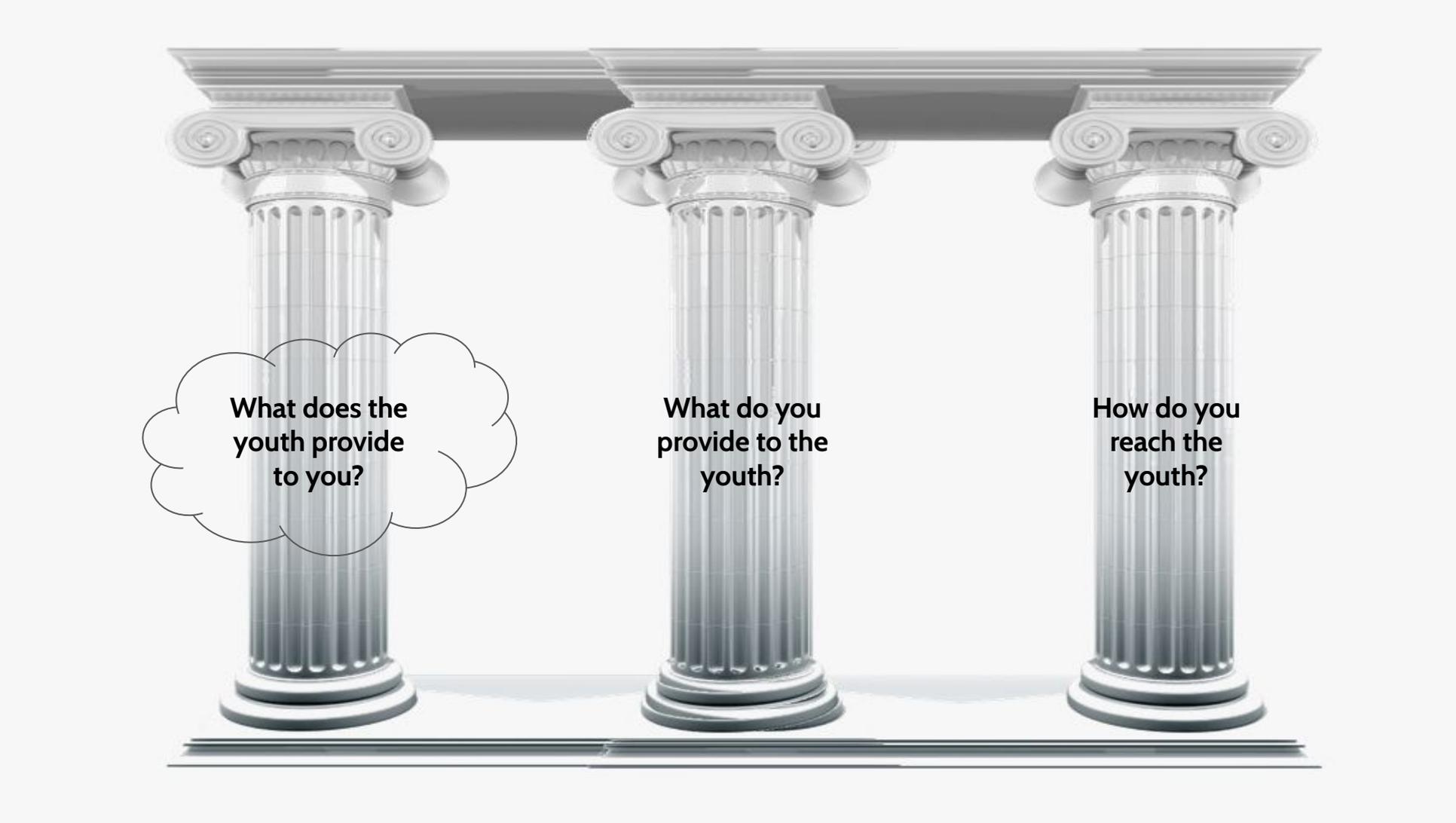
A dark blue world map is centered in the background of the top half of the slide. The map shows the outlines of continents and oceans.

{iaps}

International Association of Physics Students

What brings young members into international associations and unions?



**What does the
youth provide
to you?**

**What do you
provide to the
youth?**

**How do you
reach the
youth?**

Partners



INTERNATIONAL
GEOMAGNETISM



International Association
of Geomagnetism and



IUPAB
CONNECTING THE
WORLD OF BIOPHYSICS

INTERNATIONAL UNION
FOR PURE AND APPLIED
BIOPHYSICS

IFISO

INFORMAL FORUM OF INTERNATIONAL
STUDENT ORGANISATIONS



INTERNATIONAL ASSOCIATION OF GEOPHYSICS
AND METEOROLOGY
OF THE EARTH'S INTERIOR
EUROPEAN PHYSICAL
SOCIETY



UNIÓN DE FÍSICOS
DE PAÍSES DE LINGUA PORTUGUESA
INTERNATIONAL UNION OF
CRYSTALLOGRAPHY

ASOCIACIÓN IBEROAMERICANA DE
SOCIEDADES DE FÍSICA



INTERNATIONAL
ASTRONOMICAL UNION



International Particle
Physics Outreach Group

INTERNATIONAL PARTICLE PHYSICS
OUTREACH GROUP



AFRICAN SCHOOL OF FUNDAMENTAL
PHYSICS AND APPLICATIONS

**INTERNATIONAL UNION
OF
PURE AND APPLIED PHYSICS**



IAPS and IUPAP: A collaboration case-study

- Introduction to IUPAP
- The creation of AC5
- Initiatives and collaborations with IUPAP

IAPS and IUPAP: A collaboration case-study

- IUPAP is the only international physics union organized by the physics community
- IAPS is the largest international association representing the voice of physics students

What does IUPAP want from IAPS?



Engagement

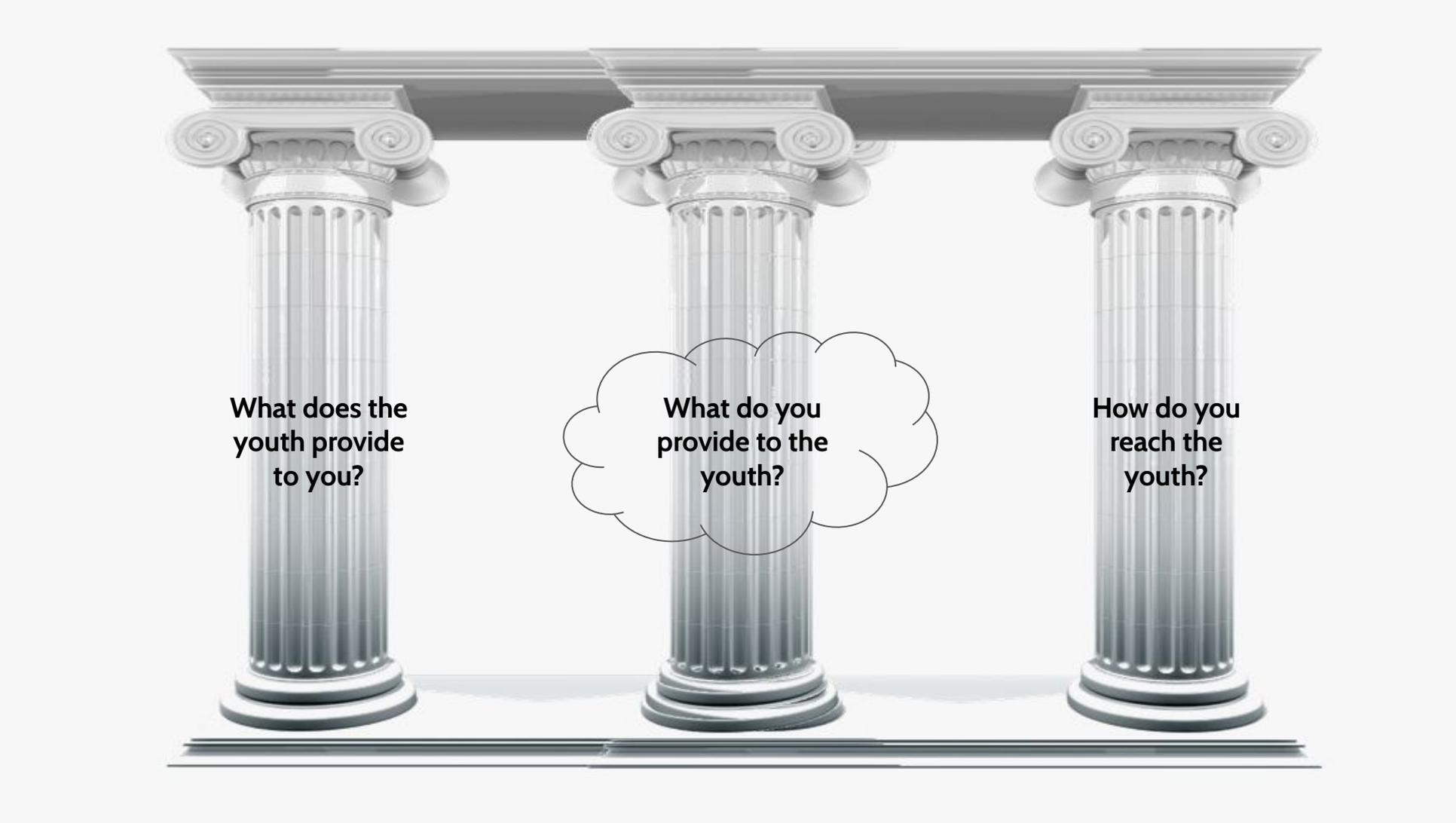
Expertise

Resources

Sustainability

Involvement of IAPS in IUPAP

- IAPS represents physics students to IUPAP through an affiliated commission
- IAPS participates in the working groups of “Physics and Industry” and “Women in Physics”
- IAPS is represented in the Commission of Education
- IAPS utilizes its resources of volunteers and reach supporting IUPAP initiatives



**What does the
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What does IAPS provide to its members?

The
International
Conference of
Physics
Students



ICPS: A unique conference, reimagined online

- Introduction to ICPS, purpose and itinerary, typical programme
- How ICPS supports young physics students to build important skills
- How it acts as a platform for professional development and soft skills in a friendly, multicultural environment
- COVID Crisis and ICPS online - how an organization adapts to use novel online platforms to engage young people

{iaps} The International Conference of Physics Students

- One international annual conference open to all physics students
- Consistent platform to exchange with others about science and life
- Creates opportunities and first conference experience for IAPS members

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAY 7

DAY 8

Breakfast

Delegate
Day

Guest
Lecture

City Tour

Guest
Lecture

City Tour

Guest
Lecture

City Tour

Optional
Trip

Lunch

Delegate
Day

Lab Tours

Trip to
BAGUIO

Poster
Presentation

Workshop

Workshop

Guest
Lecture

Student
Lecture

Student
Lecture

City Tour

X

Dinner

Welcome
Party

Nations
Evening

Quiet
Evening

Costume
Evening

Gabing
Pinoy

Party
Night

Farewell
Evening

X

Guest lecture:

- Improvement of professional knowledge
- Adjustment to new styles of presentation

Lab tours:

- Visual experience of experiment and setup
- Close communication with researchers

Student lectures /poster sessions:

- Presentation skills
- Introduction to critical feedback

Workshops:

- Development of soft skills
- Active practice

A platform for professional development and soft skills in a friendly, multicultural environment

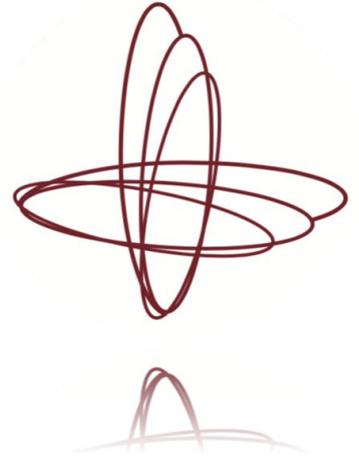
ICPS 2019 in Cologne



ICPS 2021: An online conference

We need to adjust our expectations!

- 24h programme on 4 days to create timezone independence
- Usage of Gathertown as a unique platform that allows poster presentations, talks, and networking opportunities
- Youtube streaming for passive participation
- Discord server as an around the clock moderated communication platform
- Online competitions and treasure hunts to keep participants engaged
- Gaming nights and “video” excursions to replace well-known concepts



ICPS 2021: An online conference

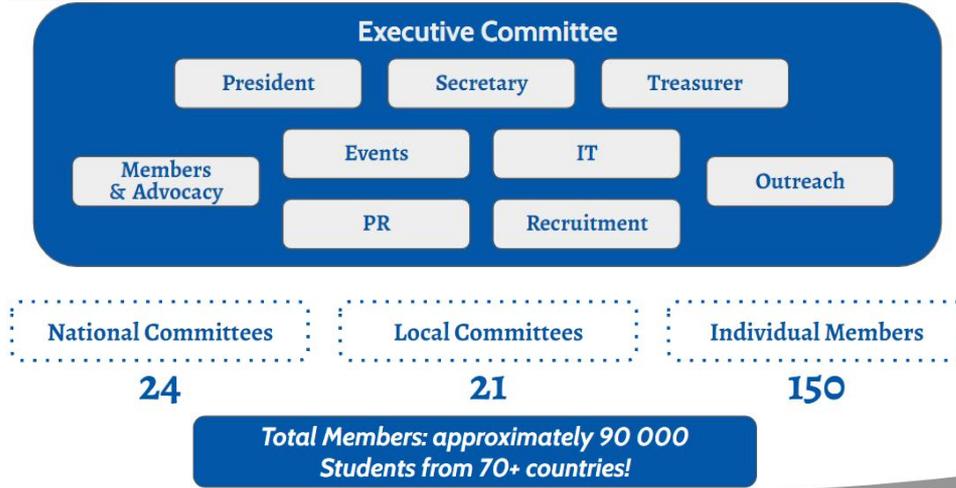
- *Insert pictures and insights from ICPS 2021 report*

A Question for the Audience

Who of you have organized an online conference already?

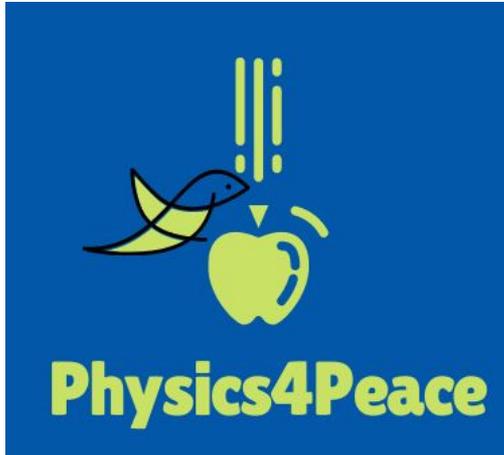
Who of you have used one of the tools we used to engage our members?

An entirely student-run organization



► The first IAPS AGM (Prague, 1988). 1st left: Tamás Fülöp.
 At the table (left to right): Andrzej Bobyk (leader of the Polish NC); Jan de Boer (leader of the Dutch NC); Mikko Vanttinen (leader of the Finnish NC) Standing: Patroklosz Budai. Péter Ván is 4th from left.

Advocacy and support for young people



WORLD MENTAL HEALTH DAY

A discussion on mental health in physics with

FullCircle

Friday 8th
14:00 UTC
link in bio

An illustration of three people (two women and one man) sitting around a table, engaged in a discussion. The man is wearing glasses and has a speech bubble above him. The women are also wearing glasses. The background is a light blue gradient.

This will be a safe space for students to talk about their mental health: the struggles of studying during a pandemic, impostor syndrome, toxic work environments in our PhDs and so much more

The logo for the International Association of Physics Students (iaps), consisting of the lowercase letters "iaps" in a white, sans-serif font inside a white-bordered box.

Mental health in Academia Prevalence, symptoms, causes and treatments

Lucia Rotheray

Dragonfly Mental Health Ambassador

December 9, 3 PM CET

What is this about?

Despite increased awareness in recent years mental health is still a taboo issue within vast parts of the scientific community. In this webinar we will learn about the prevalence of mental health problems within the academic community, learn to recognize related symptoms, understand the main causes and have a look at the available treatments.

About Dragonfly Mental Health

Dragonfly Mental Health is a non-profit organization run by volunteers that was created to improve mental health and to increase the awareness of mental health issues within the academic community.



Outreach and education for young students



Croatia, 2021



Around November 10 each year



Kathmandu, 2019



Khumasi, 2018



Noida, 2019



Bari, 2018



Noida, 2021 - "online school day"



(Our member explaining rainbow drop experiment.)

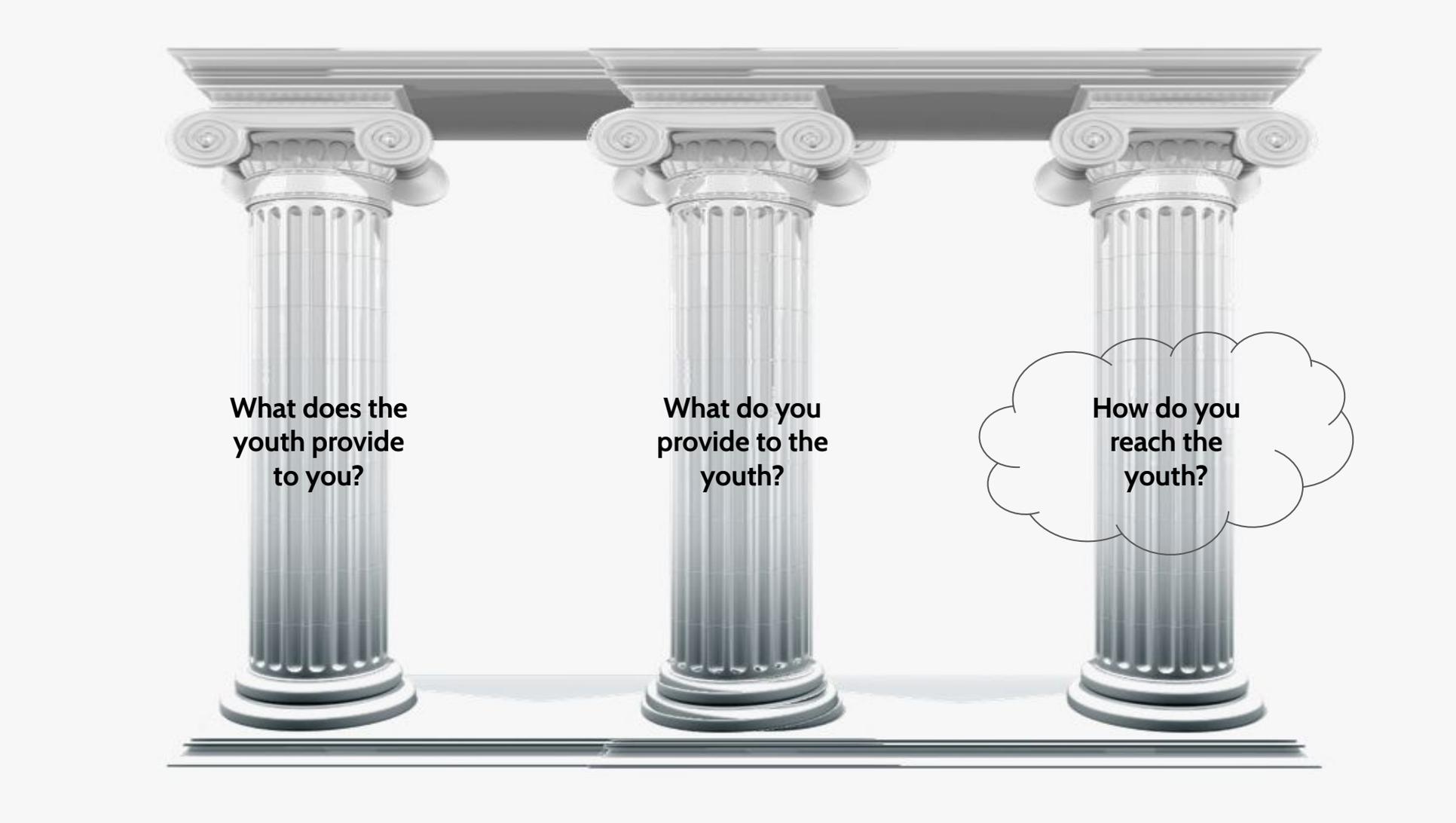


Kathmandu, 2021 - "grassroots school day"

A Question for the Audience

How does your organization work on outreach?

How do you involve young people in your organization's outreach efforts?



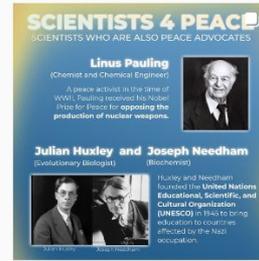
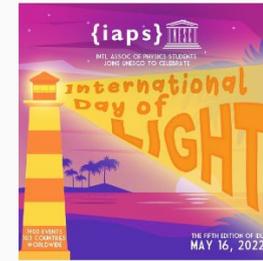
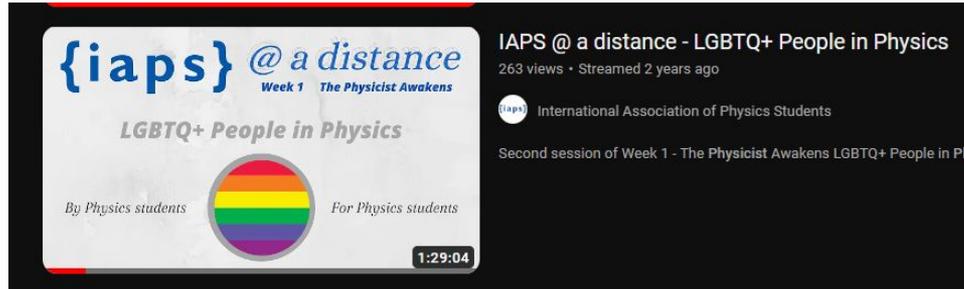
**What does the
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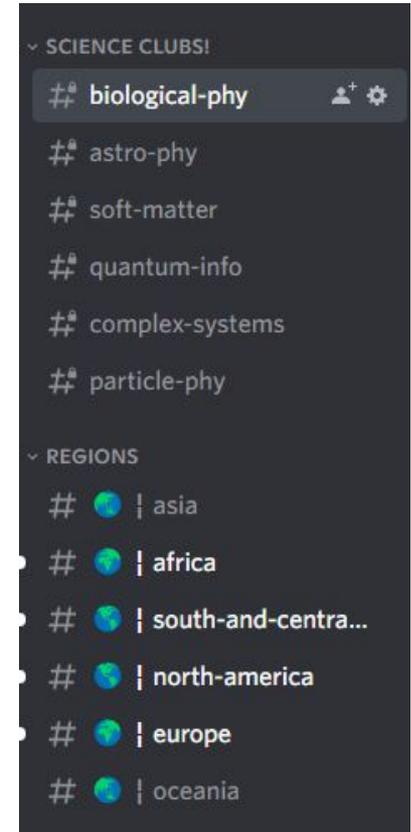
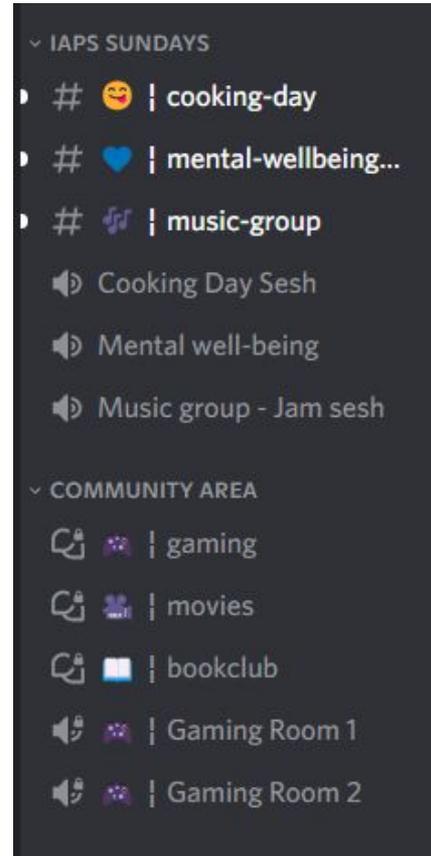
How IAPS engages with students: PR

- Facebook and LinkedIn for event updates
- Youtube for event livestreams and videos
- IAPS Newsletter with science and event updates
- Instagram for updates, multimedia infographics and resharing



An internal members-only Discord server for

- Cooking Day
- Mental Wellbeing Chat
- Music Group
- Gaming and community engagement
- Networking based on interests and hobbies
- Opportunities for physics students



PR Campaigns

1. Post IAPS's memories on FB

2. Post IAPS's memories on Insta

...

3. Post ICPS's memories

4. Post PLANCKS's memories

5. Post a funny video of IAPS event

35
WAYS TO CELEBRATE
IAPS anniversary

{iaps}

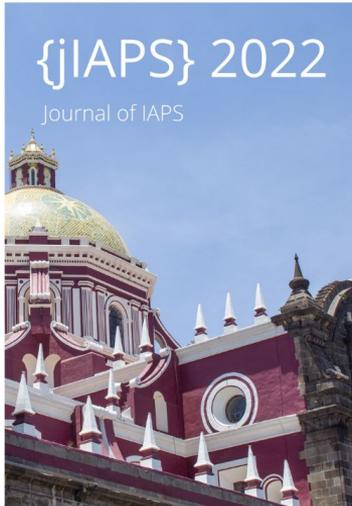
THE PHYSICIST CHALLENGE

SIMPLE SUNDAY	MEME MONDAY	TUESDAY THOUGHTS	WEDNESDAY WOES	TAG THURSDAY	FAV FRIDAY	SELF CARE SATURDAY
1 INTRODUCE YOURSELF	2 PHYSICS MEME	3 WHY PHYSICS	4 THE 'I DO PHYSICS' REACTION	5 TAG ROLE MODEL(S)	6 STUDY SNACK	7 LOOK AT THE STARS
8 FUN PHYSICS FACT	9 MEME YOURSELF	10 FAV PHYSICS MEMORY	11 WORST STEREOTYPE	12 YOUR NOBEL PRIZE NOM	13 PLAYLIST/PODCAST	14 HOBBY
15 DIY QUOTE	16 MEME YOUR RESEARCH	17 WHY I LIKE BEING A PHYSICIST	18 EXPECTATION VS REALITY	19 A PHYSICS ACCOUNT	20 PHYSICS DEMO	21 NATURE
22 CURRENT READ	23 WORST PHYSICS MEME	24 FUTURE SELF	25 IMPOSTER SYNDROME	26 NEW FRIENDS	27 ACHIEVEMENT	28 WORKOUT /WALK
29 ALTERNATE REALITY YOU	30 MEME REFLECTION	#ThePhysicistChallenge				

{iaps}

jIAPS: our annual student-run journal

It's here!



Grab your copy!

(Link in description)



Did my heart love till now? Forswear it, sight!
For I ne'er saw true beauty till this night.

JAIAPS ARTICLE CONTEST WINNER

The dynamics of the love affair

Mihail Miceski

FRANK DICKSEE, 1884

What is love? From the earliest of times, wise philosophers have tried to answer this question. Each person, according to their views and opinions, will have a different picture, each stitched from the next. Therefore, it is difficult to find an objective answer to this question.

If we cannot define love, can we find a way to anticipate, describe, or find a connection between feelings and the way people behave? Of course, there are similarities in some people in terms of how they react to love, their feelings toward a person, or the feelings of that person toward them. Here, we will describe a mathematical model to demonstrate a love affair between two love candidates. The model we present is considerably simpler compared to reality, but some interesting results are obtained.

Without a doubt, in the history of literature, Romeo and Juliet are the most famous duo; their tragic history is imprinted on our minds. And yet, we will not focus on the tragic death of young lovers, but on how they loved.

This can be portrayed by a mathematical model, consisting of a system of linear equations that describe love or hate between two lovers whose love styles we do not know. We call them Romeo (R) and Juliet (J). The system of differential equations looks like this:

$$\frac{dR}{dt} = aR + bJ \quad \frac{dJ}{dt} = cR + dJ$$

These two differential equations describe how Romeo's love of Juliet (R) and Juliet's love for Romeo (J) change over time. This is valid because we assume that the love of Romeo/Juliet depends only on his/her own feelings and feelings of the partner in the above equations. R is a time variable that characterizes the feelings of Romeo to Juliet (and vice versa), and for positive R and J these values signify love, and if they are negative, denote the hatred of one lover towards the other. Consequently, love and hatred are characteristics

that intertwine in a love affair. In the equations, 'a' denotes how much Romeo is encouraged by his feelings for Juliet to take on something related to his feelings, while 'b' signifies how he is encouraged by Juliet's feelings to approach her. Accordingly, the 'c' parameter signifies how Juliet is encouraged by Romeo's feelings towards her, and 'd' denotes how much she is encouraged by her feelings for Romeo.

Of these four parameters, four different romantic styles arise. Let's take a closer look at the Romeo style depending on the parameters 'a' and 'b'. The same discussion applies to Juliet, but depends on the parameters 'c' and 'd'.

Womanizer (a>0, b=0)
Romeo is encouraged by his feelings for Juliet and Juliet's positive feelings toward him encourage him to approach her.

Complacent (a=0, b<0)
Romeo is moved by his feelings for Julia, but is discouraged by her negative feelings toward him.

Cautious lover (a<0, b=0)
Romeo feels at a loss, but Julia's feelings encourage him.

Hermist (a<0, b=0)
Romeo reacts negatively to both his and Juliet's feelings.

Let's now consider some specific cases with

certain parameters. Romeo is in love with Juliet, and she moves away from him when he approaches her. This situation discourages Romeo so that he runs away from Juliet. But then Juliet begins to fall in love with Romeo, so that again he falls for her, encouraged by her affection. We can easily predict that this cycle will be repeated to infinity.

Such a configuration corresponds to the parameters a=0, b=0, because the love of one depends only on the love of the other. If b=0 and c=0, the dynamics of their romantic behavior can be shown graphically by numerically integrating the differential equation system. If a=0, b=0.8, c=-1.2, and d=0 we get something like this:

Another characteristic case occurs when the lovers have opposite characteristics in relation to the romantic style. This means that c=b and d=-a.

$$\frac{dR}{dt} = aR + bJ \quad \frac{dJ}{dt} = -aR - bJ$$

Such a case can end in all combinations of love-hate or in an endless cycle. We realize that the resultant behavior depends largely on the characters of the people entering such relationships, which is described by initially selected parameters. I hope that this article will spark the reader's interest in nonlinear dynamic systems.

[1] Strogatz, S. H. (1994). Nonlinear dynamics and chaos: With applications to physics, biology, chemistry, and engineering.
 [2] Sprinz, J. C. (2004). Dynamical models of love. *Journal of Nonlinear Dynamics, Psychology and Life Sciences*.
 [3] Shakespeare, W. (1597). Romeo and Juliet.

Good practices to involve the youth

- Create a friendly, supporting environment and youth friendly culture in the organization
- Events and outreach that give hands-on experiences to young students
- Use of PR and online tools to build engagement and community

We would love to hear from you!

- Introduce yourself, your organization
- How do you involve the youth in your organization? What are the challenges you face in doing so?
- What has worked well with your organization in the past that you can share with us?



www.iaps.info



ec@iaps.info



[/iapsfb](https://www.facebook.com/iapsfb)



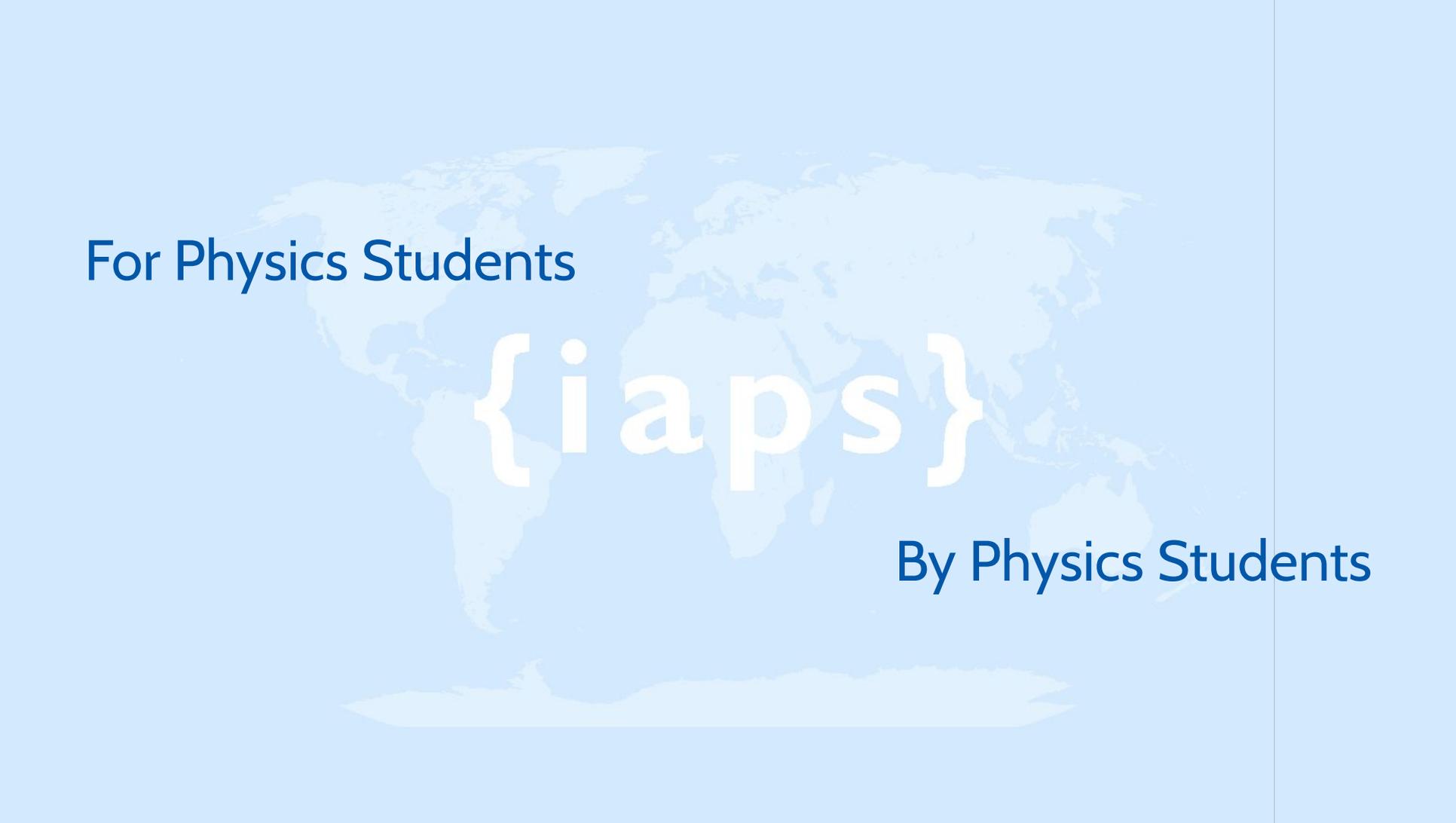
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[International Association
of Physics Students](https://www.linkedin.com/company/international-association-of-physics-students)



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For Physics Students

{iaps}

By Physics Students