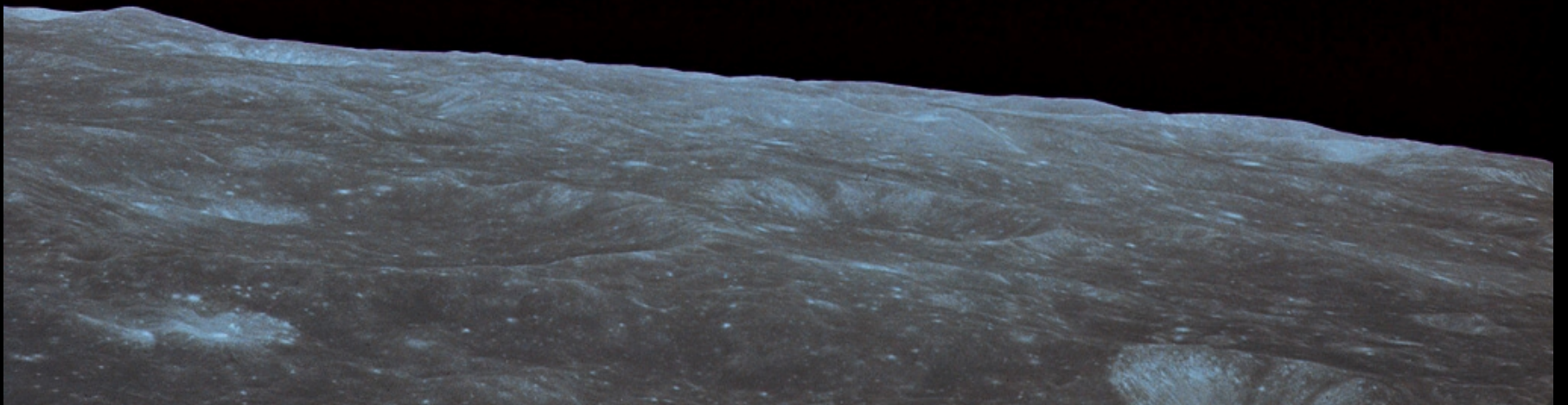


*What do you do?*





@kikkikleiven





JOIDES Resolution

37  
36  
35  
34  
33  
32  
31  
30





**”The 30-second-are-you-able-to-tell-it-in-the-elevator-format”**



- The 30 -second format is an effective way to win attention when you give talks, or when you write an article or opinion piece .
- Can you awaken interest, you meet a reader or an audience that is motivated to think more deeply about what you have to say.



**Peer-to-peer communication**



**Outreach for Educators and schools**

**Dissemination for mass media**



**Dissemination for policy makers**







**Peer-to-peer communication**



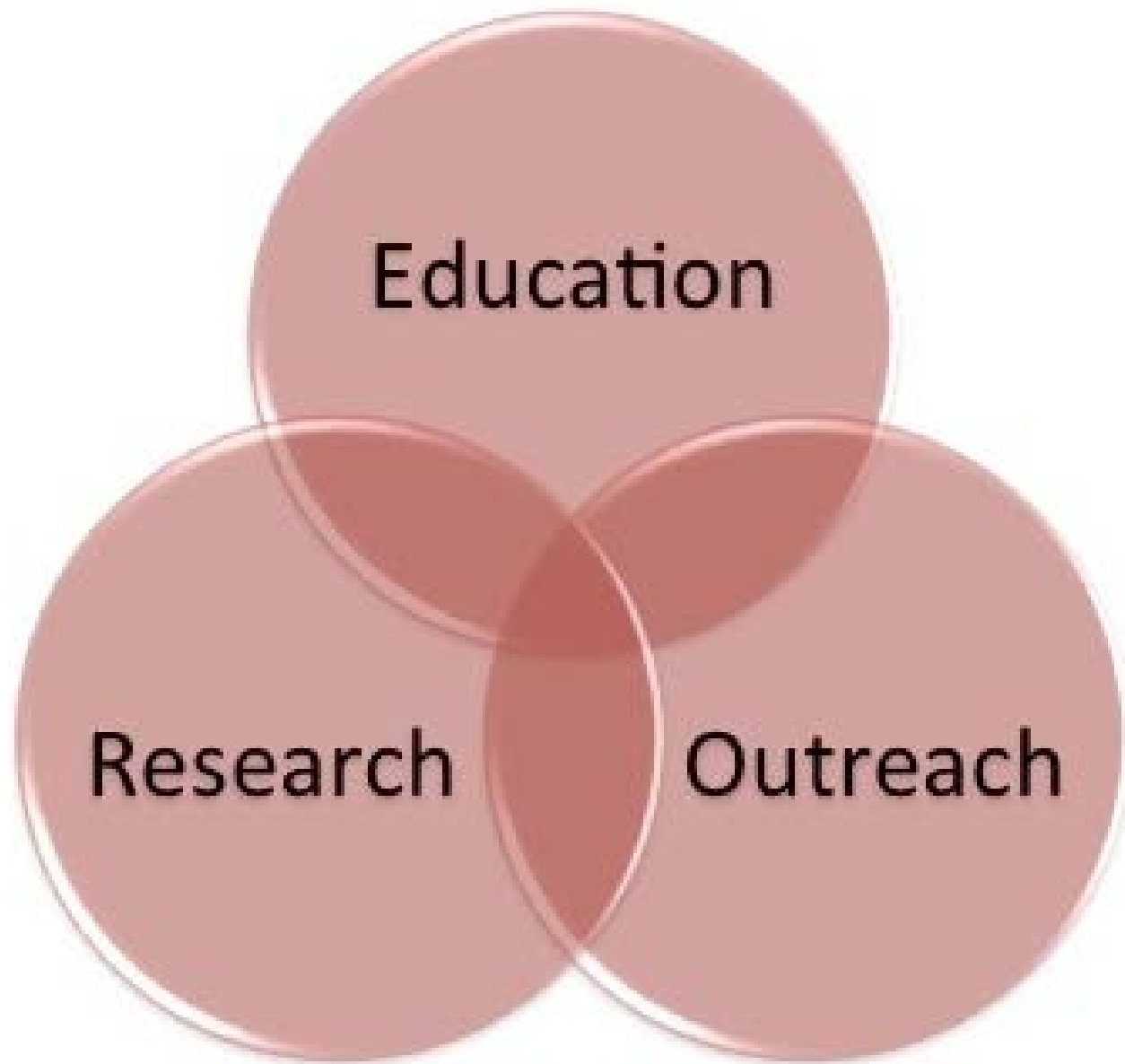
**Outreach for Educators and schools**

**Dissemination for mass media**



**Dissemination for policy makers**





Education

Research

Outreach



*Why do we do it?*



# 5 barriers to research communication

1. Outreach does not give much merit
2. Dissemination traditionally gives little prestige (among colleagues)
3. Provide little or no economic impact
4. I do not have time
5. Bound by tradition

What on earth can a university do to get the researcher to do something she had not thought to do , do not have time to do, and not even being rewarded for doing ?

# Why do we do it?





***Becoming a fossil* is a quick  
and effortless way to *become*  
a global superstar**



**Be human**

**Choose low oxygene environments**

**Pick your burial spot carefully**

**Be found**



# *Who do you want to be?*

## **The main person:**

The researcher presents the results of her own research or gives an account of research evidence in her own area

## **The helper:**

Journalists gladly contact with researchers and other experts when they do their research (journalistic investigation) of reports

## **Expert Commentator :**

Journalists are constantly looking for scientists and experts who can comment on current affairs. Maybe they need your voice to say something about an international research study . Maybe they need a critical voice, which could bring some conflict into the reportage



## **The entertainer:**

where a panel of scientists answers all kinds of questions like a science entertainment show on Friday night

# *“Your paper have been chosen for an Oral Presentation...”*

We encourage our participants to adopt a crisp 10 Minutes Presentation Format.

- 1 Minute: Self Introduction and Topic**
- 2 Minutes: Problem Area/ Need of Research**
- 2 Minutes: Inputs/ Efforts/ Methodology**
- 2 Minutes: Outputs**
- 1 Minute: Take Aways**
- 2 Minutes: Discussion**

This format is tried and tested, and makes the sessions very meaningful, rather than monotonous and full of slumber.

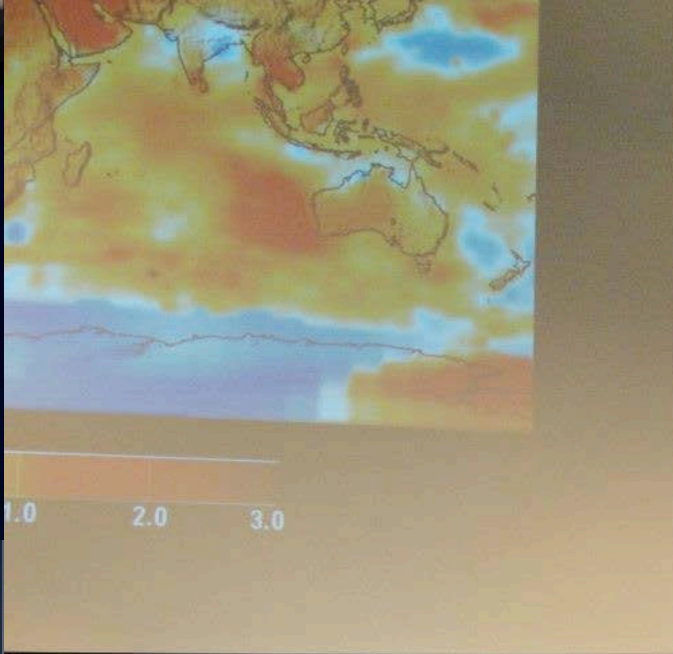


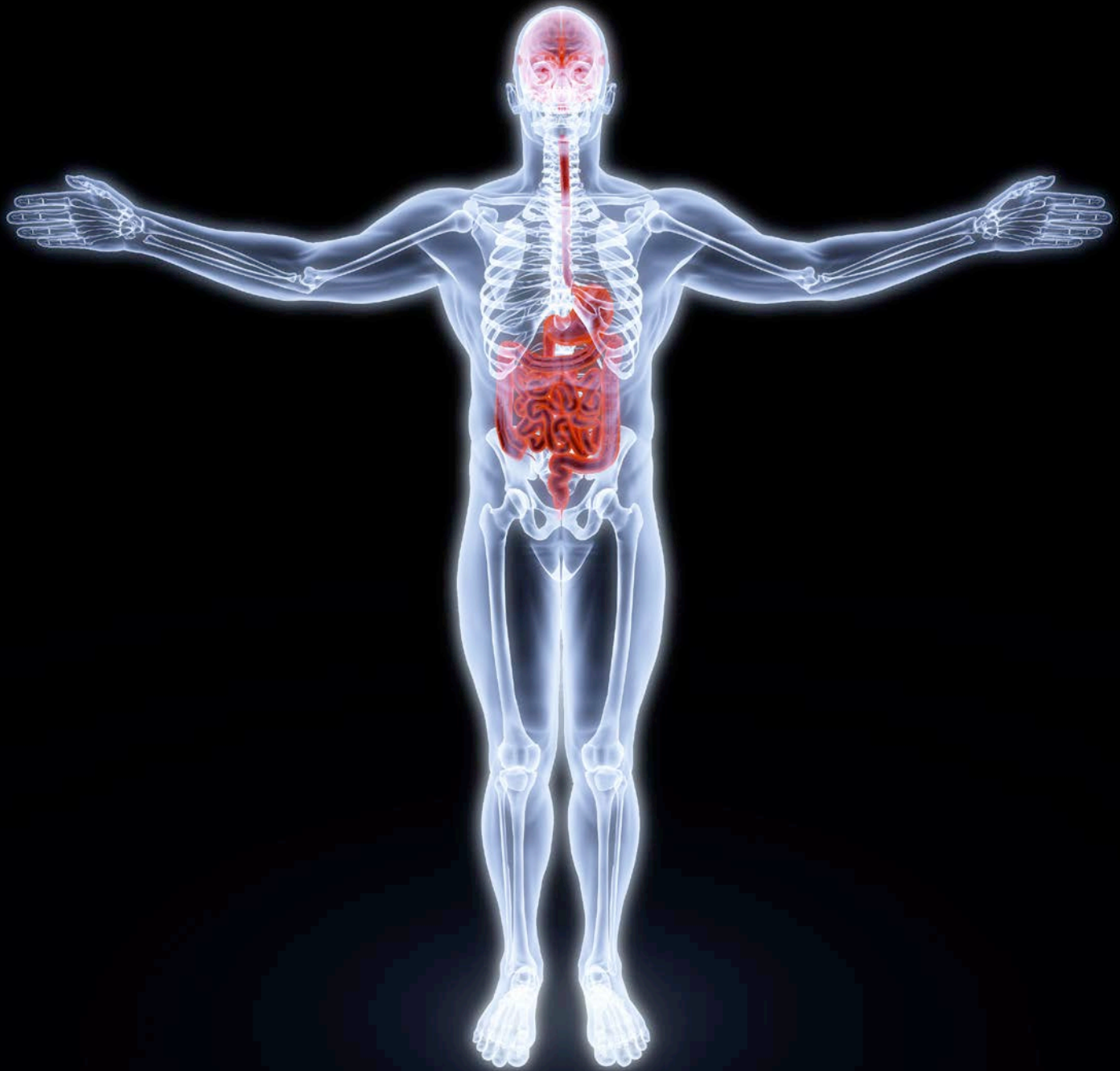
- Why is this interesting
- What have you found out , what are the main findings / conclusions
- How have you come to this ?
- What practical implications could this have ? What advice can you give on the basis of research?











The art of speech is a classic skill that carries the tag rhetoric

It allows you to play on three factors:

- **your credibility ( ethos )**
- **subject matter content ( logos )**
- **and the public emotions ( pathos )**

Unfortunately it is not always enough with credibility and good content. You also need to speak to people's hearts.

You have to dare to offer yourself and show your commitment .

**Be yourself! Play on your own strengths. Do not attempt to imitate others. Then you can lose your credibility.**

**Decide what you want to achieve . What do you want the lecture to lead to ?**

**Concentrate on one or a few key messages .**

**Tell what to you want to talk about , tell and summarize the points you want people to take home with them!**

**A lecture is not dependent on cool presentation tools . Try without. A good story well told trumps PowerPoint !**

# VOLCANIC ERUPTIONS AND CLIMATE

**Abstract.** Volcanic eruptions are an important natural cause of climate change on many timescales. A new capability to predict the climatic response to a large tropical eruption for the succeeding 2 years will prove valuable to society. In addition, to detect and attribute anthropogenic influences on climate, including effects of greenhouse gases, aerosols, and ozone-depleting chemicals, it is crucial to quantify the natural fluctuations so as to separate them from anthropogenic fluctuations in the climate record. Studying the responses of climate to volcanic eruptions also helps us to better understand important radiative and dynamical processes that respond in the climate system to both natural and anthropogenic forcings. Furthermore, modeling the effects of volcanic eruptions helps us to improve climate models that are needed to study anthropogenic effects. Large volcanic eruptions inject sulfur gases into the stratosphere, which convert to sulfate aerosols with an  $e$ -folding residence time of about 1 year. Large ash particles fall out much quicker. The radiative and chemical effects of this aerosol cloud produce responses in the climate system. By scattering some solar radiation back to space, the aerosols cool the surface, but by absorbing both solar and terrestrial radiation, the aerosol layer heats the stratosphere. For a tropical eruption this heating is larger in the tropics than in the high latitudes, producing

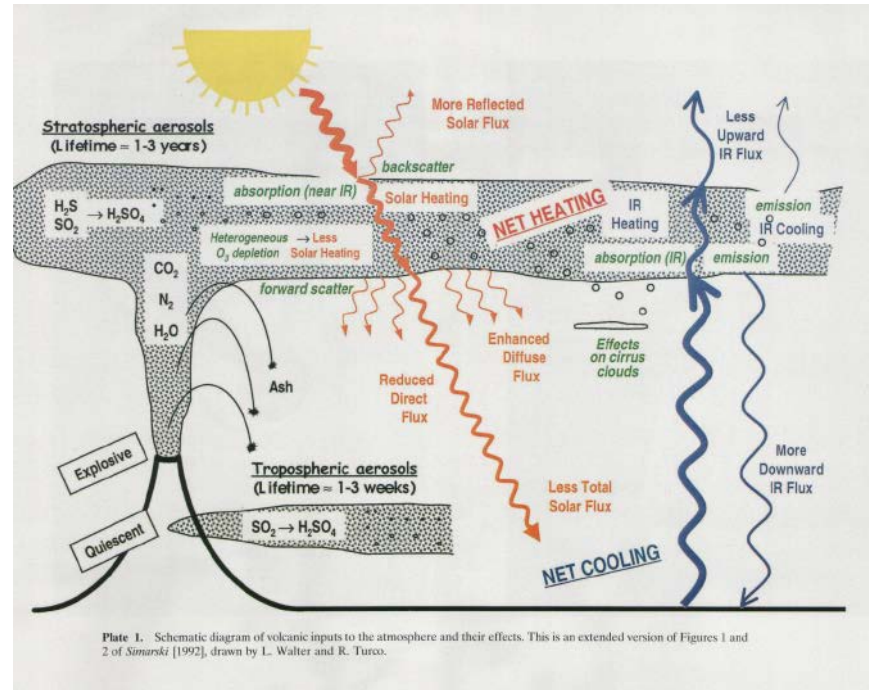
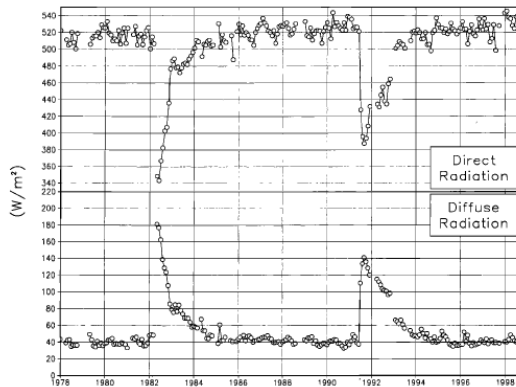


Plate 1. Schematic diagram of volcanic inputs to the atmosphere and their effects. This is an extended version of Figures 1 and 2 of Simonski [1992], drawn by L. Walter and R. Turco.

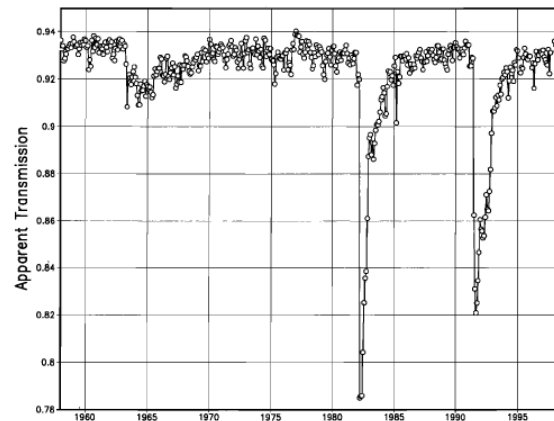


Figure 1. Broadband spectrally integrated atmospheric transmission factor, measured with the pyrheliometer shown in Plate 2. Dutton et al. [1985] and Dutton [1992] describe the details of the calculations, which eliminate instrument calibration and solar constant variation dependence, and show mainly the effects of aerosols. Effects of the 1963 Agung, 1982 El Chichón, and 1991 Pinatubo eruptions can clearly be seen. Years on abscissa indicate January of that year. Data courtesy of E. Dutton.

## 8. SUMMARY AND DISCUSSION

Large volcanic eruptions inject sulfur gases into the stratosphere, which convert to sulfate aerosols with an  $e$ -folding residence timescale of about 1 year. The climate response to large eruptions lasts for several years. The aerosol cloud produces cooling at the surface but heating in the stratosphere. For a tropical eruption this heating is larger in the tropics than in the high latitudes, producing an enhanced pole-to-equator temperature gradient and, in the Northern Hemisphere winter, a stronger polar vortex and winter warming of Northern Hemisphere continents. This indirect advective effect on temperature is stronger than the radiative cooling effect that dominates at lower latitudes and in the summer.







**Think of your audience. What are they interested in and what are they concerned about ?**

**How can you present your message so that they recognize themselves in it.**

**Try to capture your audience's attention from the first moment.**

**Show that you know who you're talking to .**

**Introduce yourself , both professionally and personally. Break the ice!**

**Engage your audience. Try a personal stories . Feel free to use physical objects to illustrate your point. Think of a strong finish with a call to action .**

**You can not practice enough before you give the talk! Practice in front of others. Be sure to get honest, constructive feedback .**

*Why do we do it?*



**Thank you!**



*Foto: U. Ninnemann*