Topic Area: Education & Awareness

TIME4CS Training Program 2

TIME4CS

SUPPORTING SUSTAINABLE INSTITUTIONAL CHANGES TO PROMOTE CITIZEN SCIENCE IN SCIENCE AND TECHNOLOGY

TIME4CS Topic Area: Education & Awareness

Training Program 2

Training Module 2.1: Training and awareness-raising in RPOs

- Training Module 2.1.1: Strategies for training and raising awareness among researchers, volunteers, and other stakeholders
- Training Module 2.1.2: Setting up training sessions for researchers and others
- Training Module 2.1.3: Interactive session: Design your own training program

Training Module 2.2: Engaging schools and communities

- Training Module 2.2.1: Involving schools in citizen science engagement
- Training Module 2.2.2: Effective communication and engagement
- Training Module 2.2.3: Interactive session: Crafting narratives and communication strategies in citizen science

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TIME4CS Educational and awareness-building efforts in the field of citizen science

Training Program 2: Learning objectives

- Gain a deep understanding of the importance of citizen science training and awareness in promoting responsible and inclusive research and innovation practices

- Learn strategies for conducting impactful training sessions and awareness-raising activities tailored to researchers, volunteers, and other stakeholders within Research Performing Organizations (RPOs)

- Develop the skills to conduct audience assessments and stakeholder analyses to tailor training experiences for specific groups and contexts

- Explore the train-the-trainer concept and its application in disseminating citizen science knowledge within RPOs

- Apply the fundamental components of the logic model to design training sessions that align with objectives, target audiences, and chosen training methods

- Understand the challenges and opportunities of involving school children and communities in citizen science projects

- Craft purposeful communication and engagement strategies tailored to larger and diverse audiences, advancing citizen science projects and building enduring connections with stakeholders beyond RPOs

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Training and awareness-raising in RPOs

Training module 2.1

Strategies for training and raising awareness among researchers, volunteers, and other stakeholders

Training Module 2.1.1

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INSTITUTIONAL CHANGES
TO PROMOTE CITIZEN SCIENCE IN
SCIENCE AND TECHNOLOGY

TIME4CS Training and Awareness-raising

Inreach vs. outreach

Awareness-raising and training - *capacity building* – inside RPOs

- **Target groups** are usually research staff, administration & support staff, students
- **Formats** are often courses, seminars, lectures and workshops either online or in-person and usually conducted in a semi-formal way

Awareness-raising and training - *capacity building* – outside RPOs

- **Target groups** are usually members of the public: individuals or groups of people who are often not scientists
- **Formats** can take many forms like open days, stands at events and festivals, debates, talks, hands-on learning experiences and activity workshops. The format is usually informal and in-person

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TIME4CS Academic courses: for Master students

TIME4CS Academic courses: also open to the public

UCL Home   Prospective students   Current students   Staff   Give

Search UCL websites, degrees, short courses,   Go

SHORT COURSES

UCL

Home   Search short courses   About short courses at UCL   Digital Certificates

UCL Home » Short courses » Citizen Science and Scientific Crowdsourcing: an Introduction

Onsite for UCL students (paid)

Online for 'the public' (free)

Citizen Science and Scientific Crowdsourcing: an Introduction

30 hours   No start date. Work at your own pace

Overview

This online course will **introduce you to the theory and practice of citizen science and scientific crowdsourcing**.

Citizen science is the participation of members of the public in scientific projects, including the engaging a large group of people in the creation of new scientific knowledge (crowdsourcing).

You'll **explore the history, theoretical foundations, and practical aspects of designing and running citizen science projects**.

By the end of the course, you'll have a good understanding of citizen science and be familiar with the academic literature in this area.

Cost: Free

Book a place

Available online   Book now

Length and time commitment

⏱ Time commitment: 30 hours

TIME4CS EU-citizen.science

TIME4CS EU-citizen.science

TIME4CS EU-citizen.science MOOC example

1. WELCOME AND INTRODUCTION (5 MINUTES)

- Welcome to Storytelling for citizen science
- Course overview: What will you learn?
- There are several paths...

2. STORYTELLING FOR CITIZEN SCIENCE (30 MINUTES)

- Once upon a time...us and stories
- Meet writer Fernanda Krahn Uribe: Gathering around the ? like in the ancient times
- Why storytelling?
- The use of stories in science communication and participatory research
- Meet Dr. Erinma Ochu: Relate to your audience
- Stories came before science

3. CREATIVE WRITING TO GET YOU STARTED (30 MINUTES)

- Training our creative muscles
- Meet writer and illustrator Johanna Lohrengel, Hannuka: The power of stories to empower
- You, the storyteller
- Watch a short video with little elevens!
- Now, let's write this "little elevens" poem
- Think about the needs of your audiences
- The 5 whys?

Storytelling for citizen science

Dashboard Courses Generic citizen science courses Storytelling

COURSE DESCRIPTION

This is a free two and a half hour course that provides an introduction to storytelling and gives practical tools to shape narratives to communicate about and engage with citizen science. Citizen science is a form of active public engagement in science.

Badges
Competencies
Grades
Dashboard
Site home
Calendar
My courses
Private files
Course sections

TIME4CS Training and Awareness-raising: Outreach

Why should people engage with you or your project?

CS volunteers' top motivations:

- Contributing to science & Interest in / concern about project topic (Values)

- **Learning something new** (Understanding)← *this is why your focus on volunteer training is important!*

Training volunteers

- Know your volunteers to know which formats will work for them

- Lots of different formats! Good to offer more than one

- Volunteers can train/guide other volunteers (also an important motivation for some: to use their current skills to help others and thereby also the project)
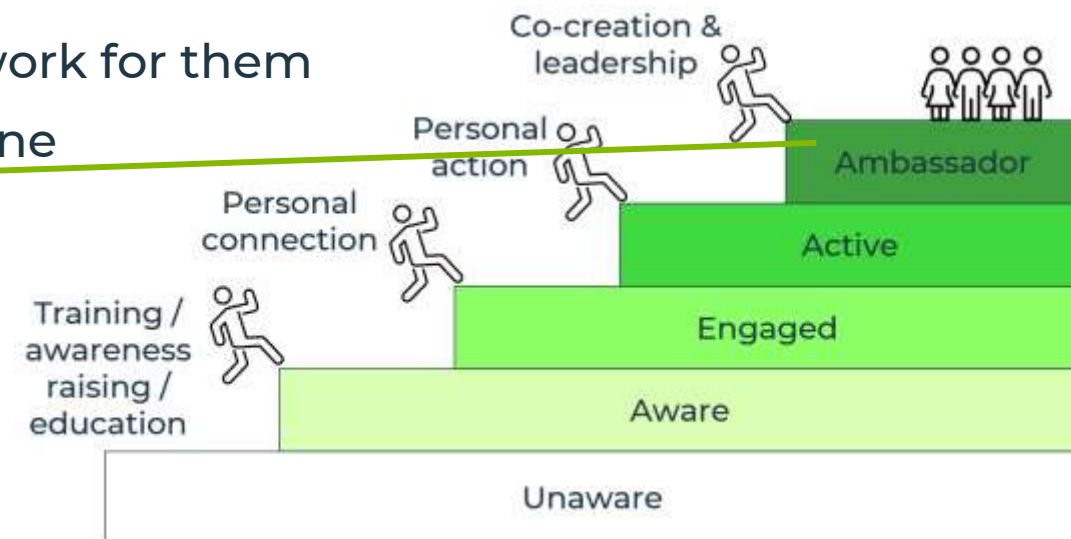
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TIME4CS Awareness-raising

Open Citizens' Day

Frits Ahlefeldt, Hiking.org

The purpose of the Open Citizens' Day is for the public to actively participate in citizen science projects, trying out different types of projects, and be able to meet and talk to the researchers behind the projects. Citizen science projects from Denmark, and beyond, within any scientific discipline are invited to participate, showcase their projects, and directly engage the visiting public in their citizen science projects.

There will be some set activities at certain times throughout the day, organised by the participating citizen science projects, e.g., water sampling as part of the 'Søer i Fritiden' citizen science project; and talks by scientists leading citizen science projects.

The Open Citizen's Day will take place on Sunday 24th of April 2022 at the Steno Museum, part of the Science Museums, and adjacent outdoor areas at the Aarhus University campus in Aarhus. Participating citizen science projects will be placed either among existing exhibitions where themes overlap, in the foyer, or in outdoor areas as relevant. The Open Citizens' Day is part of and supported by the Danish Science Festival and leads up to the Engaging Citizen Science Conference 2022 the following two days.

Submit your project to the Open Citizens' Day ❯

Partners

FORSK NINGENS DØGN

SCIENCE MUSEERNE
AARHUS UNIVERSITET

Citizen Science Netværket
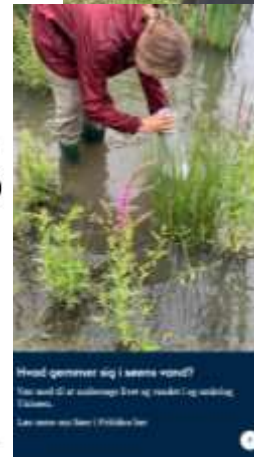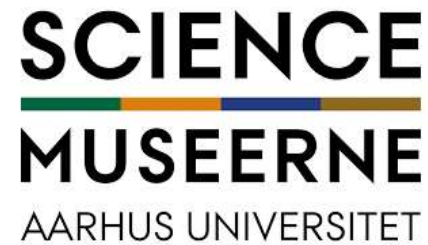
TIME4CS Training and Awareness-raising

Inreach (staff & students)

- Curriculum-based, e.g. courses

- Capacity-building, e.g. seminars and workshops

- Informal mutual learning, e.g. peer-groups, mailing lists, Working Groups, e.g. European Citizen Science Association working groups

Outreach ('the public')

Awareness-raising (/recruiting)

- Open days, festivals, science cafés

- Competitions & challenges

Training of volunteers (/recruit & retain)

- Hands-on activities

- More practical than theoretical

- Think about the social aspects

- Make it fun!

Setting up training sessions for researchers and others

Training Module 2.1.2

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TO PROMOTE CITIZEN SCIENCE IN
SCIENCE AND TECHNOLOGY

TIME4CS Setting up training for staff in RPOs

Things to consider

Audiences and stakeholders

- Who and when could or should someone be interested or impacted by your training, or have an influence on your planned training?

Content differs based on your training target audience

- Researchers, other staff, or students

The Train-the-Trainer concept

- Enabling more people to conduct trainings will enable more people to be trained

TIME4CS Core Team, Audience, Stakeholders for training

Core Team (you)

Audience
Training Participants (within (staff/students) or outside (volunteers) RPO)

Stakeholders
Interest, influence, impact, involvement

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TIME4CS Core Team, Audience, Stakeholders for training

Core Team (you)

Audience
Training Participants (within (staff/ students) or outside (volunteers) RPO)
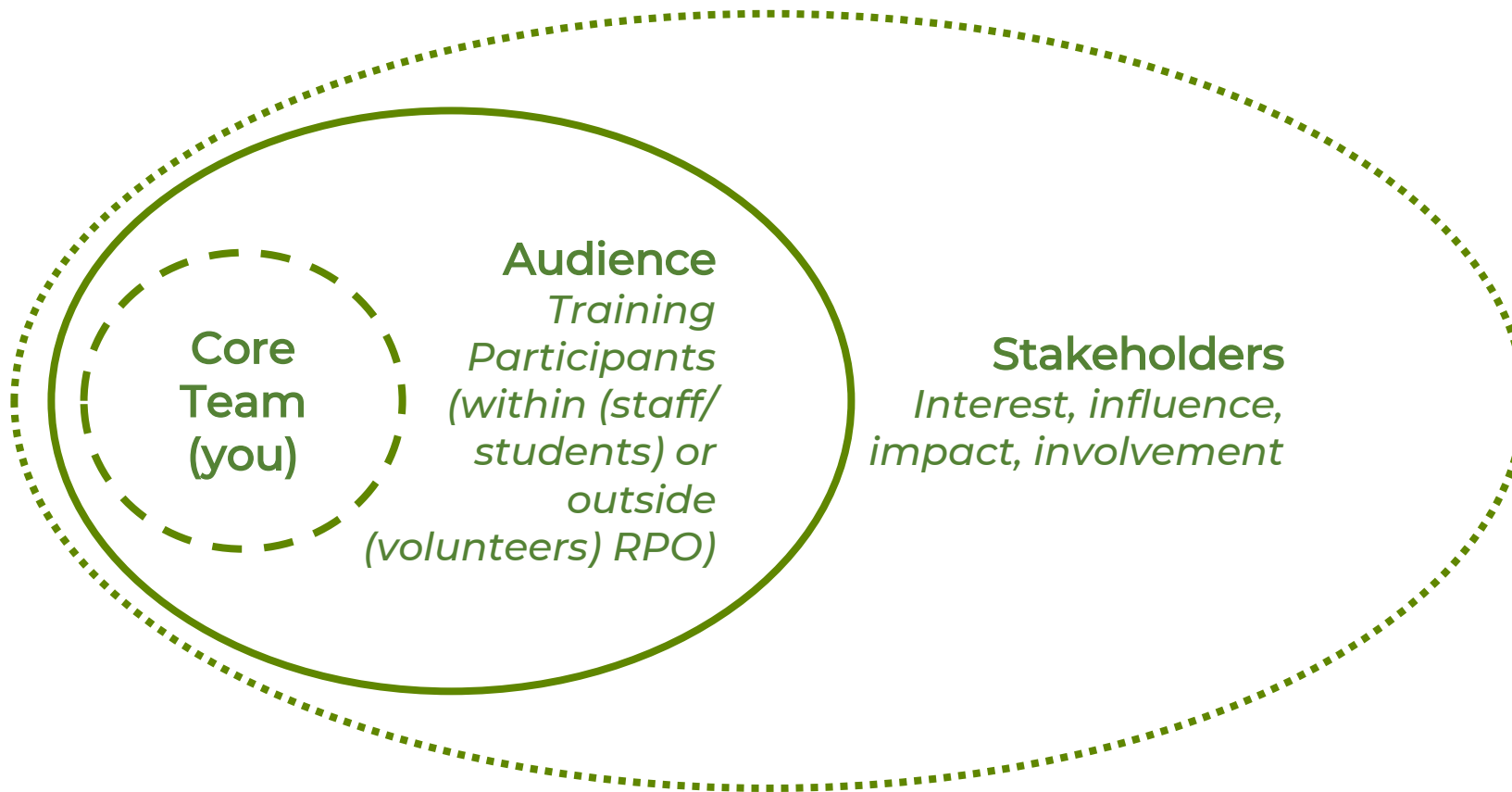
Stakeholders
Interest, influence, impact, involvement
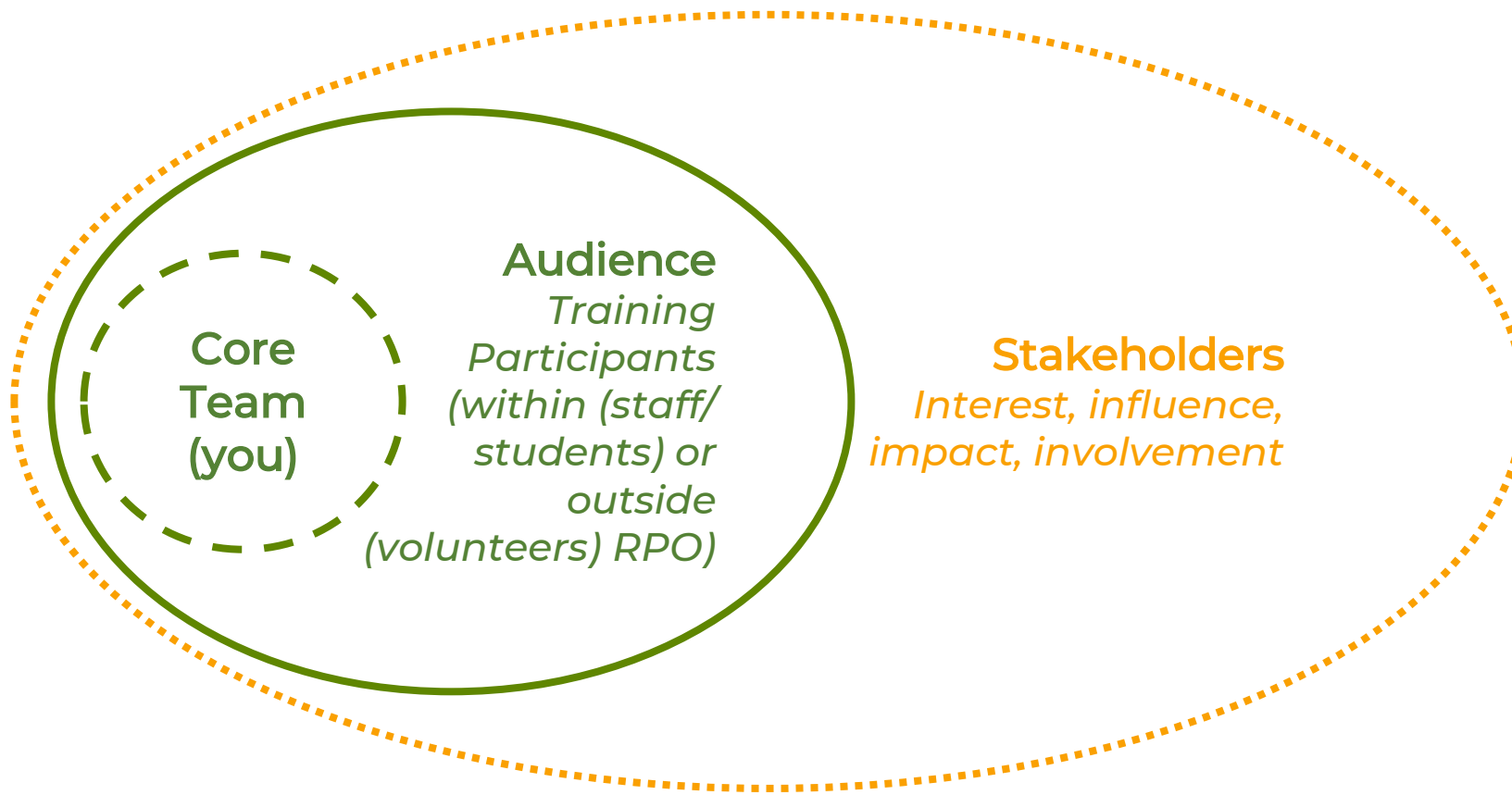
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TIME4CS Stakeholder Analysis
Who are your stakeholders? Some initial questions
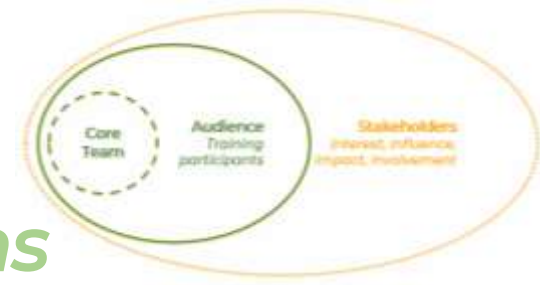
➢ **Who is/should be involved** in making the training happen (approval, organising, execution, attendance, etc.)

➢ **What & how** do they contribute?

➢ **What interests** do the stakeholders have in the training?

➢ **What influence** can or do the stakeholders have on the training?

➢ How may stakeholders be **affected or impacted** by the training?

➢ **Which stakeholders are essential to involve?**

➢ **At which stage** do the stakeholders need to be involved?

➢ Several ways to identify stakeholders

➢ Several ways to think about their involvement - interest, influence, impact, roles, timing, etc.

TIME4CS Stakeholder Analysis example: Interest/Influence

Stakeholder mapping for CS Training implementation

➢ **Interest**
- ➢ Who is interested?
- ➢ Who could you interest?
- ➢ Who should be interested?

➢ **Influence**
- ➢ Who influences whether your training will happen or not?
- ➢ Who is influenced by your training?

Interest
High

Influence
High

Low

Low

ECRs
Characteristics
……
……

Dean
Characteristics
……
……

External collaborators
Characteristics
……
……

Research Library Staff
Characteristics
……
……

Researchers
Characteristics
……
……

Funding Officers
Characteristics
……
……

Heads of Department
Characteristics
……
……

Place your stakeholders according to their level of interest and influence

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Core Team   Audience
Training participants   Stakeholders
Interest, influence, impact, involvement
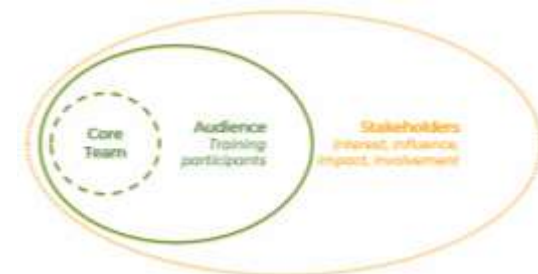
TIME4CS Stakeholder Analysis example: Timing/Stakeholders

Stakeholder mapping for **Citizen Science Training implementation within RPO**

Stakeholders – *any change agents?*
Place your stakeholders according to when you need to involve them

Audience

External collaborators
Characteristics

External collaborators
Characteristics

Research Library Staff
Characteristics

Dean
Characteristics

Funding Officers
Characteristics

Heads of Department
Characteristics

Researchers
Characteristics

ECRs
Characteristics
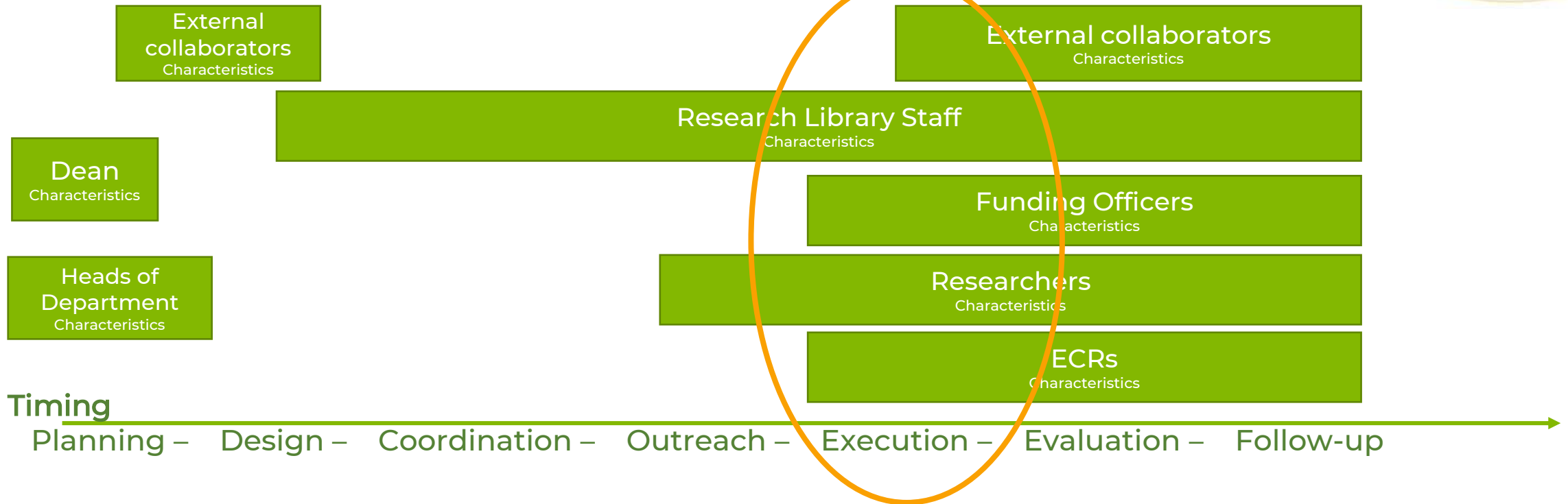
Timing

Planning – Design – Coordination – Outreach – Execution – Evaluation – Follow-up

TIME4CS What researchers need to know about CS

Some theory and some practice

Theory (and some cases)

- Inspiration from online courses, e.g. UCL course:
    - Technical aspects
    - Volunteer management & communication
    - Data issues & data management
    - Topic-specific approaches (inspiration from cases)
    - Ethics & legal aspects (e.g. GDPR)
    - Evaluation
    - (Policy)

Citizen Science and Scientific Crowdsourcing: an Introduction

Course content

The course starts with the basics of citizen science and scientific crowdsourcing.

You'll then learn about:

- the technical aspects of citizen science projects
- how to make projects participant-centred
- volunteer management
- user-centred design and human-computer interaction
- data issues in citizen science - managing data and ensuring quality
- environmental citizen science
- ethics and legal issues
- evaluation and policy

The course ends with a look at social theory approaches to thinking about citizen science and its place in the world.

There will be plenty of hands-on experiences to help you analyse and understand citizen science.
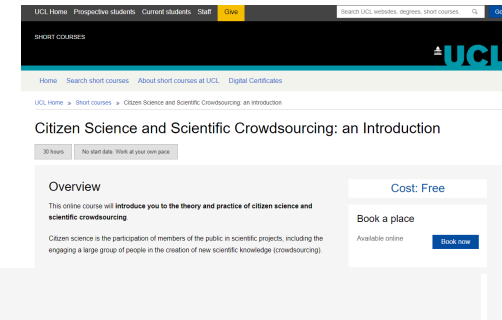
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TIME4CS What researchers need to know about CS

Some theory and some practice
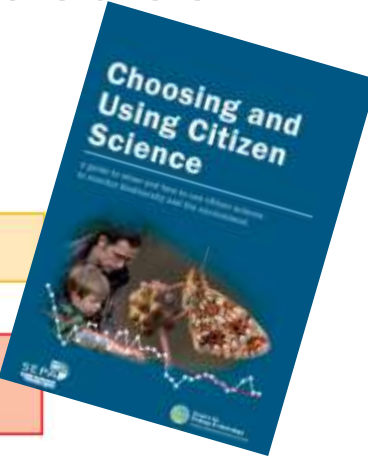
Part 1 of the decision framework

START

Can some/all aspects of the project be virtual tasks completed entirely online? — YES → Consider **crowd-sourcing approach to citizen science**[1]

NO

Is it possible to make observations safely?[2] — NO → **Not suitable for a citizen science approach.** Observations requires activities that cannot be made safe by changing protocols

YES

Do you need a sensor to make a record? — YES → Is a sensor available for public use?[3] — NO → **Not suitable for a citizen science approach**

NO / YES

Spatial scale: is sampling restricted to a single site?

NO — Multiple sites (often extensive spatial scale)

YES — A single local site

Are repeat visits by the same individuals necessary?[4]

NO → Short-term, large scale

YES → Long-term, large scale

Do you need repeat observations over a long time period?

YES → Long-term, single site

NO → Short-term, single site

Choosing and Using Citizen Science
A guide to when and how to use citizen science to monitor biodiversity and the environment

CS is a method like any other scientific method
– only use when appropriate!

Guide to Citizen Science

	Before you start	
1	Is citizen science the best approach?	2
	Choose a citizen science approach	4
	Citizen science flowchart	6
First steps		
2	Establish project team	7
	Define project aims	8
	Identify funding and resources	9
	Identify and understand target participants	10
Development phase		
3	Design the survey or scheme	12
	Consider data requirements	14
	Consider technological requirements	16
	Develop supporting materials	17
	Test and modify protocols	19
Live phase		
4	Promote and publicise the project	21
	Accept data and provide rapid feedback	22
Analysis and reporting phase		
5	Plan and complete data analysis and interpretation	23
	Report results	24
	Share data and take action in response to data	25
	Evaluate to maximise lessons learned	26
Resources and links		

Pocock et al. 2014: https://www.ceh.ac.uk/citizen-science-best-practice-guide

TIME4CS What researchers need to know about CS

Some theory and some practice

WELCOME TO THE ZOONIVERSE

People-powered research

See All Projects

THE ZOONIVERSE WORKS

771,523,814

CLASSIFICATIONS SO FAR BY
2,654,785 REGISTERED VOLUNTEERS

Practice!

- A great way to learn and get inspiration is to participate in citizen science projects!

- An easy way is to try out projects on Zooniverse.org (usually around 100 projects)

- Try to find local projects you can participate in as well (not necessarily only within your own discipline!)

TIME4CS What other RPO staff need to know about CS

Depends who your audience is! (communication staff, funding staff, administrators)

For all:

- Theory (but not too much)
- What citizen science is (and is not)
  - Enable their participation in an ongoing citizen science project (practice)
- What the proposed citizen science project is about

Specific to their role:

- Why their role is important for a successful citizen science project
- How they can support researchers with citizen science projects, identifying specific tasks:
  - identifying and applying for funding
  - running communications and outreach
  - volunteer management
  - IT platform development & maintenance
  - support on legal and ethical aspects

TIME4CS What students need to know about CS

Some theory and some practice

Theory (and some cases)

- Inspiration from courses, e.g. UCL course (past slide) or SDU course:
  - Reasons to include citizens
  - Co-creation
  - Managing citizen science projects
  - Learning to work cross-disciplinarily
  - How to contribute to (citizen science) research

Practice

- Include field trips, citizen science project visits and/or conference attendance
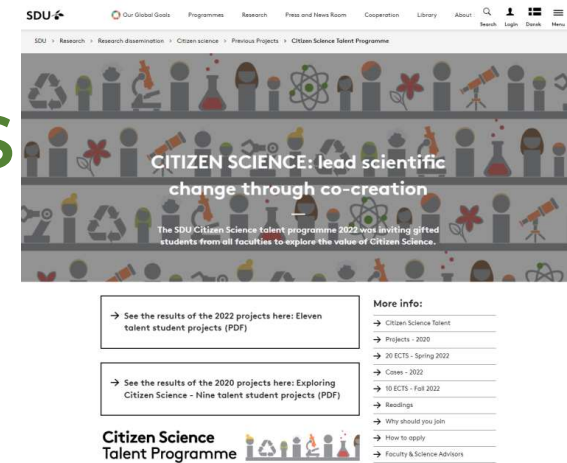
The students would learn to:

- Co-create and manage citizen science projects
- Employ digital media to engage citizens
- Critically argue for inclusion of citizens in your field
- Support the sustainability agenda through citizen engagement
- Unfold your own profession in a cross-disciplinary team
- Contribute to citizen science research.

As part of the programme students were invited to participate in a conference and a study trip free of charge.

TIME4CS What students need to know about CS

Some theory and some practice

WELCOME TO THE ZOONIVERSE

People-powered research

See All Projects

THE ZOONIVERSE WORKS

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Practice!

- A great way to enhance understanding and learn is to participate in citizen science projects!

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- Try to find local projects your students can participate in as well (not necessarily only within their own discipline!)

TIME4CS Train-the-Trainer (TTT) concept

Training more trainers

Choose the important points to cover for your audience and project (e.g. from list on the right)

- In our 2-hour citizen science TTT, we focused on:
  - Audiences and stakeholders
  - Training design
  - Identifying challenges and solutions to implementing the suggested training

Trainer (you)

Train-the-Trainer

New trainer — New trainer

Trainees (staff/students/volunteers) — Trainees (staff/students/volunteers) — Trainees (staff/students/volunteers) — Trainees (staff/students/volunteers)
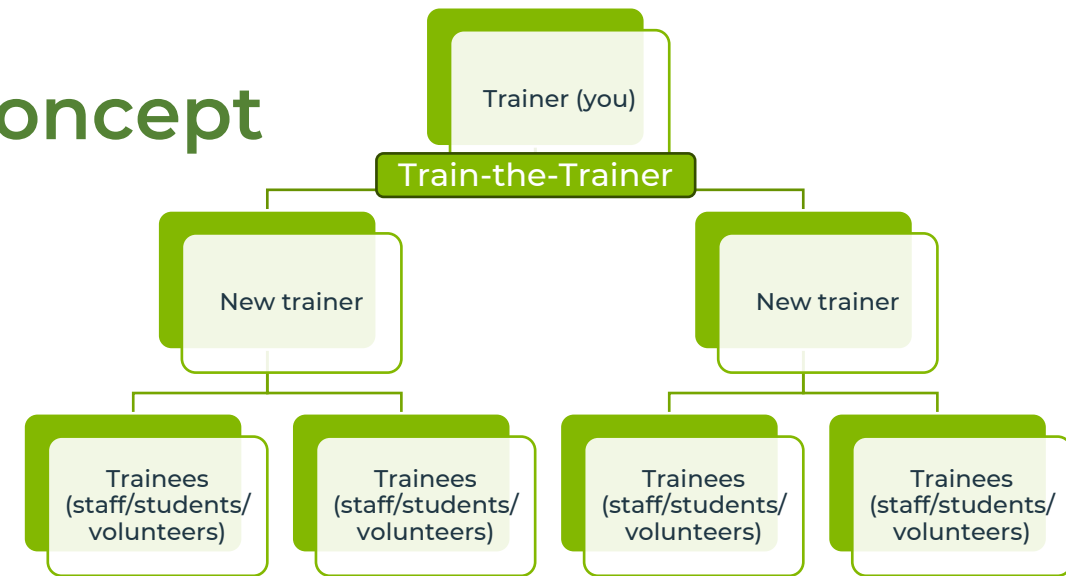
Leading a 'Train the Trainer' workshop

Dashboard › Courses › Introductory courses › Train the Trainer

> Introduction > Timescale
> Resource > Communication
> Collaboration > Geographic Scope
> Integrity > Project Type and Audience

MOOC course on EU-citizen.science

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TIME4CS Stakeholder Analysis: Timing of Participant training

Stakeholder mapping for Citizen Science participant / volunteer training

Participants Participants Participants Participants

Stakeholders – *any change agents?*

Place your stakeholders according to when you need to involve them

External collaborators – *break this down further, who are they?*

Director / Board

Research Library Staff

Heads of Department

Early Career Researchers

Researchers

Funding Officers

Timing

Planning – Design – Coordination – Outreach – Execution – Evaluation – Follow-up

Participants

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You might need different types of volunteer training at different times of your project

TIME4CS Stages of participation

Awareness-raising & training focus

Volunteer perspective

Seeing posters / flyers Events / talks (Social) media **Word-of-mouth**	Getting to know project & people Intro meeting w. information	Getting to know the tasks Receive training Building confidence	Exploring involvement & opportunities Empowerment Ongoing involvement	Provide feedback to project

Project perspective

Create posters / flyers Events / talks (Social) media Encourage people to talk about the project	**Welcome!** Intro meetings Volunteer handbook	Run trainings Support at tasks Provide learning and development opportunities	Offer new training & development opportunities Retain volunteers Create Ambassadors	Respond to feedback

Timing

Awareness – Recruitment – Onboarding – 'Tasks' (training) – Learning & Development – Follow-up (ongoing)

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TIME4CS Plan your training programme

Make it a positive experience for your volunteers, not a chore they feel they have to do

- Set training goals (your goals and goals for volunteers)
- Make volunteers feel welcome
- Focus on hands-on, practical training (even if online!)
- Make your training accessible
- Ask for feedback – and act on it

TIME4CS Learning & Teaching/Training Styles

Learning styles
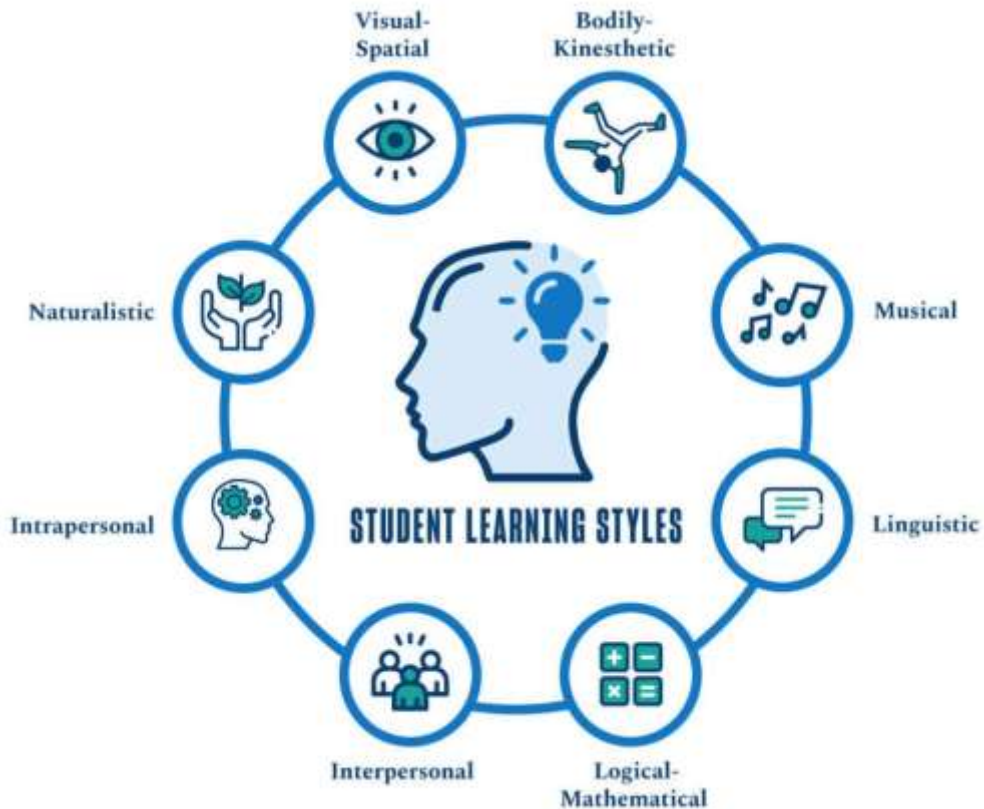
University of San Diego

Teaching styles

Lots!

Facilitator

The facilitator's job is to support everyone to do their best thinking.

To do this, the facilitator encourages full participation, promotes mutual understanding and cultivates shared responsibility.

By supporting everyone to do their best thinking, a facilitator enables group members to search for inclusive solutions and build sustainable agreements.

Kaner & Berger, 1996

TIME4CS Onboarding (recruitment)

Make volunteers feel welcome!

Introductory Information Session / Meeting

- Information about the organization and the project: aims, methods of involvement, project expectations and data needs

Volunteer handbook

- Ideally there is a volunteer handbook where all the important information can be found

- Expand it as the project develops – ask for volunteers to contribute (they know about their own role and what it is important to know. Acknowledge them!)

Get to know your volunteers!

- Engage volunteers in discussions and get to know them. What are their motivations and expectations – what needs to happen for them to stay involved?

TIME4CS Task Training (building confidence)

Getting to know the tasks
Receive training
Building confidence

Run trainings
Support at tasks
Provide learning and development opportunities

Active participation

Task training

- Provide task training. Think about staging it, if possible. Volunteers may not need all the information / training from the start. Recognise that some volunteers may come in with a lot of experience and may not need the 'basic' training – maybe they can even help train?

- Provide a variety or types of training, make it interesting: use storytelling, games, competitions, volunteer collaboration groups, etc.

Provide support

- Ensure support is provided to volunteers. Questions will come up. An option is to provide a forum where also other volunteers can respond and provide answers, also further involving them in the project

Provide learning and development opportunities

- Provide more advanced training opportunities, if training is staged. Offer opportunities for other types of involvement, e.g. attending conferences and meetings and having volunteers give their perspective from the project

TIME4CS **Learning & Development Opportunities**

Exploring involvement &
opportunities
Empowerment
Ongoing involvement

Offer new training &
development opportunities
Retain volunteers
Create Ambassadors

Empowerment and retention

Offer expanded learning and development activities

- Identify new opportunities and explore with volunteers what new learning and development activities they would like within the project. Accept that some will not want any and are happy with their current engagement in your project

Empowering volunteers

- Enable and train volunteers to take on Ambassador roles. Training here includes how to engage with and possibly manage other volunteers, or take on more responsibility and other tasks than 'standard' volunteers. Continue providing support to your Ambassadors! They are important in further recruitment of new volunteers as well. Do not focus on your Ambassadors at the expense of your 'standard' volunteers – keep both feeling welcomed, important and empowered

TIME4CS Planning for Volunteers: The Logic Model

Resources: What do we need?	Activities: What do we do?	Outputs: What happens immediately?	Outcomes: What are my goals: short- and long-term?	Impacts: What may happen ultimately?
Types of resources needed	Types of activities and actors	Direct products of activities and trainings	Behavioral and social change (new motivations, practices and communities)	Changes in assumptions, values, policies, attitudes, aims, contextual factors
Specific resources available	Specific activities planned	What the participants specifically produce or learn	Benefits to participants	Organizational change
Staff/volunteer capacity, money, facilities, materials, partnerships	Events, trainings, tasks, group work, tool use, actions, processes	Cognitive, attitudinal, and social capacities or connections	Better data collection, better engagement & empowerment of volunteers	Addition to / change in scientific knowledge

Design your own training program

Training module 2.1.3:
Interactive session

TIME4CS Interactive session: Design your own training inside or outside RPO

Program	Task
Introduction	Briefly introduce the logic model as a tool for planning and evaluating CS training programs. Explain the session's objective: to create a structured plan for a CS training session.
Group formation	Divide participants into small groups or set them up to work individually. Provide each group or individual with a template of the logic model and necessary materials (pens, paper, or digital tools).
Designing the training	Participants use the logic model to develop their CS training plan. This involves identifying inputs (resources needed), activities (what will be done), outputs (immediate results), outcomes (short and long-term goals), and impacts (broader changes or benefits). Encourage creativity and practicality, considering factors like audience, content, resources, and desired outcomes.
Sharing and feedback	Each group or individual presents their logic model-based training plan. Encourage peer-to-peer feedback, focusing on the feasibility, clarity, and potential impact of each plan.
Evaluation and conclusion	Conclude the session by highlighting the importance of structured planning in effective training program design. If time allows, the facilitator can provide brief, overarching feedback, emphasizing key takeaways.

Engaging schools and communities

Training Module 2.2

Involving schools in citizen science engagement

Training Module 2.2.1

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SUPPORTING SUSTAINABLE
INSTITUTIONAL CHANGES
TO PROMOTE CITIZEN SCIENCE IN
SCIENCE AND TECHNOLOGY

TIME4CS Why is it important to learn about collaboration with schools in citizen science?

Key take-aways

Engaging in citizen science within school settings can yield scientific results, and schools, educators, and students can experience valuable advantages by participating

- **Educational enrichment:** enhance students' learning experiences by providing real-world applications of scientific concepts

- **Community engagement:** strengthen ties between schools, communities, and the broader scientific community

- **Sustainable impact:** forster scientific literacy and environmental stewardship, and the next generation of scientists

Resultatet af 30.000 elevers jagt efter mos, lav og bjørnedyr kommer den 30. oktober

Læs artiklen om
elevernes jagt

Arter

Arter er et fællesskab, hvor alle kan hjælpe med at finde, registrere og bestemme arter. Du kan samtidig få inspiration til naturoplevelser og viden om Danmarks artsrigdom.

| Q Find en art ⌄ | Søg | + Indsend et artsfund |

Søg viden i Artsbogen

Arter indeholder viden om alle danske planter, svampe og dyr. Gå på opdagelse i Artsbogen, hvor du kan læse beskrivelser af mange af arterne.

Gå til Artsbogen

Se brugernes fund

Arters brugere registrerer nye fund hver dag. Gå på opdagelse i Arter, og se, hvad der lever nær dig.

Se fund

Bliv bruger af Arter

Arter er et fællesskab for naturinteresserede. Få hjælp til artsbestemmelse af dine fund, og hjælp selv andre.

Bliv bruger

Masseeksperiment

Aktivitet | 17/04-2023 – 04/06-2023 | 1039 følgere

I 2023 handler Masseeksperiment om jagten på mikroliv. Skoleelever fra hele landet skal ud og kortlægge forekomsten af mos, lav og bjørnedyr. De skal indsamle prøver, som bliver sendt ind til forskerne, måle abiotiske faktorer og måske lede efter bjørnedyr i det indsamlede mos eller lav?

+ Følg denne aktivitet

Kontaktperson
marie.lillemark@snm.ku.dk

Tilmelding
forskning.snm.ku.dk/citizen-science/masseeksperiment/

Seneste fund | Se alle fund

Simon Pettitt
Bjørnedyr

Simon Pettitt
Bjørnedyr

Frederik Leerhøi
Almindelig krøltuemos

Denne aktivitet efterspørger oplysninger om fundet, der kun kan udfyldes via denne knap:

Indsend et fund til denne aktivitet

Du eller andre kan også bruge linket:
Kopier linkadresse til udklipsholder

Hvad er der fundet?

4.145
artsfund

348
arter i alt

Udforsk i fundsøgning

Artsgrupper

Top-10 over arter	Top-10 over rødlistede arter	Top-10 over personer
Med flest fund	Med flest fund	Med flest arter

1 Almindelig væggelav   503 fund

Artsgrupper

Svampe	2.068
Mosser	2.052
Øvrige dyr	25

Scientific impact: New knowledge and insights

The advancement of (useful) scientific knowledge

- The project is the largest survey of mosses, lichens, and tardigrades in Denmark

- 5 new tardigrade species may have been discovered

- Furthermore, as microfauna are sensitive to air emissions resulting from agriculture, industry, and transportation, the data will aid the researchers in understanding the effects of human-environment interactions on biodiversity

Educational impact: Motivation and empowerment

The advancement of learning and engagement

- The pupils' motivation will increase when they engage in authentic, scientific investigations, and when the data they provide is actually used to produce scientific results

- The Mass Experiment will enhance the pupils' scientific literacy and their science capital (their knowledge, attitudes, participation, experiences), empowering them to engage with science and scientific issues in the future

TIME4CS Collaborating with schools for effective citizen science engagement

The value of citizen science for schools

Enhanced learning and understanding of science

- Citizen science engages students in real-world scientific research with hands-on learning, critical thinking, and problem-solving

Community engagement and civic responsibility

- Schools' participation in citizen science projects connects students with their local communities and the broader scientific community

TIME4CS Collaborating with schools for effective citizen science engagement

The value of citizen science for schools

Scientific literacy, informed decisions, and STEM careers

- Citizen science empowers students to become scientifically literate citizens by developing skills to analyze data, make informed decisions, and contribute to scientific knowledge

Environmental awareness and sustainable practices

- Through citizen science, students may gain a heightened awareness of environmental issues, conservation efforts, and eco-friendly behavior

SCHWEIZ FORSCHT

Aktuelle Seite: Vorhaben > Projektarchiv > LETS Study Leysin

Suche

Projektarchiv
LETS Study Leysin

LETS stands for "Local Environmental Transect Survey". The Leysin American School is carrying out an elevation-based transect and study of the forest ecology of Leysin, Switzerland.

About the project

We have established 13+ 30m X 30 plots from 600m to 2300m in elevation. Inside these plots we are identifying, counting, and measuring the trees, as well as conducting complete species inventories. We do this twice a year with students in the school. Approximately 100+ students visit the plots in October and another 100+ in May.

How can citizens participate?

We welcome the public to help monitor our plots including inventorying species so that we can know when new species arrive. We also welcome other schools sharing our plots in order to contribute to this long-term research. But mostly we want to share our methodology so that other schools will launch their own Local Environmental Transect Surveys. We would like to see schools worldwide doing their own LETS Study _____ (fill in your town).

What happens with the results?

The results so far are in our Excel spreadsheets and in iNaturalist and will be shared on lets-study.ch. However, we are looking for ways to open up our data for others to use as they wish.

Institution: Leysin American School Alpine Institute

Projektleitung: John Harlin

Leysin American School
Chemin de la Source #3
Leysin 1854 Suisse

E-mail: jharlin@las.ch

Zur Projekt-Homepage

REGAME   REGAME CUP'18   ARGUNOTES RESEARCH TOOL   QUANTUM TOOLS   FIF   UNDERVISNINGSTILBUD

ReGAME Research-Enabling Game-Based Education

What is ReGAME?

ReGAME uses games to relate research challenges to core curriculum - to cultivate a love of learning and curiosity for how the world works. Utilizing gamification and 'extreme' citizen science we aim to revolutionize 21st-century education by nurturing students creativity and intuition.

ScienceAtHome - What is ReGAME?

Se senere   Del

Se på ▶ YouTube

ReGAME consists of learning trajectories that can be integrated into a structured school curriculum, but also be followed by citizens on the basis of personal interest. Co-created Citizen science allows the general public to contribute to many steps of the research cycle, and even co-create gameplay, instead of simply producing data for researchers to analyze. The full democratic potential of citizen science will only be unleashed by incorporating these principles.

ScienceAtHome - ReGame

Se senere   Del

Se på ▶ YouTube

TIME4CS Collaborating with schools for effective citizen science engagement

Guiding design principles for citizen science in schools

Curriculum alignment

- Integrating citizen science projects into the school curriculum, reinforcing key science concepts and skills

Problem-based learning (PBL) design

- Engaging students in active learning by presenting them with real-world scientific challenges

Collaboration with teachers

- Leveraging the expertise of educators to design and implement effective citizen science programs

TIME4CS Teachers are important gatekeepers, but also serve as team leaders and data quality filters

TIME4CS Developing material for education and learning opportunities in citizen science

Three relevant socio-cognitive contexts to consider

The science context

- Aligning learning materials with the relevant scientific principles, methods, and terminology to give participants a solid foundation

The context of participation

- Tailoring educational materials to accommodate various skill levels and learning styles, and to promote an inclusive environment

The project-specific context

- Adapting materials to the unique goals, objectives, and data collection methods of the citizen science project

TIME4CS Recognizing the diversity of learning outcomes

Participants can acquire a range of skills and knowledge

Scientific understanding and skills

- Participants may gain domain-specific knowledge, deeper understanding of scientific processes, and develop critical thinking

Cultivating communication, collaboration, and awareness

- Participants may develop communication and collaborative skills, and they may gain awareness of environmental and social issues

Empowerment, a sense of responsibility, and advocacy

- Participants gain insight into project management and teamwork, and may become advocates for science and community involvement

Effective communication and engagement

Training Module 2.2.2

TIME4CS What makes communication and engagement with participants in citizen science crucial?

Key take-aways

Effective communication and engagement ensures common understanding of goals, methods, and process, while also building a sense of community

- **Data quality and reliability:** engaging with participants promotes data accuracy, reliability, and validity

- **Motivation and retention:** help partipants feel committed over time, encouraging continued involvement and sustained contribution

- **Public awareness and impact:** foster participants' ownership, so that they are more likely to share knowledge and experiences

FRONTIER RESEARCH | POLICY | SCIENCE IN SOCIETY | SOCIAL SCIENCES

REPUBLISH ⇄

Changing the conversation about science through citizen communicators

Initiatives to help citizen science projects communicate about their results are paving the way for ordinary people to take the lead as effective and trustworthy science communicators.

19 April 2022

By CECILIE JENSEN

TIME4CS Every good citizen science project comes with a solid and sustainable communication plan

The building blocks of the communication plan

Determine the project aims and indicators

- Often a balance between contributing to science, raising public awareness of a scientific issue, involving members of the public in setting the research agenda and finding solutions to social issues

Define the level of engagement

- Participants may help in any one of these tasks: 1) setting the research question; 2) searching for information; 3) formulating a hypothesis; 4) choosing the data collection methods; 5) gathering, analysing and interpreting data; 6) writing and disseminating conclusions; and/or 7) discussing the results

TIME4CS Every good citizen science project comes with a solid and sustainable communication plan

The building blocks of the communication plan

Specify the target audience(s)

- Consider target group demographics or segments (primary, secondary, and intermediate), and define channels, messages, and the degree of interaction and inclusivity accordingly

Understand what motivates the audience(s)

- Participants may be driven by a mix of extrinsic motivations, such as recognition, status, identification, and other benefits, and intrinsic motivations, such as enjoyment, personal growth, sense of purpose, learning and skill development etc.

Reasons for monitoring air quality

As part of the development process for its engagement strategy the hackAIR project surveyed 370 potential citizen scientists. An online questionnaire gauged motivations for and barriers to air quality monitoring and measurement in the neighbourhood. The leading motivations were: general curiosity about the measurement results (56%), concern about the local air quality caused by the perception of living in an area with poor air quality (43%) and personal health problems (30%). These reasons were used as triggers during opportunities to communicate later in the project.

hackAIR

COLLECTIVE AWARENESS
FOR AIR QUALITY

hackAIR Contest!

Win an MLS smartphone

"I'm proud of the contribution I made to science"

So who are these citizen scientists? Jeanine Goossens took part in Grote Schelpenteldag (Big Shell Count). Gitta Camfferman interviewed her about her experience.

Why did you take part?
"I think it's vital that we study the evolution of biodiversity on beaches. The beach, and the sea, offer me relaxation. I love being there. But today is special. You can go hunting for shells at any time, but today, as a member of the public, I got to be part of some important research. The more of us that take part, the better the results. That's why I'm here on this terribly cold Saturday in March."
"We need scientific research to safeguard our future here on Earth. By doing this I've been able to do my bit, and I'm very proud of it, even if I only played a tiny part."

What did you think of it?
"I thought it was really very interesting. The collection method they got us to use was pretty good and they communicated it to us well beforehand. And the experts from the Flanders Marine Institute (VLIZ), who helped us with the count, were really friendly and told us all a lot about the shells. I even managed to find a pretty rare one!"
"I think it's vital that our children and the generations to come grow up with science. It is our task to educate and train them. And I hope it works out well."

TIME4CS Every good citizen science project comes with a solid and sustainable communication plan

The building blocks of the communication plan

Engage with the target audience(s) in various ways

- Use different media and formats to engage with the audience, such as online platforms and apps, in-person ro virtual workshops or training sessions, and educational outreach and events

Evaluate and improve the materials and activities

- Evaluate the effectiveness of communication materials and activities through feedback surveys, data analysis, and participant interviews to ensure that information is clear, engaging, and meeting the needs of participants and aims of the project

TIME4CS Tactics and tools for communicating with participants, stakeholders, and the public

Use networks and offer fun experiences

Hitch a ride on existing networks

- Partner up with organisations or networks to get in touch with specific audiences, achieving greater reach and impact
  - Often, it makes little sense to build a community from scratch

Offer fun and enjoyable experiences

- Participating in citizen science should be educational, but unless it is also fun, it will not be sustainable, and participants may leave

- Combine informational or educational activities with social events or special excursions or treats that will entertain the participants

History excursions

For the Ja, ik wil (I Do) project citizen scientists logged onto their computers to transcribe and analyse historical marriage announcements in Amsterdam. It was all to do with a historical study of marriage relations. For an enhanced sense of community and to keep citizen scientists motivated and rewarded, the University of Utrecht's researchers arranged regular meet ups, at which they talked about the study's progress and gave the participants a chance to ask questions and interact with them. They also arranged excursions, such as a visit to the Trippenhuis, a historical building in Amsterdam, which is not normally open to the public.

See also the interview with project leader Tine De Moor.

TIME4CS Tactics and tools for communicating with participants, stakeholders, and the public

Use social media and digital storytelling

Use social media to offer opportunities for interactions

- Leverage different platforms to facilitate real-time communication, share project updates, and engage with large audiences, fostering a sense of community among participants and supporters

Digital storytelling can create a sense of belonging

- Harness the power of digital storytelling to convey the project's narrative, share participant experiences, and highlight the impact of citizen science, making the project more relatable and engaging for a wider audience

Elements of a good story

Structure
The story follows a scenario, through which the project is introduced, followed by a specific activity to attract attention and interest, then closes on a climax.

Character
Who is the story about? Stories are best told from a personal perspective so the reader, listener or viewer can truly empathise with the character's situation.

Authenticity
The reader, viewer or listener must be able to identify with the character's story, so that a level of familiarity or connectedness is created.
Hearing a voice, or choosing the right photos and captions play a role in this.

Setting
Where is the story set?
To create empathy for the character the story also includes details on the environment, time and season.

Language
The language must be highly accessible. Use an airy and simple writing style.

Message
The best stories are the simplest ones. Go for one clear story line.

TIME4CS Tactics and tools for communicating with participants, stakeholders, and the public

Gamification and project ambassadors

Add gamification elements to the citizen science project

- Apply game-design elements such as points, badges, rankings, missions, or "race against the clock" to make the tasks more enjoyable - be aware that they may also introduce potential biases

Find and train project ambassadors

- They may help with your project's logistics, administration or communication in order to enhance outreach and engagement
- They are usually intrinsically motivated to play a role in the project

TIME4CS

TACTIC 1

Hitch a ride on existing networks

Whether you set up citizen science on a small or large scale, the best way to effectively engage your target audience is often with help from existing networks and communities. Large societies and networks are usually on the lookout for a new angle or to inject new life into their annually recurring initiatives.

TACTIC 2

Offer a fun experience

Participating in citizen science should be educational, but unless it is fun it will not be sustainable. How do you increase the fun factor of your citizen science project?

TACTIC 3

Use social media

Facebook, Instagram and other social media can really bring your citizen science project to life. They offer opportunities for interaction between scientists and citizen scientists and between the citizens themselves.

TACTIC 4

Digital storytelling

Telling stories can create a sense of belonging between citizen scientists. Especially if you let them testify about their experience of taking part in your project.

TACTIC 5

Gamification

Adding gaming elements to your citizen science project can benefit your research. Those who feel they can improve, take on a challenge or win a competition are more likely to stay motivated and keep participating for longer.

TACTIC 6

Find project ambassadors

An ambassador is a citizen scientist who has been involved since the very beginning. He or she usually knows a lot about your project's research topic and will often have taken part in other science-led projects. Ambassadors are also known as lead users. They have a strong intrinsic motivation to participate.

Crafting narratives and communication strategies in citizen science

Training Module 2.2.3: Interactive session

TIME4CS Interactive session: Crafting narratives and communication strategies in citizen science

Program	Tasks
Introduction	Present the two task options and distribute handouts with instructions and examples. Provide participants with large sheets of paper for their work and markers or other drawing tools (online if necessary).
Task Selection and Planning	Divide participants into small groups or set them up to work individually. Participants choose one of the two tasks: developing a story or selecting communication tactics. They brainstorm key elements or tactics/tools they wish to focus on.
Task Execution	For the storytelling task, participants sketch out the narrative of their chosen citizen science project, focusing on structure, characters, setting, and message. For the communication strategies task, participants list and elaborate on selected tactics and tools, considering how they would apply to a specific citizen science initiative.
Sharing and Feedback	Participants briefly present their stories or communication plans, highlighting the rationale behind their choices. Peers provide feedback, focusing on the clarity, engagement potential, and comprehensiveness of the narratives or communication strategies.
Conclusion	Summarize the importance of storytelling and strategic communication in citizen science. Encourage participants to incorporate these elements into their actual citizen science projects.

TIME4CS

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#TIME4CS

Thank you
for your
attention !