THE FUTURE OF GEOSCIENCES

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INTRODUCTION

- The future of geosciences will be radically different than it was 100 , 50 or even 5 years ago .
- The future of geosciences will involve research into renewable energy and the depleted water resources .
- Geoscientists will be called to help find water on other planets or decipher the geological history of a planet to see if it is habitable.
- Dating techniques will improve so we can understand how fast one animal evolved , or how fast climate change can realistically take place .

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- The less talked sub-discipline of geosciences , Medical Geology will open up.
- As the geoscientists, we will inevitably be given more responsibility to solve the Earth's problems.

THE WATER SCARCITY

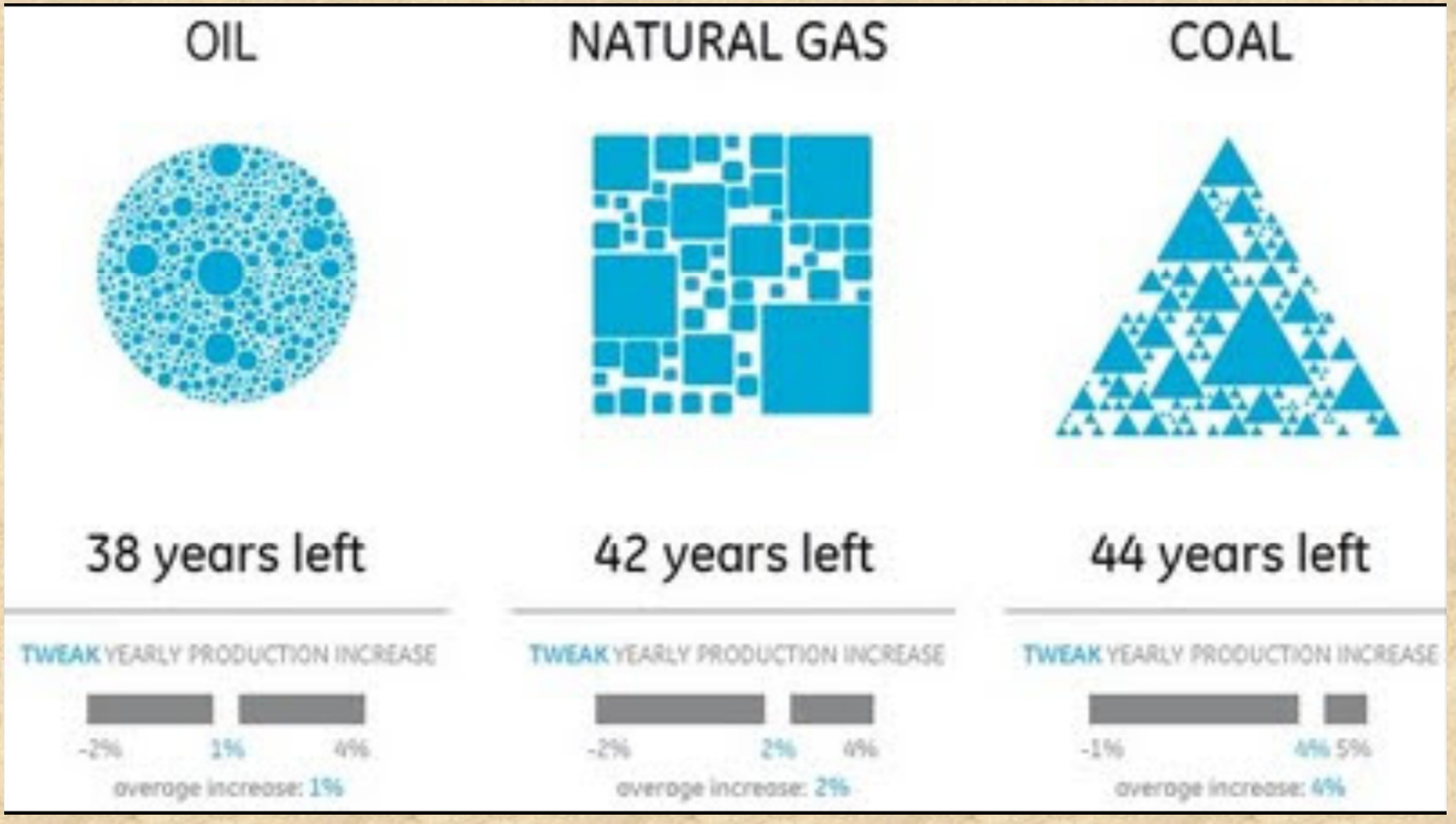
- In 2010 National Geographic released a magazine that related to the scarcity of fresh water and the challenges many face to simply find water .
- Much of the water on Earth's surface is unsafe to drink or economically not recoverable .
- **Geoscientists must develop affordable ways to process saline water , clean up polluted water , or drill for uncontaminated groundwater.**

Many parts of the world are suffering from this problem of water scarcity & geologists are trying find new sources of fresh water

THE FALL OF FOSSIL FUELS AND RISE OF ALTERNATIVES.

- It is pertinent that our fossil fuel reliance be phased out , in terms of necessity for economy and life .
- At some point oil will run out and by then we absolutely must have an alternative to it .
- In future , focus will be given on the development of alternative sources like Coal Bed Methane ,Shale gas , Gas Hydrates .
- Also the use of renewable energy sources like wind , solar , hydro/geothermal power are coming up replacing the conventional fossil fuels.

The picture shows the estimated time left for fossil fuels to run out !!



MEDICAL GEOLOGY ; PRESCRIBING MILLION YEAR OLD REMEDIES

- **Medical geology ,**is an emerging interdisciplinary scientific field studying the relationship between natural **geological** factors and their effects on human and animal health.
- The U.S. Environmental Protection Agency is at forefront of understanding what certain natural elements can do to one's health

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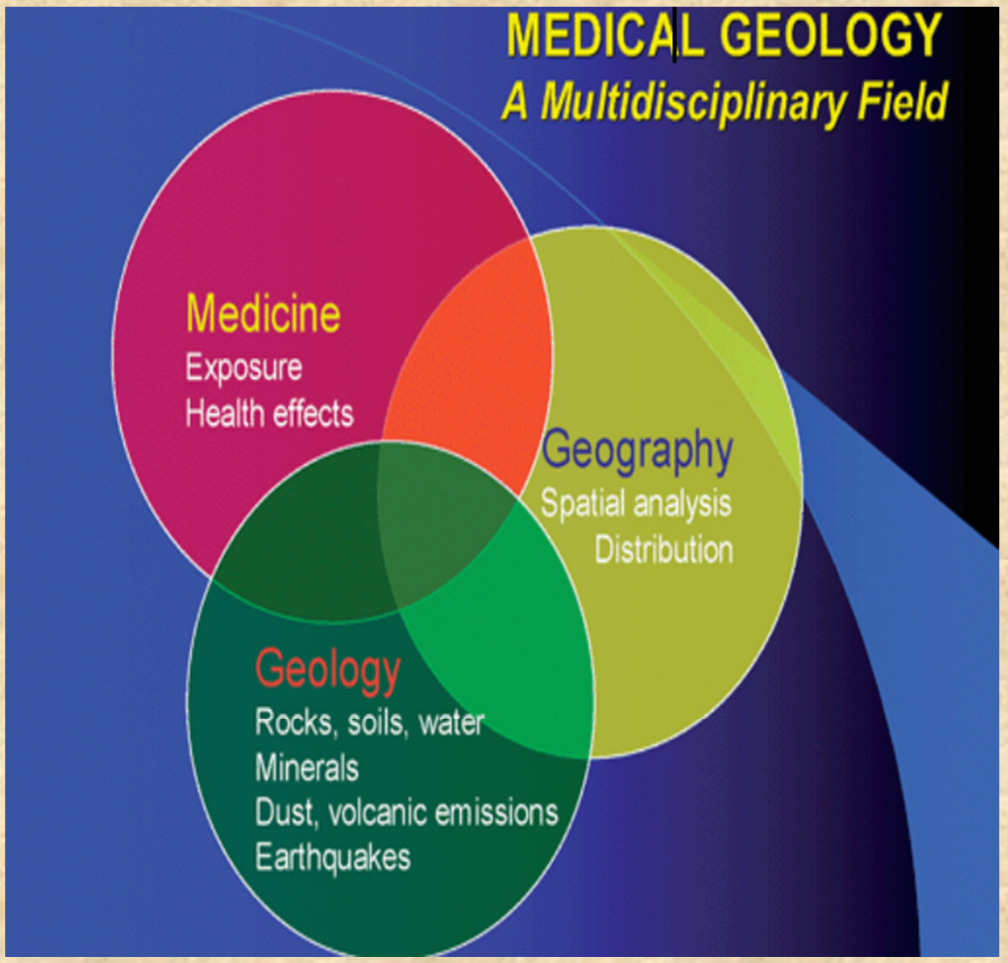
- Researches have shown that volcanic ash , bentonite is good for our intestines .
- Alkaline water is shown to be better for our body than neutral water .
- In the near future , the geoscientists will be working with the hospitals and in clinical research arenas as medical geology becomes gradually more important.

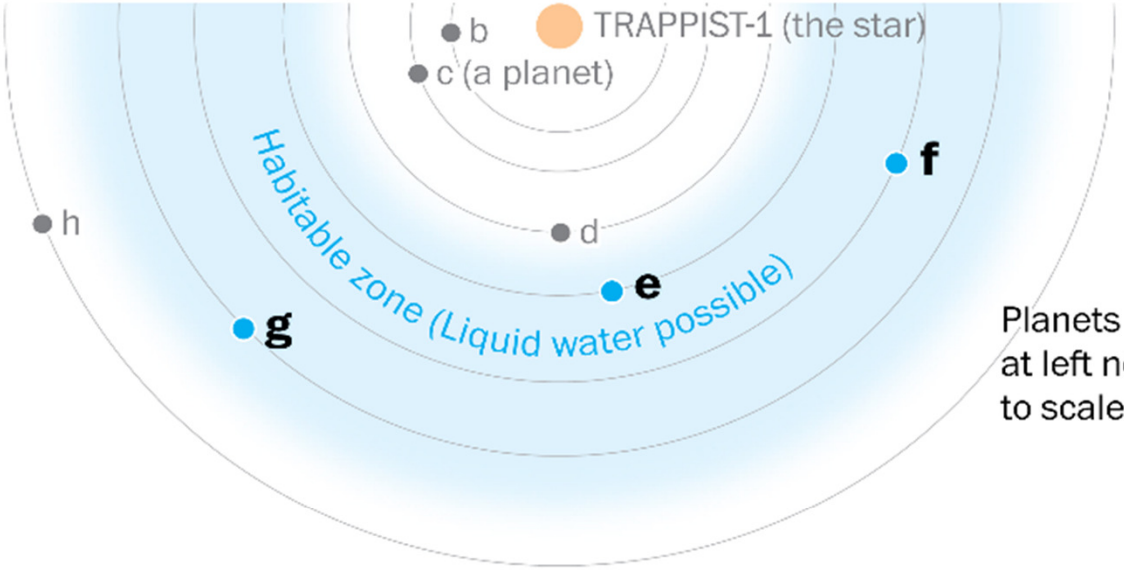

MEDICAL GEOLOGY
A Multidisciplinary Field
Medicine
Exposure
Health effects
Geography
Spatial analysis
Distribution
Geology
Rocks, soils, water
Minerals
Dust, volcanic emissions
Earthquakes

THE SEARCH FOR OTHER HABITABLE PLANETS

- The astronomers along with the planetary geologists in their recent discovery have found TRAPPIST-1 , another solar system 40 light years away from us having three exo-planets in the habitable zone .
- As by the Chandrayaan , there is a significant amount of water at the poles of moon and for the verification of that planetary geologists are at work .
- Geoscientists will be working with the architects on where to place a base on the moon .
- In the meantime , planetary geologists will be sought after to help in determining the geological past of certain planets and if populating the moon or another planet is possibility .

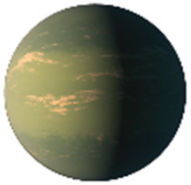
Possibly habitable planets in TRAPPIST-1 system

Scientists say oceans of water could exist on three of the seven rocky planets orbiting the star. Because the farthest planet in the system is only about 6 percent as far as Earth is to the sun, the time it takes to orbit is much shorter.



HOW THE PLANETS COMPARE

TRAPPIST-1 is less than a tenth as big as the sun and a quarter as warm, but the Earth-size planets are much closer, giving them similar heat as Earth.

PLANET	Earth	TRAPPIST-1 "habitable zone" planets e	f	g
				
YEAR	365.26 days	6.10 days	9.21 days	12.35 days

Sources: Nature, NASA

KEVIN UHRMACHER/THE WASHINGTON POST

THE EXO PLANET "e" IS ABOUT THE SAME SIZE AS EARTH AND EVEN IT RECEIVES AROUND THE SAME AMOUNT OF STAR LIGHT AS EARTH DOES.PLANETARY GEOLOGISTS ARE WORKING WITH ASTRONOMERS TO FIND IF IT IS HABITABLE .

CROSS DISCIPLINE EDUCATION

- We need to know a lot about a lot and little about nothing .
- To do meaningful research , knowing multitude about a given subject will not only help in basic understanding , but it will also allow the pursuit of other areas of interest along the same path.
- Because the basic laws of chemistry , mathematics , physics , and geology have already been discovered , one will be hard pressed to find a line of work in just one subject .
- As in recent years , the construction firms are hiring geologists for the site evaluation for the world's most iconic buildings like Burj Al Arab , Burj Khalifa, Palm island to name a few etc.

ACCURACY , PRECISION & TRUTH

- Geoscientists need to continue to find more accurate ways to decipher dates as well as rates of change in geologic past .
- As our precision improves , we can truly get to the bottom of ideas such as the climate change and sea level rise , based on the similar events in the past .
- This will not only improve our understanding of geologic events , but it will also help us solidify what could happen and how fast , in the future.
- The closer we get to dating past events or periods , the greater our understanding of biologic evolution will become .

RESPONSIBILITY

- Geoscientists will inevitably be faced with a much greater responsibility and pressure than they did in the past .
- We will be faced with fixing all of Earth's environmental topics that will be , and are, forced upon us for the good.
- With the many geological societies throughout the world , collaboration can make this work.

CONCLUSION

- Change is inevitable.
- As more geological and environmental issues arise , it is imperative that we face them much differently than our predecessors.
- Geologists will continue to be involved in the energy field (perhaps finding additional resources not yet discovered/accessible yet).
- The geological sciences have contributed to many of Earth's most daunting ,yet interesting , questions .These questions , among others , are being solved and spawning greater curiosity into the mysteries of Earth.

Thank You!!!