

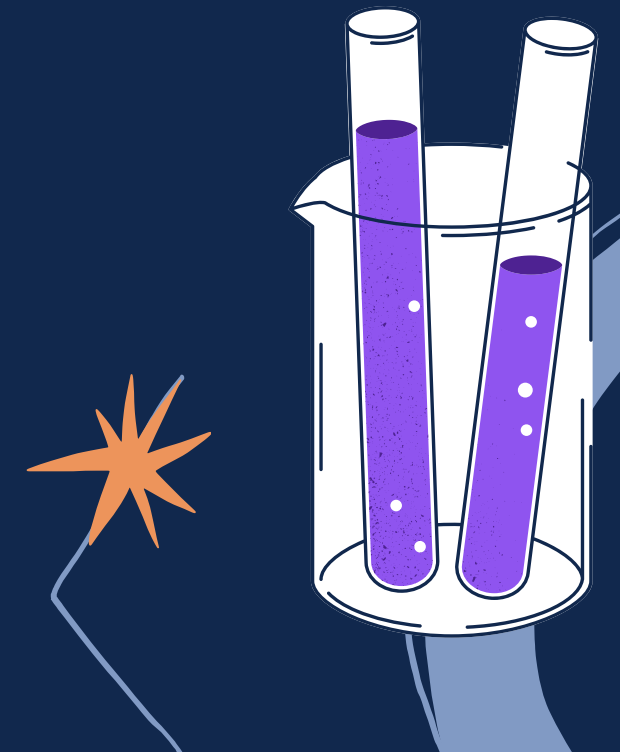


23rd October 2025

Scienza a colpi di TikTok



Marco Martinelli, PhD
Scuola Superiore Sant'Anna di Pisa



Who am I?

Presenting myself

Before starting to communicate science on media and mostly on social media, you should ask your self who are you and how you want to be felt by the public you're refer to!



I studied at Sant'Anna School and I had my PhD at PlantLab working on Cannabis and Iodine.

During my research activities I started running Tv Shows for science popularization on the national TV

I'm an activist for cannabis legalization and human rights protection such as LGBTQ+ civil right

When I'm not in the lab I love to sing, play piano e create my own music

I'm a TikToker and social science communicator

Social Situation in
2022/2023

Social Scenario



Analysis from Kepios shows that there are 4.65 billion social media users around the world in April 2022, equating to 58.7 percent of the total global population

YouTube and Facebook continue to dominate the online landscape, with 81% and 69%, respectively, reporting ever using these sites.

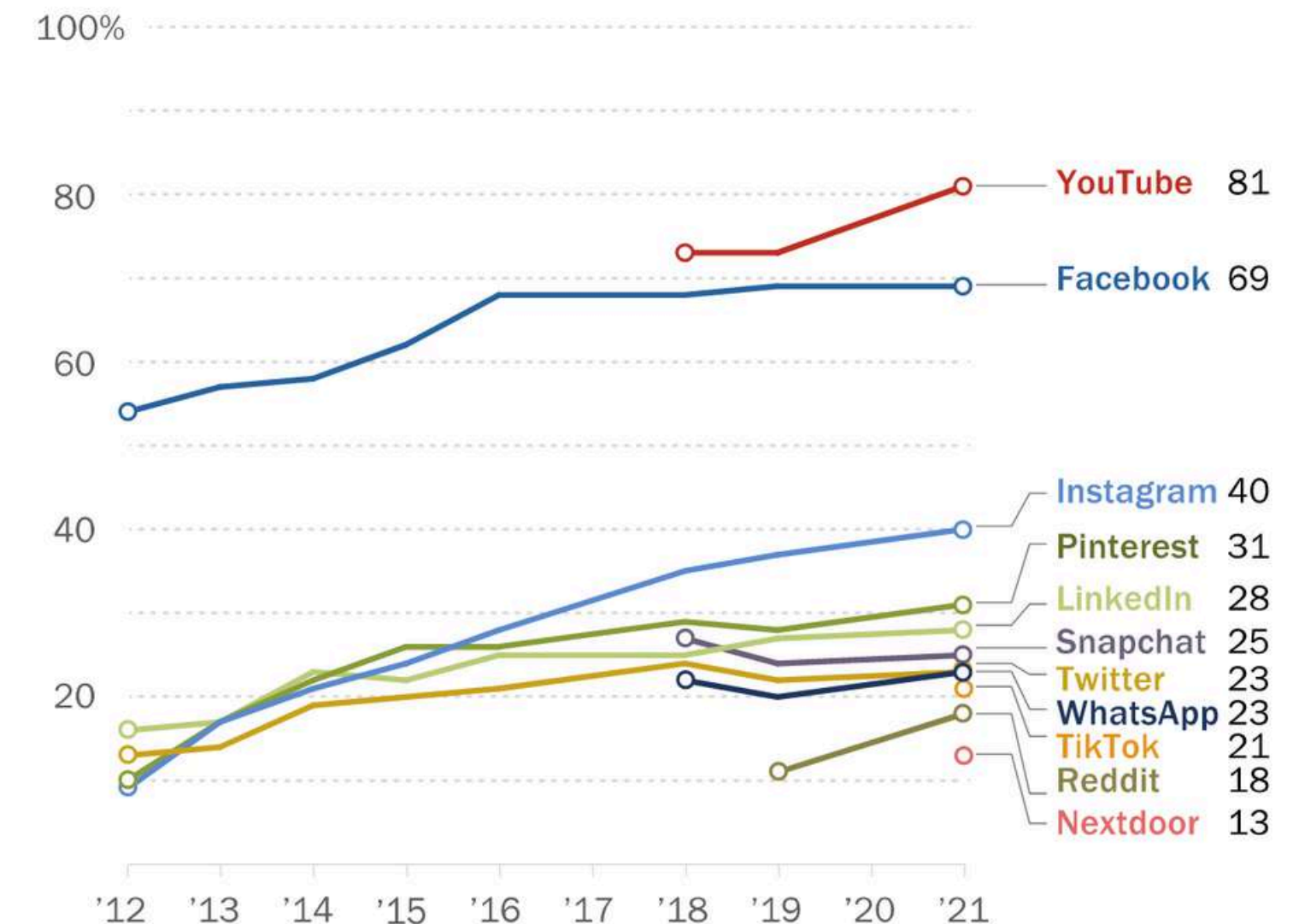


Social Situation in
2022/2023

Social Scenario

Growing share of Americans say they use YouTube; Facebook remains one of the most widely used online platforms

% of U.S. adults who say they ever use ...



Social Media Use in 2021, by Brooke Auxier and Monica Anderson

Social Situation in
2022/2023

Social Scenario



European Project such as Horizon 2020
are boosting science communication
through social media!

- Government programmes are boosting science awareness;
- There is an increase in training and other supports for scientists in public communication;
- There are more and more incentives to support media attention to science;
- There is a growth in university research in science communication;

Social Situation in
2022/2023

Social Scenario



Majorities of 18- to 29-year-olds say they use Instagram or Snapchat and about half say they use TikTok, with those on the younger end of this cohort – ages 18 to 24 – being especially likely to report using Instagram (76%), Snapchat (75%) or TikTok (55%). These shares stand in stark contrast to those in older age groups. For instance, while 65% of adults ages 18 to 29 say they use Snapchat, just 2% of those 65 and older report using the app – a difference of 63 percentage points.

Social Media Use in 2021, by Brooke Auxier and Monica Anderson

What can I communicate?

Social Science for STEM?

EVERYTHING YOU WANT

as long as you're expert
in the field you chose



Where should I communicate
science on social?

Think about
your target
audience

Each social has its own specificity,
medium age, communication mood:
doing comedy videos on LinkedIn is
probably useless whereas on TikTok
is vital.



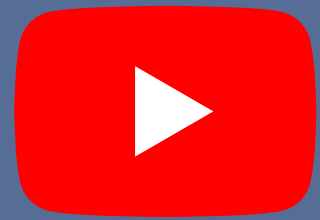
EVERYWHERE YOU WANT



twitch

You should consider whether you want to communicate to experts or to laypeople:

Internal communications



External Communications



twitch



External communication can be convey to:

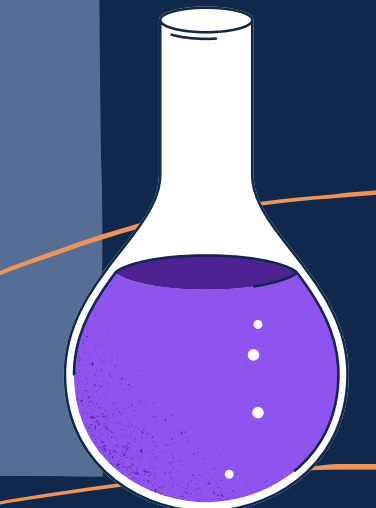
Standar Media

- Journal
- Tv
- Blogs
- Radio

New Media

- Social

On social platform is important adjust the way you communicate depending on who is going to be the communicator: an institution? a Museum? a professor? a student?

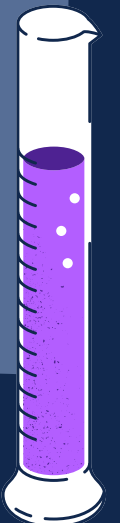
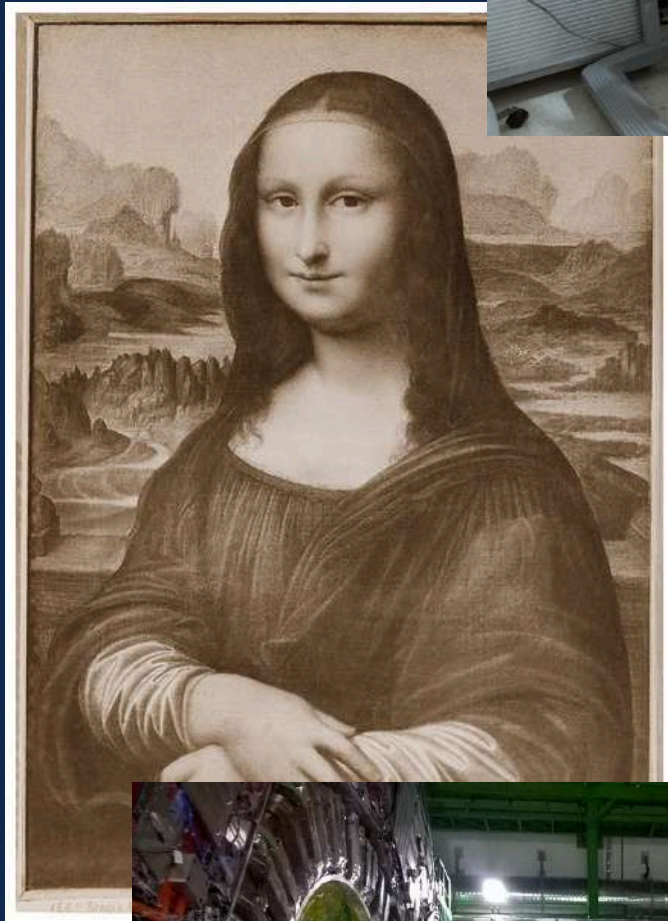


Different profiles

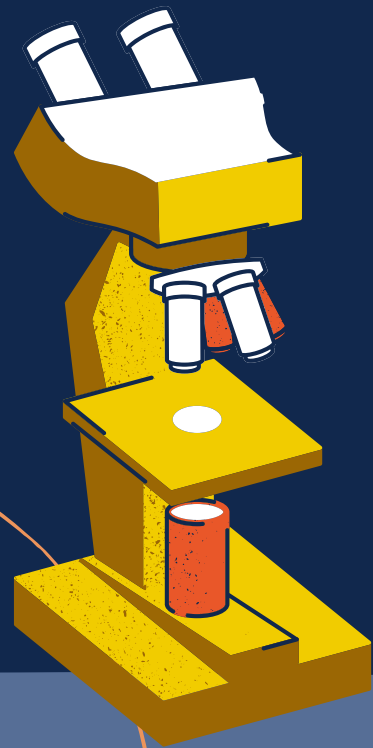
Different Language

Choosing the language you use to run social popularization videos is fundamental.

- Tone of voice;
- English or Italian?
- Difficult or easy words?



HOW THE ALGORITHM WORKS?



Socials want you to spend as much time as you can on social media. The way the algorithm knows you're doing a good content is based on different parameters:

- How long you're watching the video?
- Likes, comments, shares; follows.

The importance of crosstalking profiles



Ecochamber effect

Aggregation in homophilic clusters of users dominates online dynamics leads to:

- Tribe clustering;
- polarization and misinformations proliferation;
- In the work "The Ecochamber effect on social media" the higher segregation resulted on Facebook;



The importance of crosstalking profiles



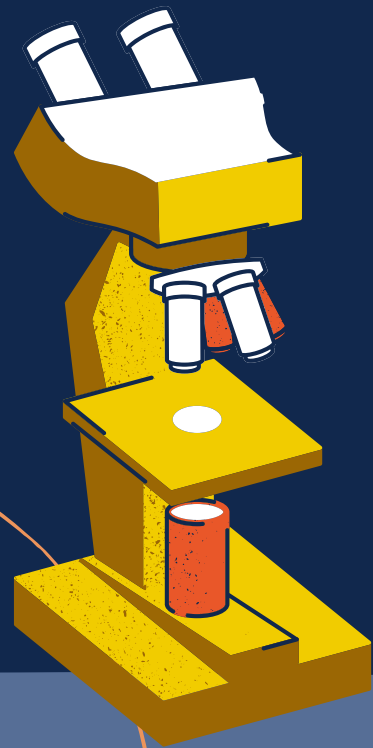
Ecochamber effect

This effect is affecting also a good growth of accounts, how to avoid it?

- Doing collaborations with different profiles;
- Live with profiles working in different fields;



HOW TO AVOID FAKENEWS?



Being an expert is sufficient to be a science communicator?
How to avoid easiness of science complexity?

Laypeople's dependence on expert
support

When science becomes too easy



You are talking to **LAYPEOPLE**

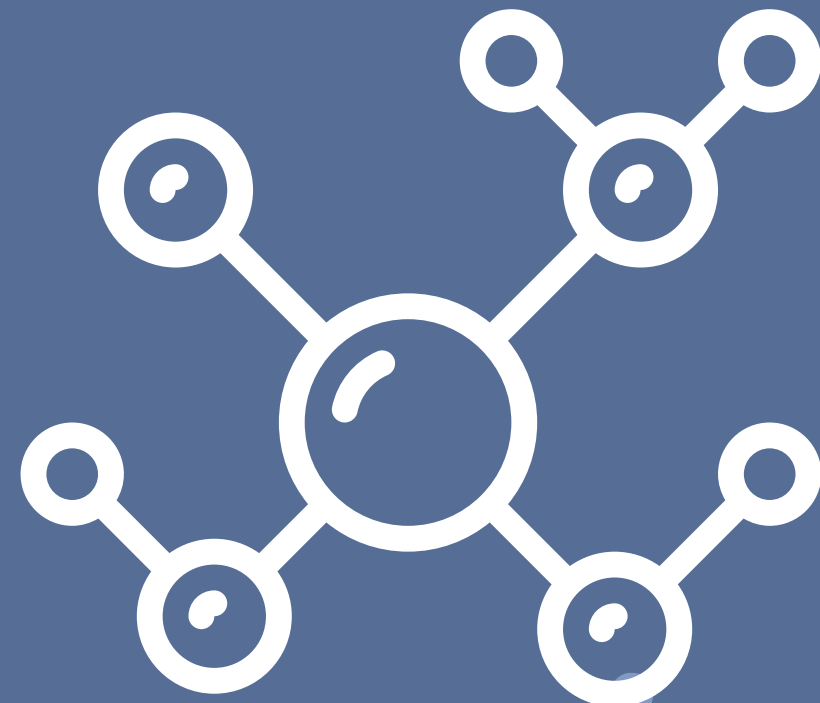
Laypeople may wish to know what to eat in order to prevent certain medical conditions, or whether it is a good idea to vote for a political party that advocates nuclear power



Laypeople's dependence on expert
support

When science becomes too easy

The case of retinoic acid
or retinol treatment



What if the expert is not reliable?

Ethical Boundaries

Clear ethical boundaries must be established to set the norms for the content, form and goals of science popularization

Always think about the consequences, you're word are important and the more you're popular the more you should pay attention



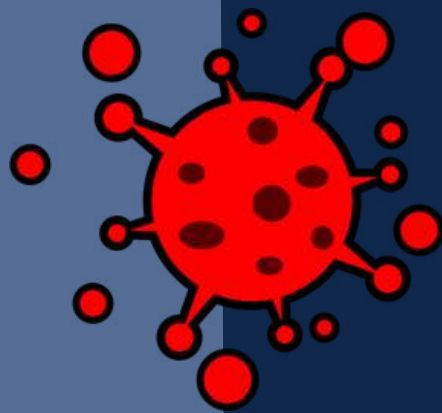
What if the expert is not reliable?

Ethical Boundaries



When to do or not to do?

The Quercetin – Covid 19 Case



We should not communicate everything



What if the expert is not reliable?

Ethical Boundaries



How to do?

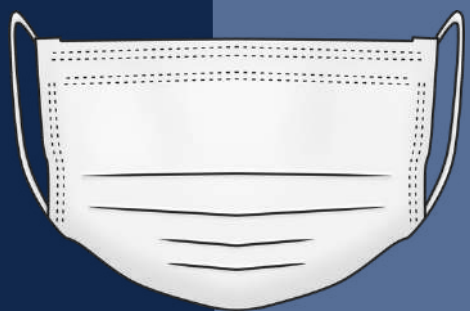
Mask or Vaccines – Covid 19 Case



Masks work



Masks help





GENERAL FEATURES ON IG




Creating an account in social media and filling it promptly is not enough. A number of rules and instruments which affect the page promotion just in Instagram need to be used to achieve an attention growth to your profile. Let's consider them!

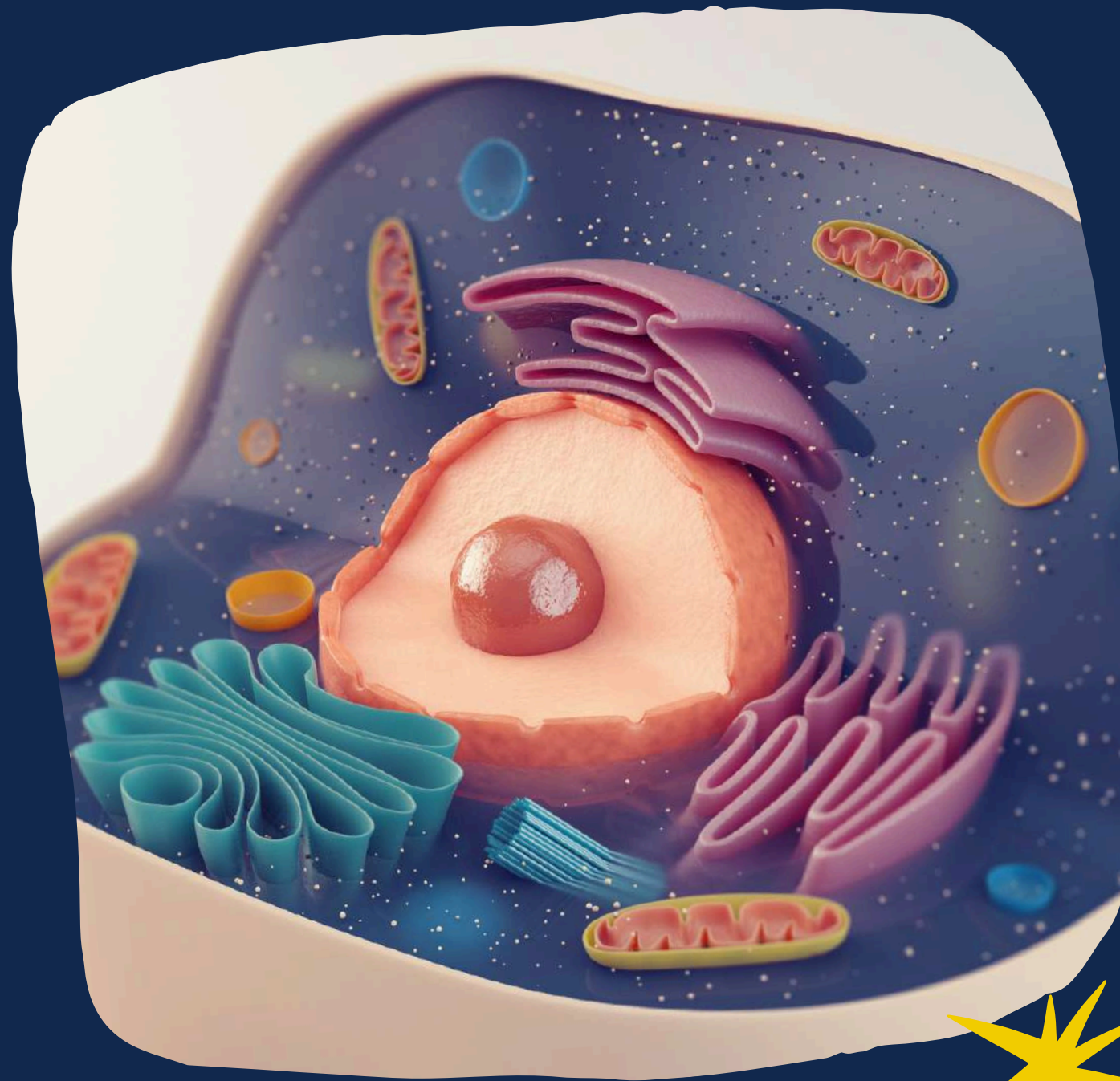




Content

Publication of a unique content. The usage of already published materials in your own content creation is obviously wrong. Nobody wants to watch or read the same thing twice. It means the loss of a part of your potential audience already in the beginning. That is why in the process of launching an account it is necessary to define your niche, audience and answer the question: what has not been told by the scientific social networks yet? Such instruments as Google Adwards, Yandex Wordstat and GoogleTrends can help with it.





Visual approach

Instagram always includes visual perception. It is necessary to prepare photo and video content of high quality to be successful in this sphere. Avoid fuzzy pictures, graphs and schemes which are clear only for experts





Be personal

You need to personalize your account to launch it. There is a window for introducing yourself or an organization which you represent in Instagram for this reason.

Do not forget to add an address of your official Internet platform while placing some short information there (only 180 symbols are available).

But this is not all. All your posts should include an authorship. It is easier for the users to perceive personalized content rather than depersonalized one.





Be on time

Timing of publication of your materials is quite important for the maximal audience coverage. Analyze which regions the greatest numbers of your subscribers live in, most likely, it is not only Rome but other 'scientific' cities such as New York or Paris, for instance. In any case, according to the experts, posting in the morning is more successful than in the evening.





Don't be boring

Conciseness and visualization of the given information. An optimal size of a post is 2200 symbols. Creating a post, talk to your audience in a plain language. Who are your subscribers: physicists or humanitarians, young scientists or successful experts? You should not copy a text from other sites or books, especially in a sphere of science. A text should be unique and clear to the wide range of users





Storytelling

You should maximize your ability of making your story interesting and compelling.
You need to charm you're audience moving them thanks to emotions.





Motivate your audience

It is preferable that your texts have a property of virality. Monitor how often your subscribers repost your publications and show them to other people. Motivate them!

Always answer to comment and interactions!



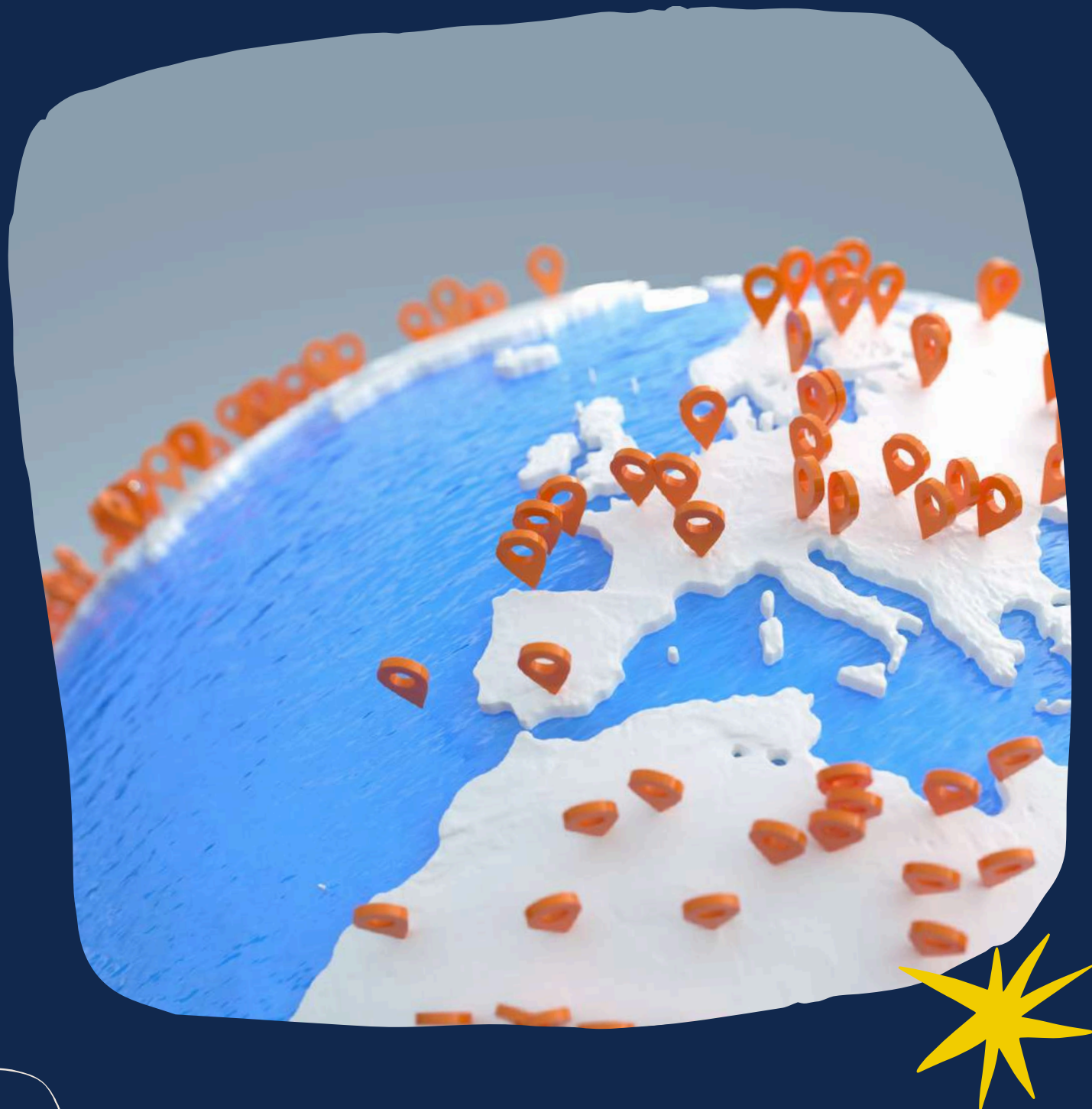


Work with

A work with hashtags (labels) which are the clue words whose writing starts with a pound sign (#) is quite important in page promotion in Instagram and even more important on TikTok.

Hashtags merge the messages from different users by topics and format them into separate and convenient for viewing groups.





Geolocalize

Another important step in making a post in Instagram is geolocation. You do not need to specify an address of your real time location.

Think of the most popular geolocation among scientists in the day of posting, which institutes, press-centers or governmental structures are the important events in the sphere of science and education starting in?





Verify your growth

How do I understand if I'm doing right or wrong?
There are several apps that can help understand how
your profile is effective.

**NOT JUST
ANALYTICS**

Let's try your account





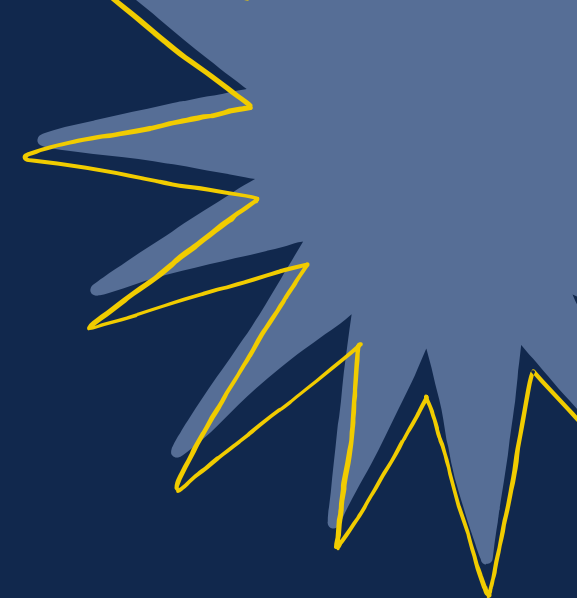
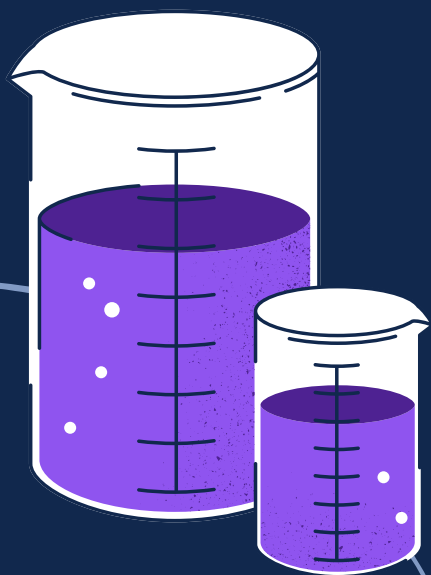
Reel

Instagram Reels offer a more immersive and entertaining way to watch and create video.

Video approach is right now the new way to increase and engage your public.

PODCAST:

A NEW WAY OF SCIENCE
POPULARIZATION

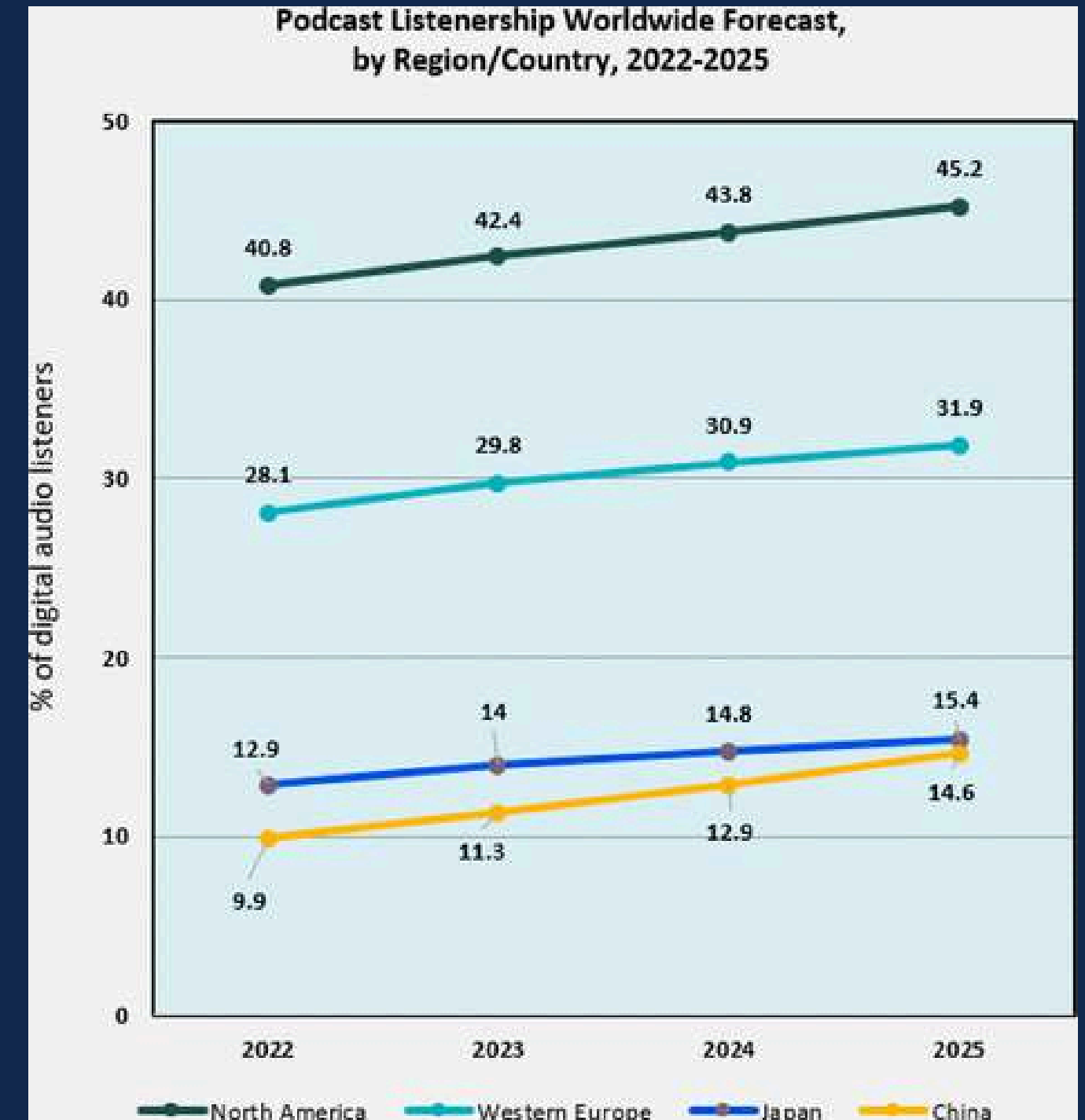


An incredible success

Scientific Podcast

Generation Z looks to novel media, including podcasts, to learn of the latest scientific innovations.
Suggestions and advantages:

- Narrative communication is preferable;
- Communication and outreach;
- Possibility to reach general and sectoral public;



Forecasted Internet users of any age who listen to a podcast via digital stream or direct download on any device at least once per month. Data sourced from eMarketer, August 2022.

The importance of carving out a
specific niche

PodCast

Some examples of science podcasts:

- Scientificast – Scientificast
- Oltre la Pelle Diary: Storie in ascolto – Novartis / VOIS
- Il gorilla ce l'ha piccolo – Vincenzo Venuto / Storielibere
- MIELO-Spieghi Podcast – Novartis / VOIS
- Fottuti geni – Massimo Temporelli / Storielibere
- Digitalia – Franco Solerio
- Il cantico dei quanti – Gabriella Greison
- Storie brutte sulla scienza – Barbascura X
- Le magnifiche della scienza – Gabriella Greison / Intesa Sanpaolo



Experience at Sant'Anna School

Promoting Research Project

“Mai dire maschi”, a podcast hosted by Federica Merenda, with interviews with writers, thinkers and other public figures about the many ways to perform masculinity while fighting against stereotypes, violence and discrimination.



Podcast

Mai dire maschi

Scuola Superiore Sant'Anna

My Podcast

Talking about water

A podcast can be supported or payed by a company. How to decide to accept a venture to invest in our work?

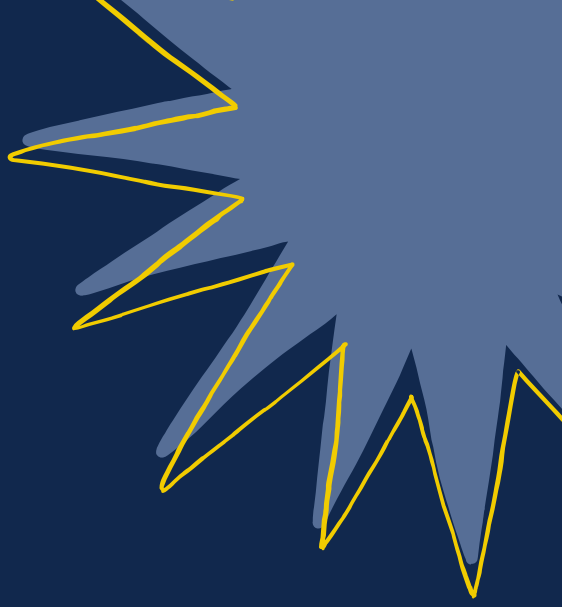
- Is there a product to be sponsored?
- Should science be free of investement?
- Who finds the sponsor?



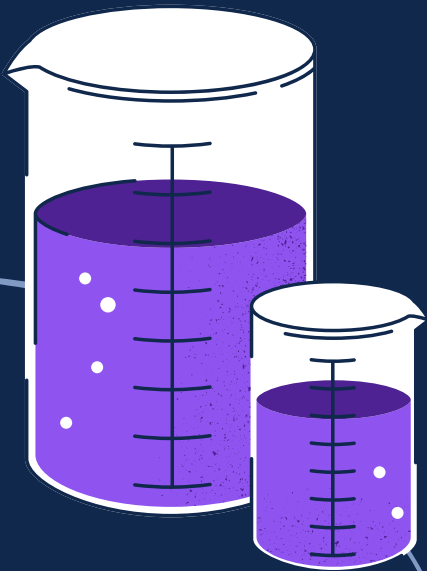
Podcast

Pillole d' Acqua

Dr Podcast Audio Factory Ltd



TIKTOK AS THE LAST FRONTIER OF EDUTAINMENT



General Scenario

TikTok is growing fast



As reported by CNBC, TikTok global monthly users increased from about 507 million in December 2019 to 689 million in July 2020, reaching 1 billion global monthly users in September 2021.



More than two thirds of active TikTokers are under the age of 30



For its users, TikTok has become a widely used source of information on popular culture as well as on other issues, and even news

General Scenario

TikTok is growing fast



Short meme videos, between 15 and 60 seconds, have become a defining feature of the platform.

While TikTok is mostly famous for memetic videos featuring lip-syncing, dance routines, and comedy skits, the platform has also experienced an increase in science-related content since 2019



Recently, TikTok has also collaborated with scientists to launch **#scienceathome** and **#learnonTikTok** to promote the platform's educational impacts

General Scenario

TikTok features



- Is not one way dissemination but it has a two way approach:infact it has a lot of ways of interactions: reposting, duet, the use of audio from a video;
- It has a vernacular creativity and languages;
- On TikTok, a platform dominated by Gen-Z creators, vernacular creativity is manifested by its users technical saviness (employing sonic and visual elements, editing, using filters) and cultural literacy in the youths' in-jokes and coded visual grammar;

General Scenario

What do I find on TikTok?



Philosophy
philosophy



Travel



Food



Gossip



Science



Politics

News

NEWS



Cosmetics

Cinema and
Tv Show

Luxury



Religion

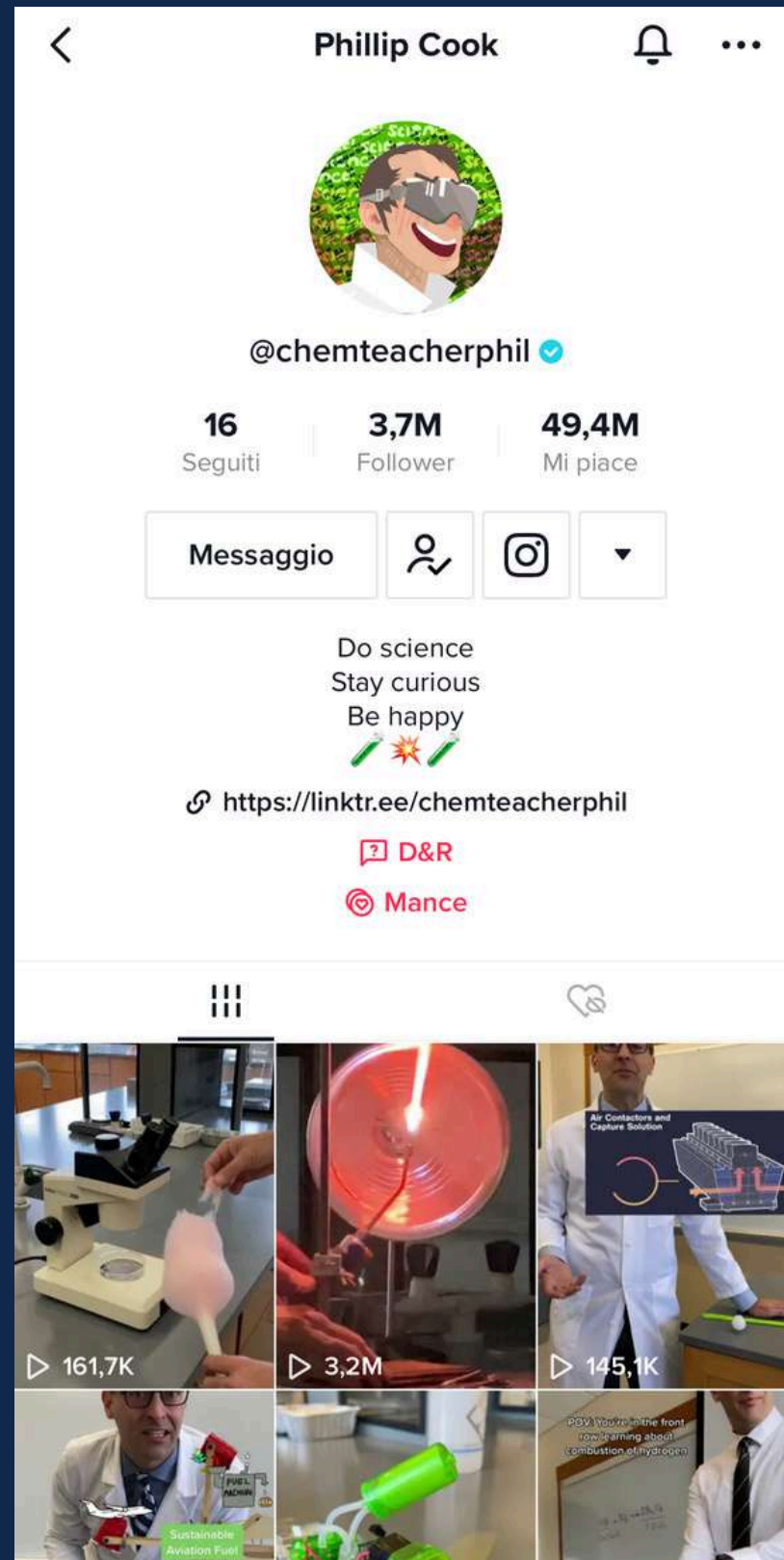
Book



Chemistry

Science in Making

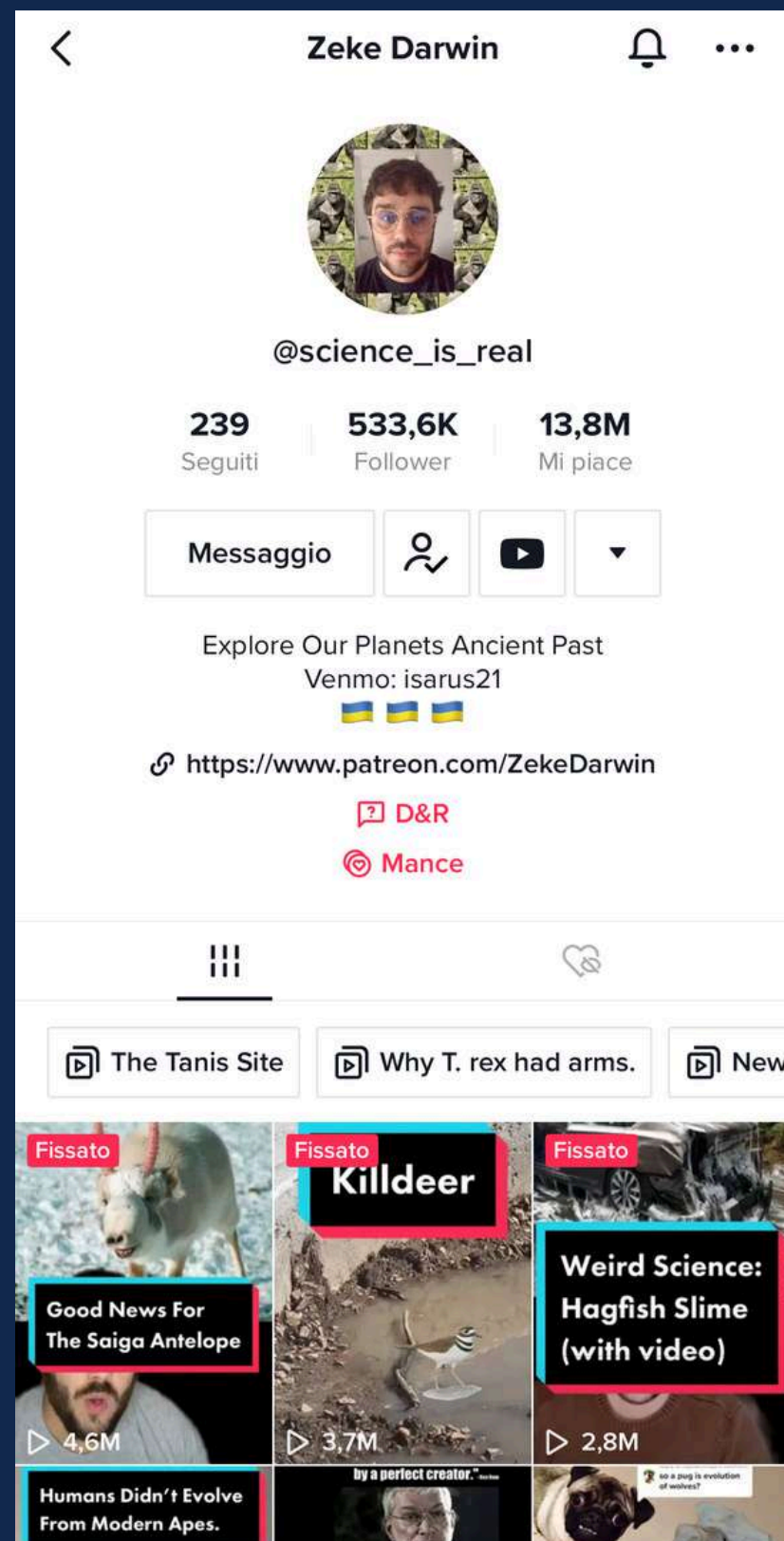
More than half of the science memes (59%) present “science in the making”—that is, visualizations and/or explanations of (steps of) the research process



Biology

Explanation

21% of the videos fall into the “explanation” category, which refers to content used to explain scientific concepts



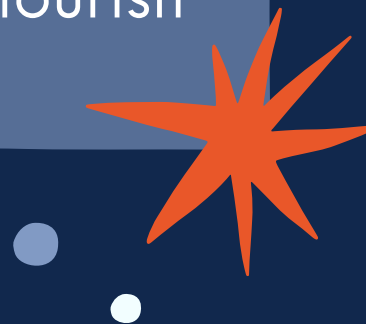
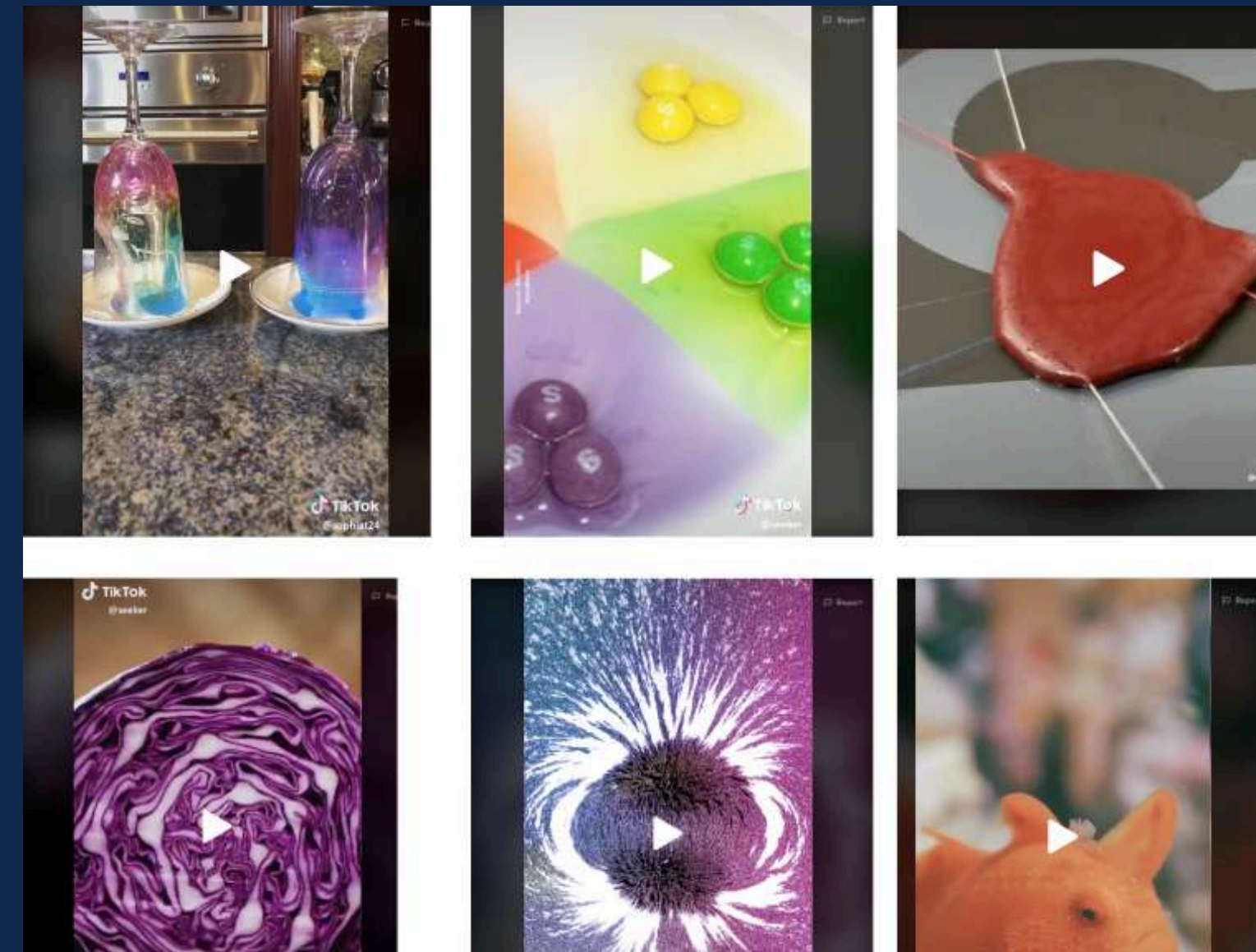
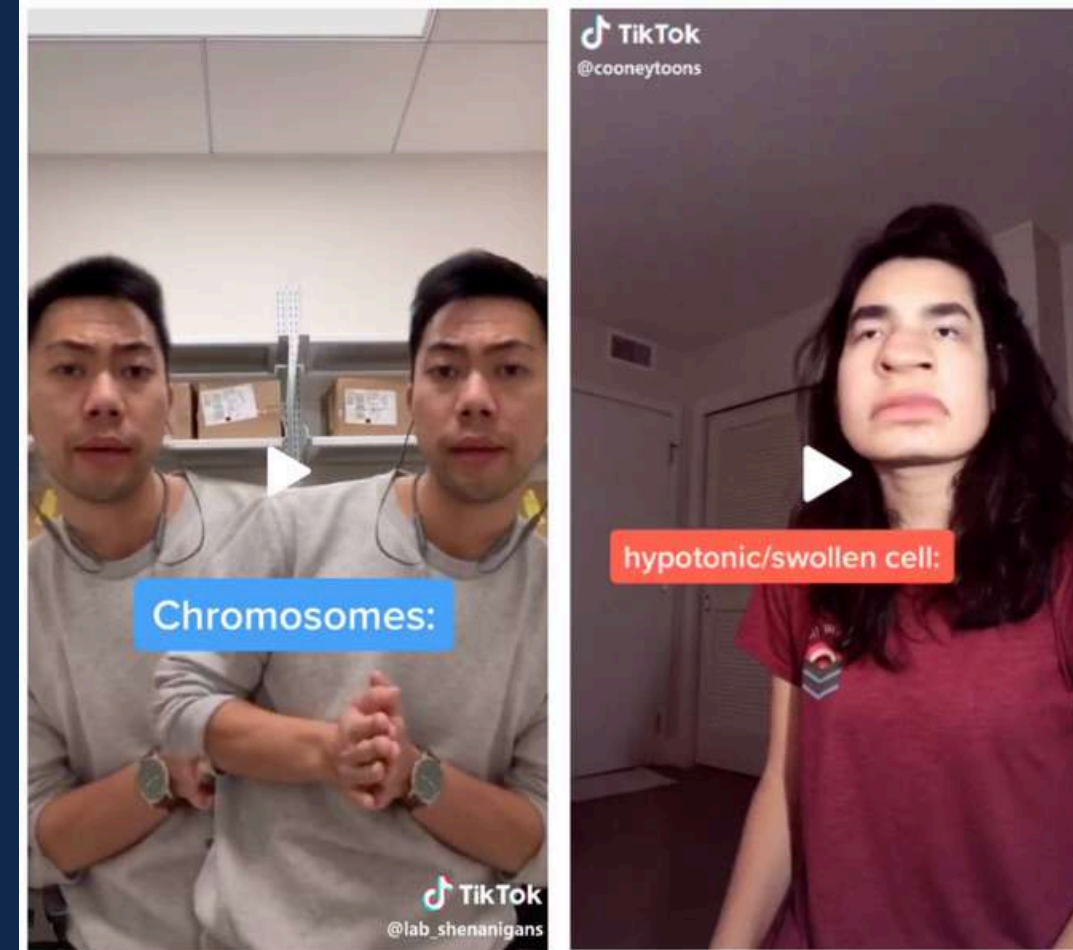
Important features

TikTok mood and consequences

- A lot of science video are ironic performances;
- The idea is entertain with science not only to have fun but also to promote good medical practices such as HPV vaccine;

Problem

- Pseudoscience and science trolls flourish on TikTok.



General Scenario

The Market Opportunity

Advertising

Commerce



Creative

Measurement

1. Influencer Marketing

A great way to leverage TikTok is by engaging with the influencer community. Because influencers have a solid understanding of the platform, they can transform stiff brand messages into fun and creative videos. This type of marketing is particularly effective at opening your content to a new audience and boosting brand awareness.

2. Original Content

Although fans of TikTok love original content, you don't need to spend hours coming up with the next viral trend. Often, the best performing TikToks are ones that replicate or recreate a current trend. Start by exploring the app, its trends, and where your brand can join the fun.

3. Paid Ads

TikTok ads are a relatively new addition to the platform. Powered by their own advertising platform, TikTok For Business, brands can run in-feed ads or create branded hashtags and video effects.

Although many of the first brands to join TikTok were large, well-known companies, it can still be helpful for small businesses to look at why brands of all sizes are joining the platform.

Fun and culture!

#Imparacontiktok

<

Giovanni Muciaccia

...

<

@giovannimuciaccia

✓

3

Seguiti

624,6K

Follower

5,0M

Mi piace

Segui

▼

Per info e collaborazioni:
info@247production.it
FATTO?! ✂️
D&R

☰

☰

D&R

Duetto #ioCreo

38,7K

1,2M

275,1K

Cappella, ca. 1885
Valentino

616

44,8K

21,3K

<

uffizisocial

...

<

@uffizigalleries

✓

69

Seguiti

88,2K

Follower

636,1K

Mi piace

Segui

▼

The Renaissance. Now.
Artemisia, Botticelli, Caravaggio
and much, much more!
www.uffizi.it
D&R

☰

☰

616

44,8K

21,3K

<

Benedetta Santini

...

<

@filosofia.e.caffeina

123

Seguiti

148,7K

Follower

1,5M

Mi piace

Messaggio

▼

La filosofia può cambiarti la vita.
filosofiaecaffeina@gmail.com

☰

☰

23,2K

102,9K

592,2K

216,6K

143,1K

107,9K

<

I love storytelling

...

<

@alessio.desanta

285

Seguiti

381,5K

Follower

15,5M

Mi piace

Messaggio

▼

Una volta qui era tutta campagna
alessio.desanta@gmail.com
IG: @alessio_de_santa
Www.ilovestorytelling.it/linktree
D&R

☰

☰

Curiosità

Internet

Cartoni animati

105,3K

379,4K

86,3K

L'Oscar a Jackie Chan

Rispondo in 20 secondi a tutte le domande PT2

Guardare film con la vostra crush

<

medmaki

...

<

@medmaki

63

Seguiti

585,9K

Follower

11,4M

Mi piace

Segui

▼

studentessa di Medicina
Educazione S3ssuale
Su IG parlo! SEGUIMI! ❤️

☰

☰

20,1K

373,6K

1,1M

VACCINO COVID: Dopo quanto si è protetti??

Sono INCINTA! Ma con protezioni, cos'è successo???

Come funziona il VIAGR4?

TikTok for Universities



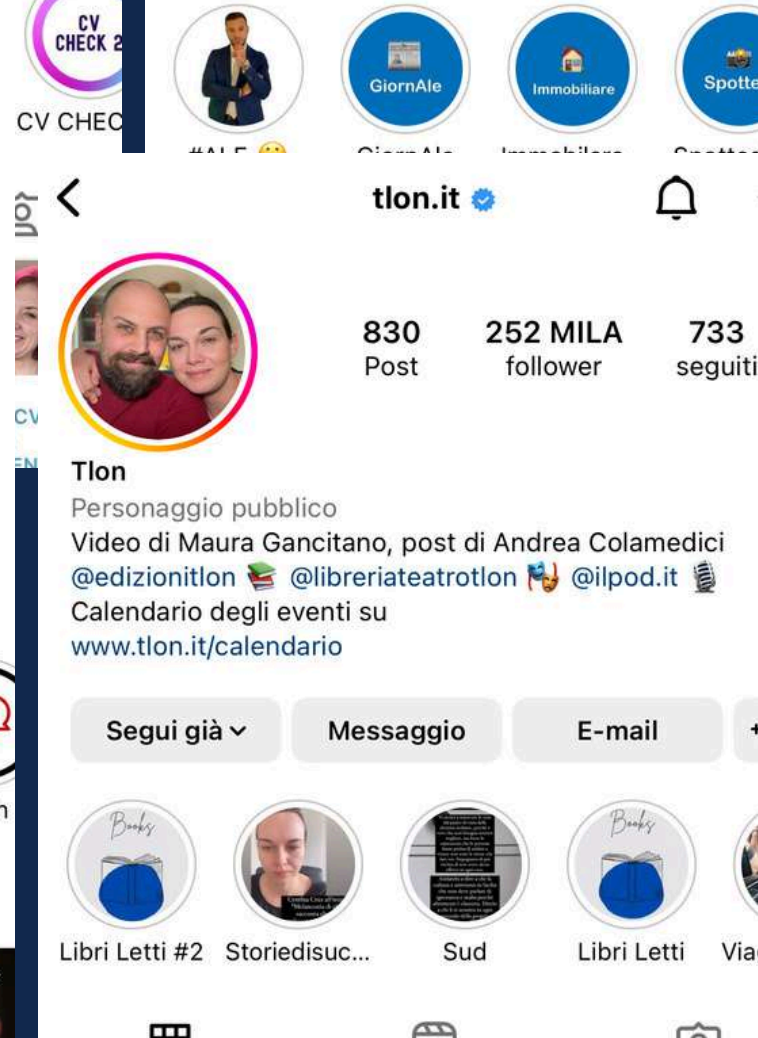
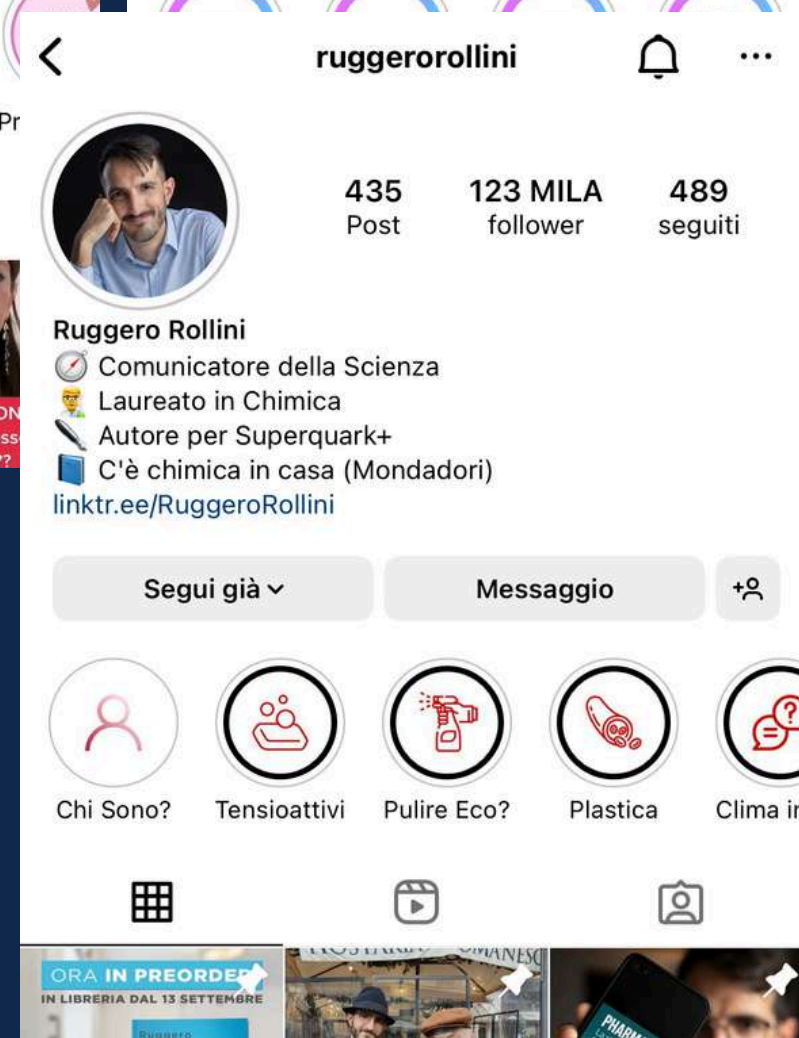
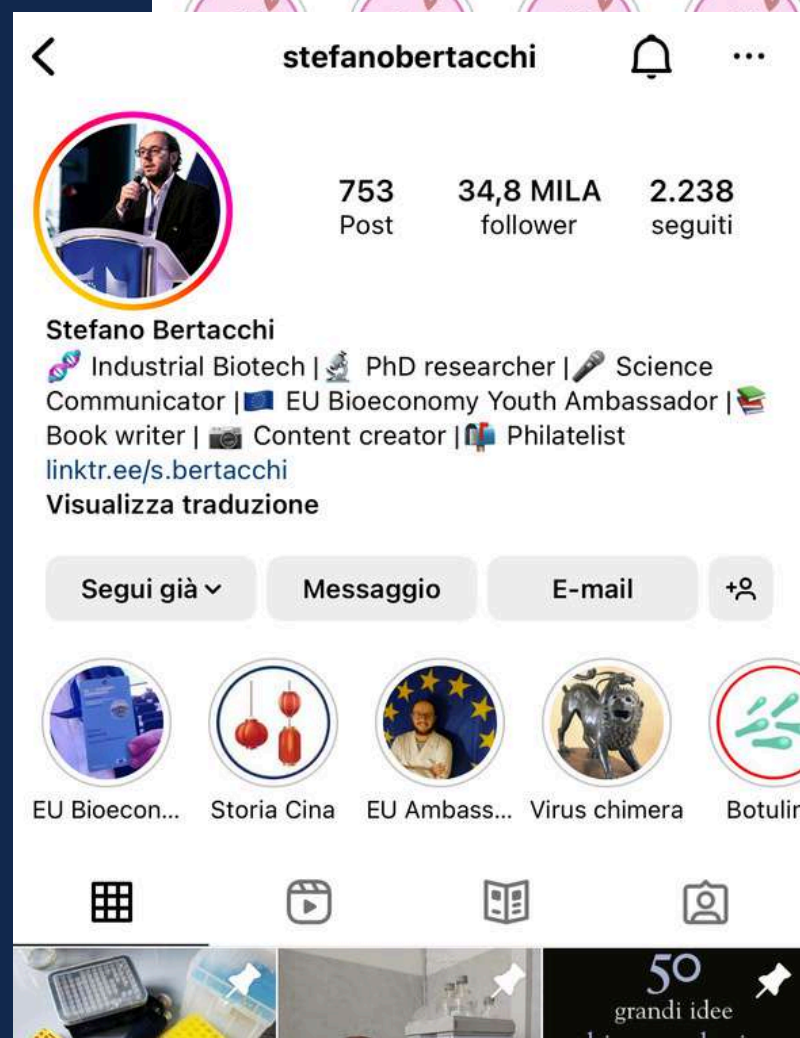
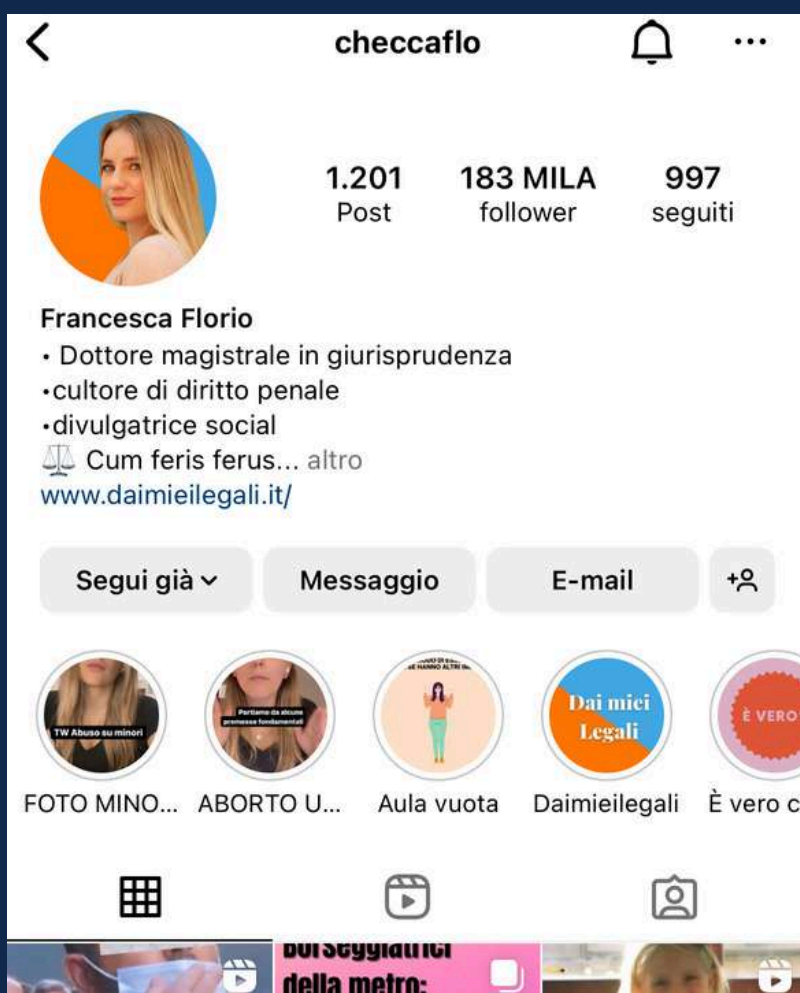
1. School orientation campaign;
2. Science popularization activities;



TikTok for Universities



1. School orientation campaign: 7 creators to disseminate the opportunity of studying at Sant'Anna



TikTok for Universities



2. Science popularization activities



LET'S PRACTICE!



Start your career as TikTokker

Let's make a video

- Define the goal and the Idea;
Let your self be inspired by foreing content creators.
- Produce a Script;
- Record;



Start your career as TikTok

Let's make a video



Should I be an actor?

Absolutely not!

Be yourself

You should simply believe in what you are saying! Let others feel your passion!



Start your career as TikTok

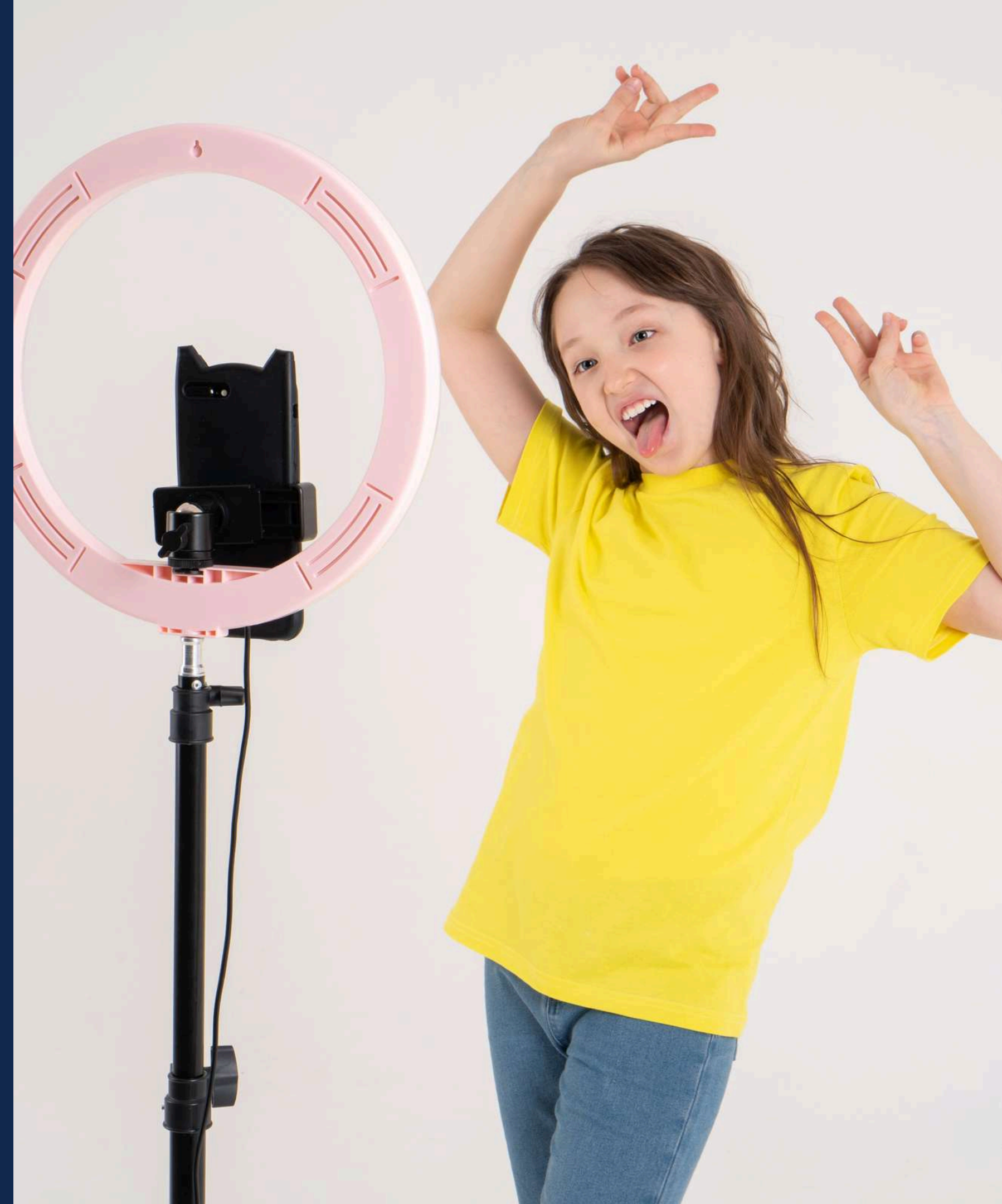
Let's make a video



- You need your phone;
- Download Inshot or Cap Cut (a video editing app);
- Find your style, write your video and record it with your camera;

If you want to be super professional:

- Get a microphone;
- Get a ring light;



Start your career as TikTok

Let's make a video



On tiktok the caption can be really short;
are really important: #foryou and in Italy
#perte are ashtags that can place your
content on a specific board.

Follow the platform trends and ashtags;

Answer to all the comment you receive to
get your community more and more
engaged;



Tips

How to be a good performer

- Break the ice between institutions and citizen, be simple;
- The context and the audience is important, imaging how your audience could react to your words;
- Ask your followers, create relationships;
- Try to overcome your echochamber with partenership with different profiles or institutions;
- Do not talk if you're not an expert;
- Grow with your comunity;



THANKS

