PaGES7

Planning, Management and Execution of a Scientific Experiment in an international research infrastructure

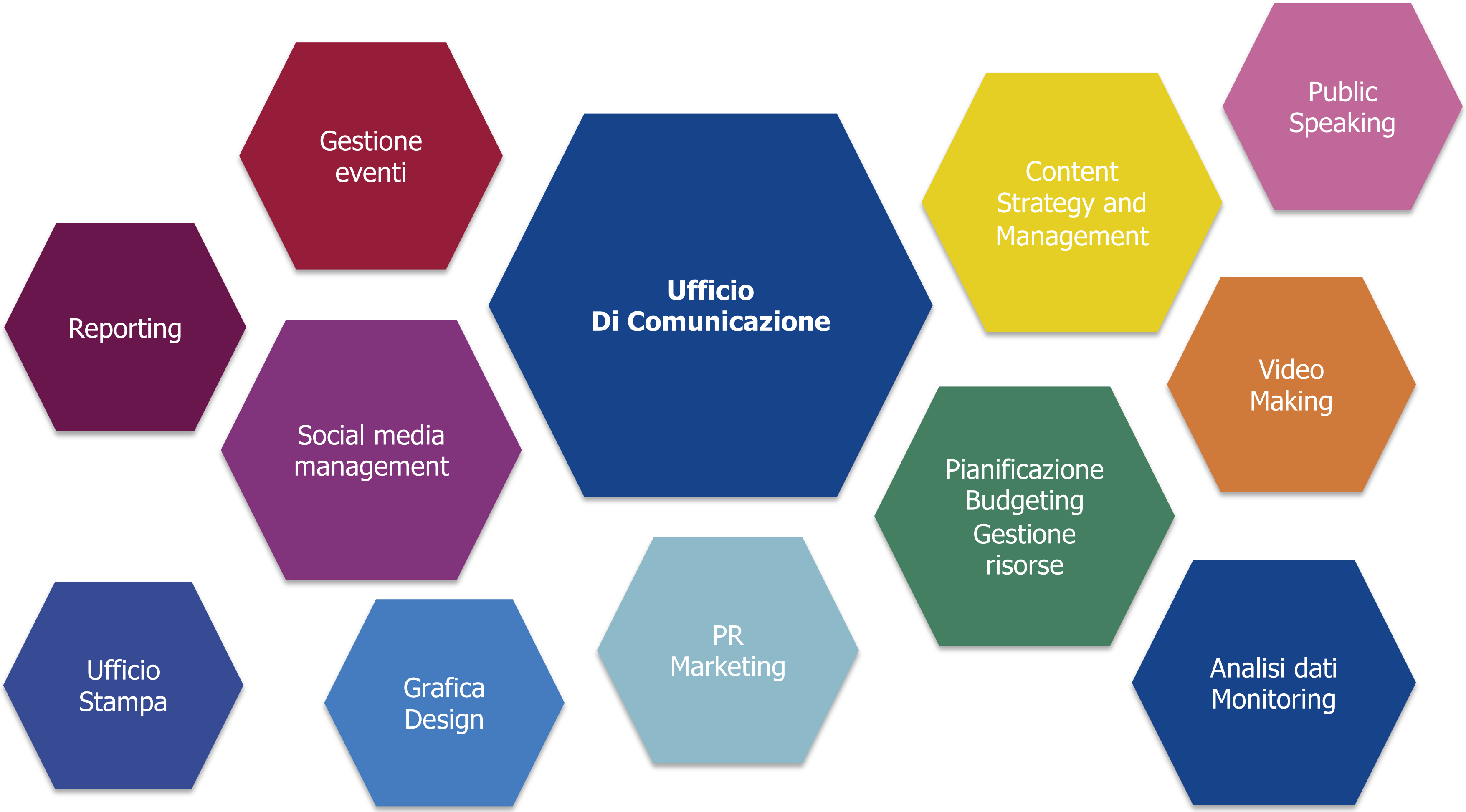
CERIC

Strumenti di comunicazione in un’infrastruttura di ricerca

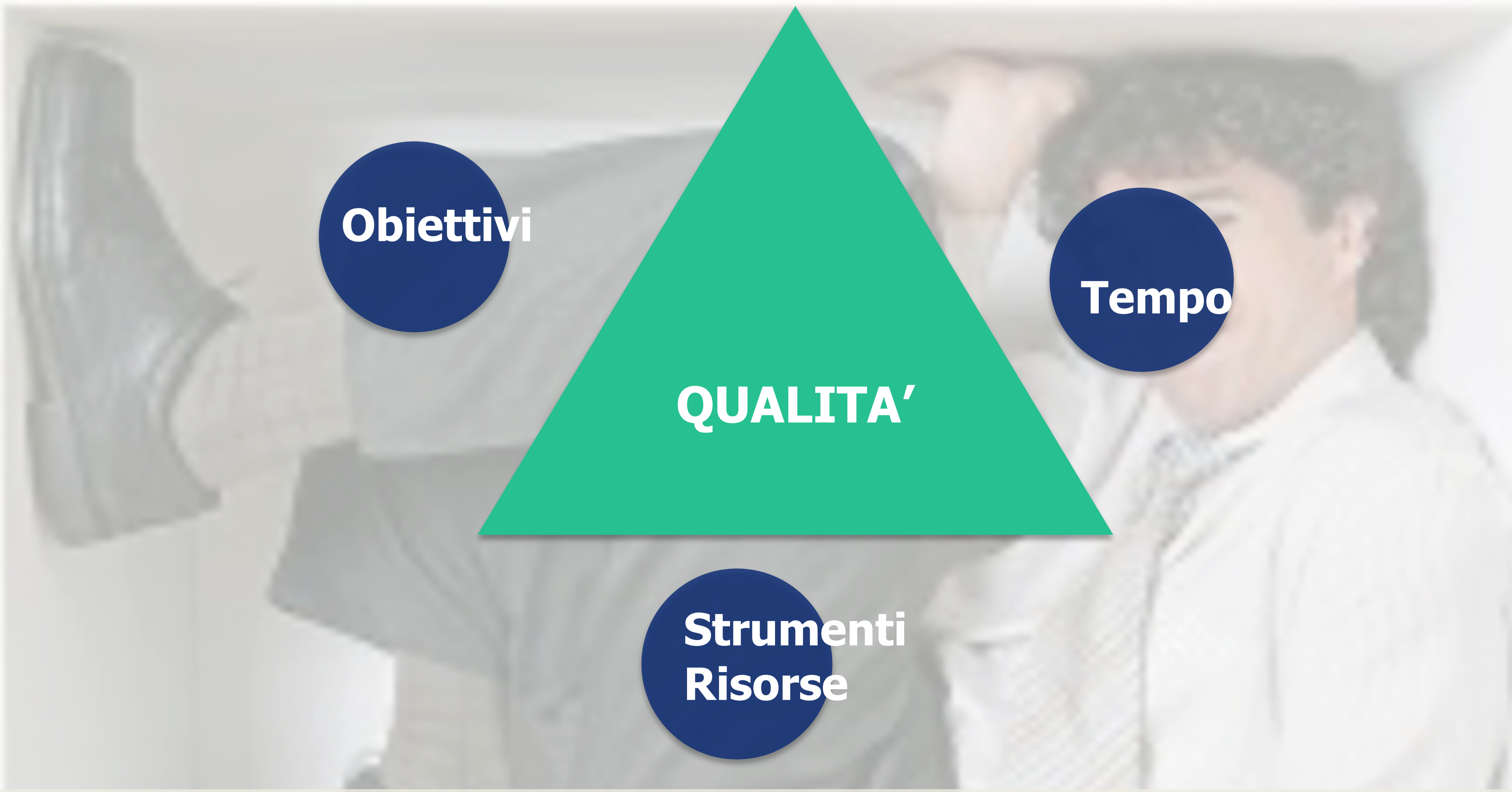
Nicoletta Carboni
CERIC-ERIC

PaGES 7

Ufficio di Comunicazione: Quali competenze?



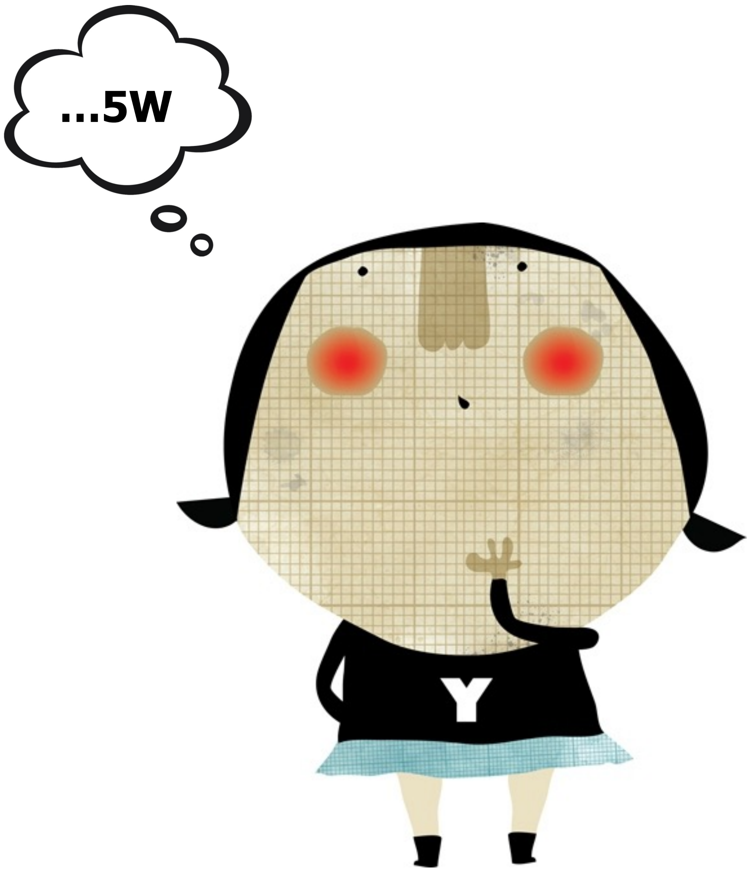
La comunicazione come progetto*



*Un insieme di attività tra loro **correlate e interdipendenti**;

- Finalizzate al raggiungimento di un **obiettivo preciso**;
- Con un **limite di tempo** determinato;
- Con un **budget di risorse** predefinite in partenza;
- Con caratteristiche di **unicità**

QUALE STRATEGIA?



1. **WHO –** Target Audience
2. **WHAT –** Il messaggio
3. **WHY –** Scopo
4. **WHEN –** Tempistiche
5. **WHERE –** Luogo

…

6. HOW – Con quali strumenti?

L’esempio di CERIC
Target Audience

Quali strumenti?

- Eventi (workshop, conferenze, fiere)
- Blog
- Sito Web
- Interviste
- Reports
- Social media
- Comunicati stampa
- Newsletter
- Video
- Media (TV, radio, giornali, riviste)
- Materiale promozionale (depliant, volantini, rollups...)
- Realtà virtuale
- Videogames
- Visite guidate, Tour virtuali

Un esempio

Ricerca sulle microplastiche in Antartide

BIOLOGY LETTERS

royalsocietypublishing.org/journal/rsbl

Research

Cite this article: Bergami E, Rota E, Caruso T, Birarda G, Vaccari L, Corsi I. 2020 Plastics everywhere: first evidence of polystyrene fragments inside the common Antarctic collembolan *Cryptopygus antarcticus*. *Biol. Lett.* **16**: 20200093.
http://dx.doi.org/10.1098/rsbl.2020.0093

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Accepted: 3 June 2020

Subject Areas:
environmental science, ecology

Keywords:
microplastics, expanded foam, springtails, maritime Antarctic, terrestrial food web, μ-FTIR

Author for correspondence:
Elisa Bergami
e-mail: elisa.bergami@unisi.it

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THE ROYAL SOCIETY PUBLISHING

Global change biology

Plastics everywhere: first evidence of polystyrene fragments inside the common Antarctic collembolan *Cryptopygus antarcticus*

Elisa Bergami[1], Emilia Rota[1], Tancredi Caruso[2], Giovanni Birarda[3], Lisa Vaccari[3] and Ilaria Corsi[1]

[1]Department of Physical, Earth and Environmental Sciences, University of Siena, Siena 53100, Italy
[2]School of Biology and Environmental Science, University College Dublin, Belfield, Dublin 4, Ireland
[3]SISSI-Chemical and Life Science branch, Elettra-Sincrotrone Trieste, S.S. 14 Km 163.5, 34149 Basovizza, Trieste, Italy

EB, 0000-0001-8149-9584; ER, 0000-0002-8235-6419; TC, 0000-0002-3607-9609; GB, 0000-0003-2418-058X; LV, 0000-0003-2355-114X; IC, 0000-0002-1811-3041

There is evidence and serious concern that microplastics have reached the most remote regions of the planet, but how far have they travelled in terrestrial ecosystems? This study presents the first field-based evidence of plastic ingestion by a common and central component of Antarctic terrestrial food webs, the collembolan *Cryptopygus antarcticus*. A large piece of polystyrene (PS) foam (34 × 31 × 5 cm) covered by microalgae, moss, lichens and microfauna was found in a fellfield along the shores of the Fildes Peninsula (King George Island). The application of an improved enzymatic digestion coupled with Fourier transform infrared microscopy (μ-FTIR), unequivocally detected traces of PS (less than 100 μm) in the gut of the collembolans associated with the PS foam and documented their ability to ingest plastic. Plastics are thus entering the short Antarctic terrestrial food webs and represent a new potential stressor to polar ecosystems already facing climate change and increasing human activities. Future research should explore the effects of plastics on the composition, structure and functions of polar terrestrial biota.

1. Introduction

Plastic pollution has become an overwhelming environmental issue on a global scale [1,2]. Small plastic fragments have been documented in virtually every ecosystem. However, most research has focused on aquatic systems, especially the marine ones, while contamination on land has been largely overlooked [3–5]. There are methodological challenges in detecting microplastics in soil and its biota, which are mainly owing to the carbonaceous nature of microplastics hampering their detection in complex organic samples [6]. Scientists have only recently been approaching the issue of plastic debris in soils [7,8] and in terrestrial food webs, mostly through bench-scale experiments [9]. The potential negative and direct effects of soil microplastics on human and environmental health remain unclear [10,11].

Plastics, as well as many globally distributed pollutants, have finally reached Antarctica. Early observations of floating or stranded macroplastics (larger than 1 cm) date back to the 1980s [12], and more recently, meso- and microplastics (1–10 mm and 1–1000 μm, respectively; [13]) have been found in surface waters and sediments below 60° South [14–16]. Documented impacts of plastic debris on Antarctic biota mainly include entanglement [17] and ingestion by marine mammals and seabirds at sub-Antarctic and Antarctic islands [18–20]. The spreading of multiple antibiotic resistance associated with stranded plastics in the maritime

Dalla pubblicazione scientifica…

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BIOLOGY LETTERS

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Research

Check for updates

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Titolo

Autori

Affiliazione

Immagine rappresentativa

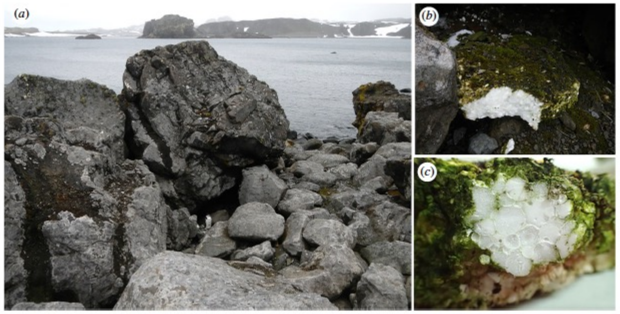

Figure 1. Plastic pollution in the Antarctic terrestrial environment. (*a*) Coastal fellfield at King George Island where the PS foam item (34 × 31 × 5 cm) was collected. (*b*,*c*) close-ups of the PS surface, overgrown with microalgae, moss and lichens.

Dalla pubblicazione scientifica…

CERIC

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[…] In this paper, the presence of micro-sized polystyrene fragments (m-PS) in the gut of specimens of the common Antarctic collembolan *Cryptopygus antarcticus* is documented for the first time, the fragments originating from a large item of PS foam found stranded on King George Island (South Shetland Islands). We combined an optimized digestion method with Fourier transform infrared microscopy (μ-FTIR) analysis, which has proved to be successful for the detection of trace amounts of plastic ingested in soil microarthropods. Plastics have therefore entered even some of the most remote soil food webs on the planet, with potential risks for the whole biota and ecosystems.

2. Material and methods

(a) Sampling

(b) Species identification and sample treatment

(c) Characterization by Fourier transform infrared microscopy

3. Results

4. Discussion

This study presents the first clear evidence of the ingestion of plastic material by a common Antarctic collembolan, going beyond previous findings and analytical constraints on this insect group and, more generally, soil-dwelling invertebrates [35,36].

[…]

The fact that one of the most abundant collembolans in remote Antarctic soils is ingesting microplastics implies that these anthropogenic materials have deeply entered the soil food web, will be redistributed through the soil profile and may or have already become an integral part of the biogeochemical cycles in soils. Future research should explore the ecosystem level consequences of this additional significant global change factor that humans have imposed on natural ecosystems.

Dalla pubblicazione scientifica…

Ethics. The sampling of plastic debris and associated microbiota has been conducted in the framework of the 'Plastic in the Antarctic environment' project (PNRA-14_00090), with the required authorization from the Italian National Antarctic Program.

Data accessibility. Further data are supplied as electronic supplemental information (one file, 'electronic supplementary material').

Authors' contributions. E.B. and I.C. coordinated the study and obtained financial support. E.B. conducted the sampling activities and sample treatment. E.R. and T.C. identified the collembolan species and reviewed its biology. G.B. and L.V. performed the FTIR analysis. All authors provided a significant input for the interpretation of the results obtained, drafted and revised the manuscript. All authors gave final approval for publication and agree to be held accountable for the work performed therein.

Competing interests. We declare we have no competing interests.

Funding. This work was funded by the Italian National Antarctic Program (project PNRA–14_00090) and the CERIC–ERIC Consortium for the access to experimental facilities and financial support (beamtime number–20192144).

Acknowledgements. The authors gratefully acknowledge Dr. A. Krupinski Emerenciano and Prof. J.R.M.C. da Silva (University of São Paulo, Brazil), the Brazilian Antarctic Program (PROANTAR) and the Chilean Antarctic Institute (INACH) for their support during the Antarctic expedition.

References

…al comunicato stampa

CERIC

Central European Research Infrastructure Consortium

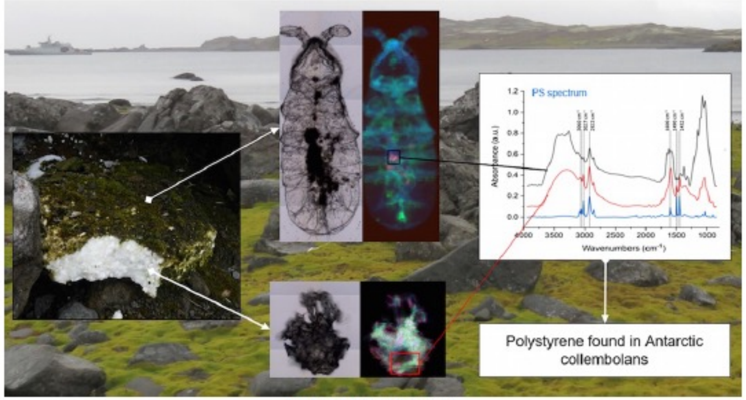
COMUNICATO STAMPA

TRIESTE, 24 giugno 2020

Ecosistemi a rischio in Antartide a causa delle microplastiche

Le prove in un recente studio su piccoli invertebrati del polo sud.

"Vi sono prove che le microplastiche abbiano raggiunto le regioni più remote del pianeta". Così si apre l'articolo pubblicato sulla rivista scientifica *Royal Society Biology Letters* del team di ricerca coordinato da Elisa Bergami e Ilaria Corsi dell'Università di Siena, che ha dato la prima evidenza di contaminazione da microplastiche in animali terrestri antartici.

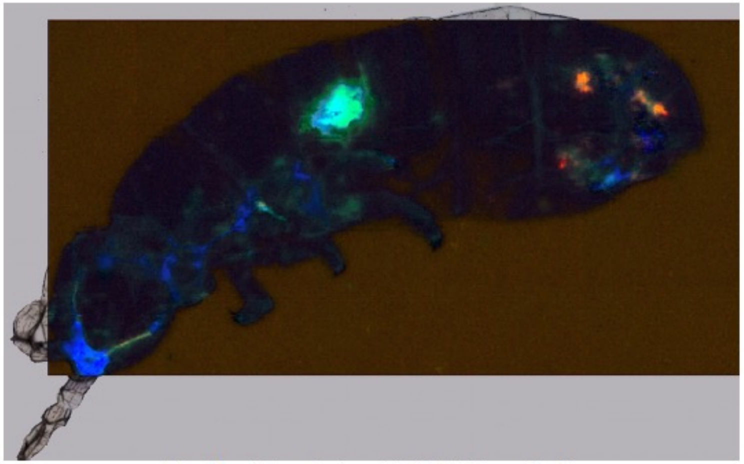


Sommario grafico dello studio

Prima di questa osservazione "vi erano ancora dubbi sulla presenza della plastica nelle reti alimentari terrestri antartiche" – continuano gli autori dello studio. Per trovare una risposta, i ricercatori hanno mosso i primi passi da un pezzo di polistirolo ritrovato nel 2016 sulle coste dell'isola antartica di re Giorgio (Shetland del Sud), ricoperto di alghe, muschi e licheni. A nutrirsi di questa microflora è un piccolo invertebrato lungo un paio di millimetri, il *Cryptopygus antarcticus* (del gruppo dei Collemboli, componente centrale della catena alimentare del suolo in tutte le aree del pianeta). Le analisi sugli esemplari di Collemboli rinvenuti sul materiale plastico – effettuate con la tecnologia di imaging con spettroscopia infrarossa presso Elettra Sincrotrone Trieste, struttura partner di CERIC-ERIC – hanno permesso di identificare la presenza di tracce di polistirolo nell'intestino di questi organismi superando le limitazioni attuali per l'analisi di microinvertebrati del suolo.

Le microplastiche possono anche trasportare contaminanti e agenti patogeni, con un potenziale dannoso per organismi come i Collemboli, e di conseguenza per altre specie della relativa rete alimentare. Studi di laboratorio su specie di Collemboli che abitano altre regioni del globo suggeriscono inoltre che l'esposizione a microplastiche possa provocare alterazioni nella loro crescita e riproduzione.

CERIC ERIC



Collembolo antartico analizzato con microFTIR (foto: Giovanni Birarda)

Considerata l'ampia presenza di *Cryptopygus antarcticus* nell'ambiente terrestre antartico, l'ingestione di microplastiche potrebbe contribuire alla loro diffusione lungo la catena alimentare nel polo sud, con potenziali rischi per l'intero ecosistema. Altri studi saranno necessari per meglio comprendere le possibili conseguenze ambientali dovute alla presenza di microplastiche, ormai penetrate profondamente nel terreno e nelle reti alimentari.

Lo studio è stato coordinato da Elisa Bergami e Ilaria Corsi dell'Università di Siena, con il prezioso contributo di Emilia Rota, sempre dell'Ateneo senese, Giovanni Birarda e Lisa Vaccari di ELETTRA Sincrotrone di Trieste e Tancredi Caruso dell'University College di Dublino.

La ricerca è stata effettuata nell'ambito di progetti finanziati dal programma nazionale di ricerca in Antartide (PNRA), con il supporto del programma antartico brasiliano (PROANTAR) e l'istituto antartico cileno (INACH). I ricercatori hanno beneficiato gratuitamente dell'accesso all'avanzata strumentazione del sincrotrone di Trieste grazie a uno dei bandi del consorzio centro-europeo di infrastrutture di ricerca, CERIC-ERIC.

CERIC-ERIC è un Consorzio di infrastrutture di ricerca (ERIC) che offre a ricercatori e industrie un unico punto di accesso a oltre 50 tecniche e laboratori in otto paesi dell'Europa centro-orientale, per la ricerca multidisciplinare a livello micro- e nano-metrico nei campi dei materiali avanzati, dei biomateriali e delle nanotecnologie.
L'accesso ai servizi di CERIC per la ricerca avviene tramite bandi internazionali che premiano i migliori progetti e che prevedono la pubblicazione dei risultati ottenuti. Nei laboratori di CERIC si possono analizzare e sintetizzare i materiali e si può indagarne la struttura combinando tecniche basate sull'uso di elettroni, ioni, neutroni e fotoni.

ARTICOLO ORIGINALE: https://royalsocietypublishing.org/doi/10.1098/rsbl.2020.0093

CARTELLA STAMPA: https://drive.ceric-eric.eu/d/e12ef0d4719d4fbeadbc/

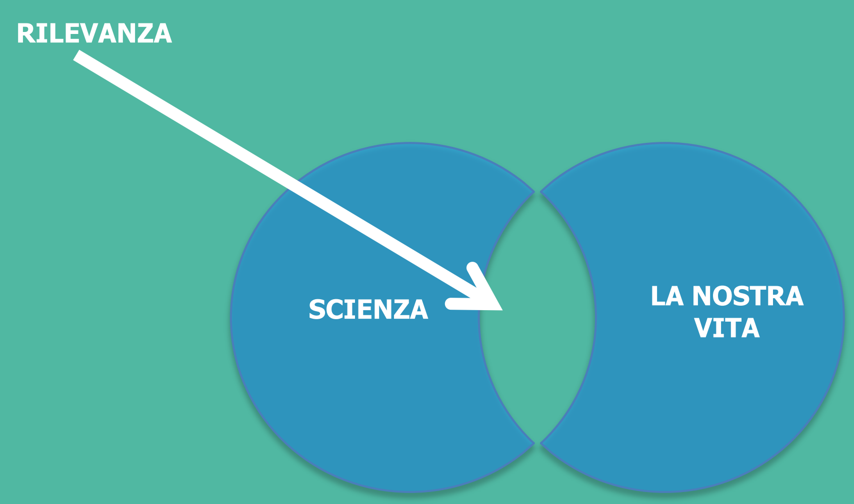
CONTATTI: CERIC Press Office: press@ceric-eric.eu
Nicoletta Carboni, +39 338 17 61 632 - +39 346 5434 361 / Davide Montesarchio, +39 334 90 24 929

Divulgazione scientifica

MAKE THINGS

AS SIMPLE AS POSSIBLE,

BUT NOT SIMPLER

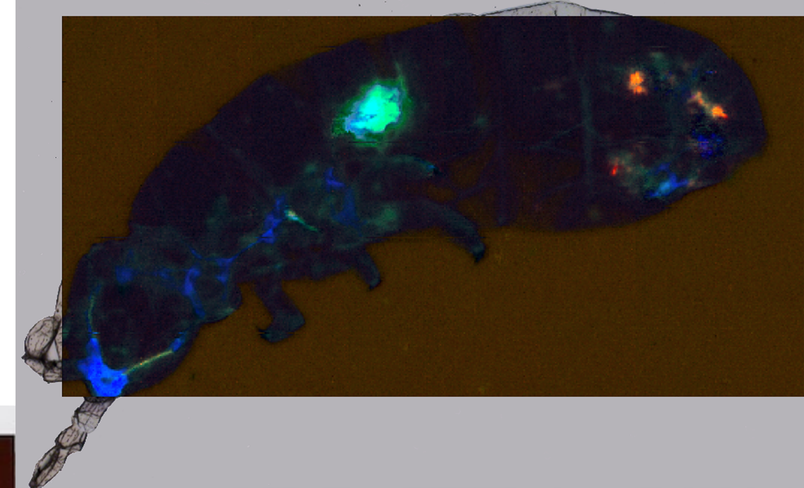


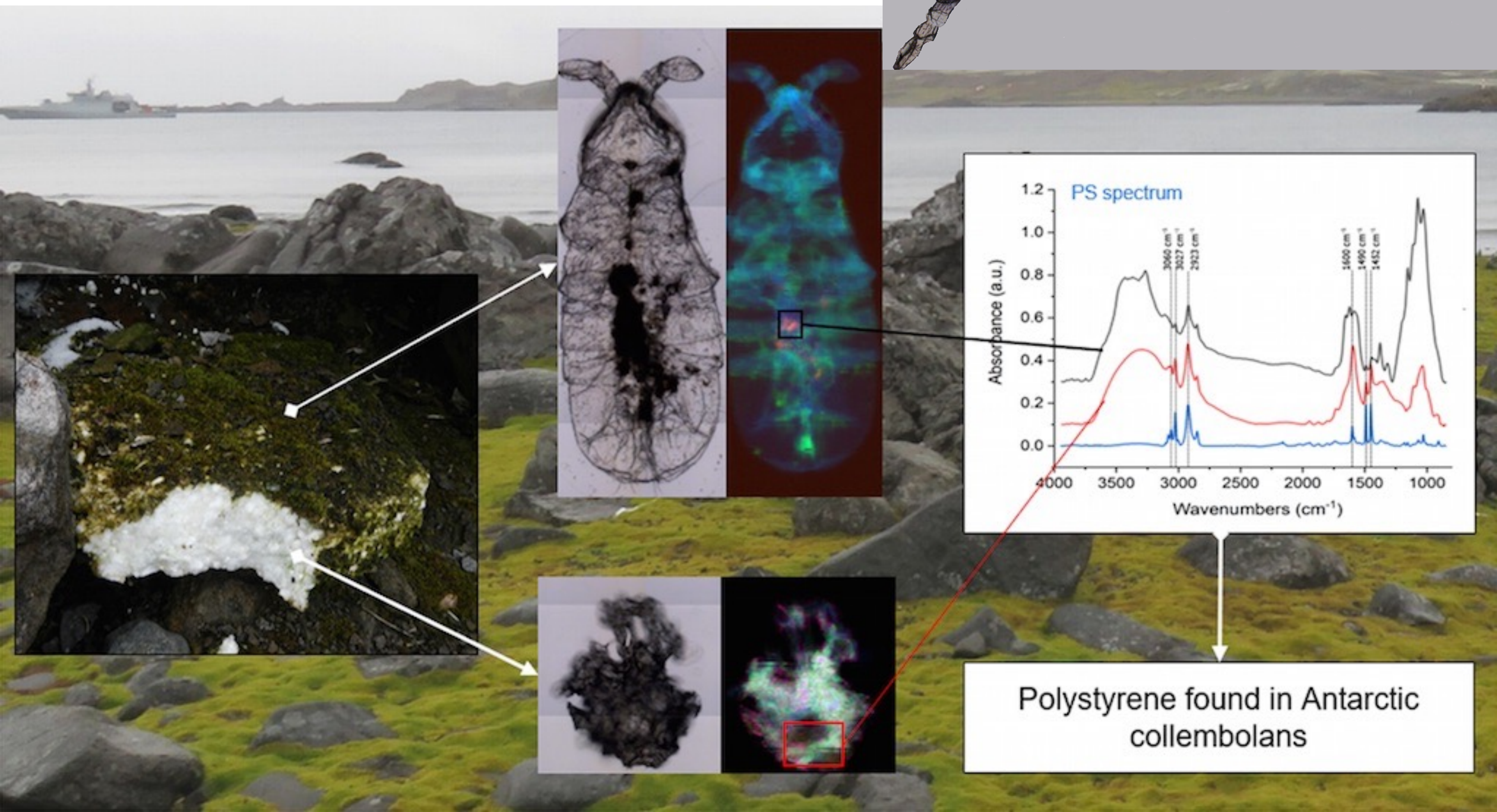
Marine Conservation Photographer of the year 2019 © Eduardo Acevedo/Upy 2019

Immagine dal documentario di Chris Jordan – ALBATROSS
North Pacific Ocean – Midway Atoll
https://vimeo.com/264508490

Dal Pacifico all’Antartide
Dalle plastiche alle microplastiche

Le immagini della ricerca





Video intervista CERIC

Link all’intervista completa su Youtube:
https://youtu.be/KUfWTyy44JQ

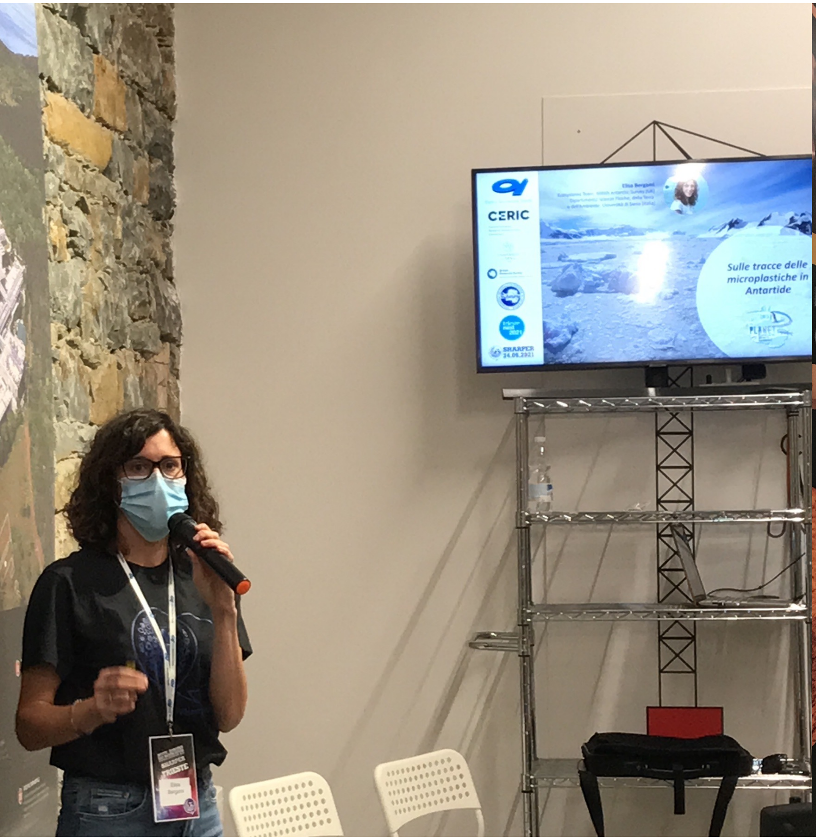
Interviste con la stampa
Programma RAI - RADAR

Link all'intervista completa su Youtube:
https://youtu.be/L-NAGqcOnEE

Eventi di divulgazione scientifica ESOF 2020

Link al video completo su Youtube: https://youtu.be/G-0Nzp8knoM

Eventi di divulgazione scientifica
Notte dei Ricercatori @ Trieste NEXT 2021



Fare notizia

La notizia costituisce una “rottura della normalità”, che riporta FATTI e non opinioni.

Alcuni principi guida per la redazione di notizie per la stampa:

ORIGINALITA’, SINGOLARITA’:

Es. “il cane morso dal padrone”

NOTIZIE INSOLITE

RILEVANZA (interesse e importanza per il proprio pubblico):

Es. mondiali di calcio, elezioni, catastrofi, scioperi, crisi, ecc.

VICINANZA del fatto

EVOLUZIONE del fatto (es. fatti di cronaca) su cui si costruisce una storia

ATTESA post-fatto (es. elezioni del papa, rapimenti, ecc.)

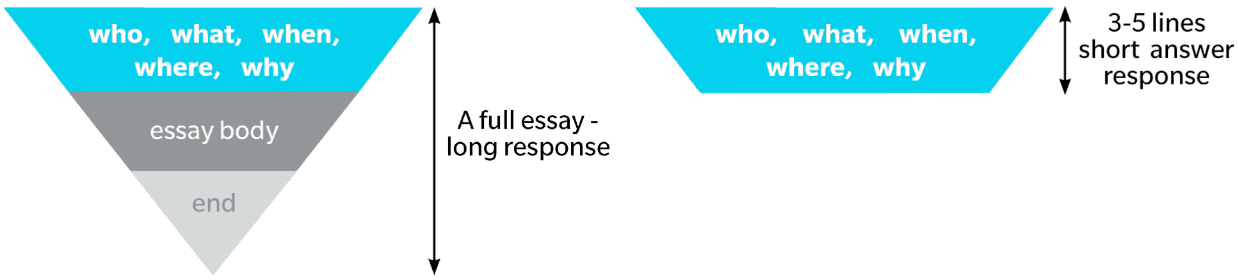
L’ESCLUSIVA, lo SCOOP

SENSAZIONALISMO

Altri punti da tenere a mente:
*Per chi è la notizia, *a chi interessa, *è il momento di divulgarla?

Elementi di un comunicato - 1

Nel mezzo del cammin di nostra vita mi ritrovai per una selva oscura ché la diritta via era smarrita…"



- **Titolo**
  - "Write it straight before you write it great!"
  - 8-10 parole
  - Includi parole chiave per SEO

- ***Sottotitolo***
  - Aggiungi parole chiave per SEO
  - Max. 20 parole / 2 righe
  - Serve a dare maggiore chiarezza all'argomento anticipato nel titolo
  - Carattere descrittivo

- ***Lead*** = inizio, o attacco, che contenga una sintesi e info più specifiche
  - E' come un breve sommario, o riassunto, che arriva dritto al punto. Serve a catturare l'attenzione del lettore. Spiega cosa e perché interessa ai lettori. Se relativo a un evento, inserire data e luogo.

Elementi di un comunicato - 2

- **Virgolettato** (di una persona importante nell'organizzazione, gruppo di ricerca, azienda…)
  - Aggiunge valore e credibilità alla notizia Possibilmente riporta le parole di un rappresentante importante dell'ente / azienda, ecc. – es. del presidente, amministratore delegato, principal investigator di una ricerca…che riconferma il messaggio centrale della notizia.
- **Trend tie-in**
  - (riferimento a trend o problematiche del momento per le quali quanto riportato nella notizia potrebbe fornire una soluzione)
- **Secondo virgolettato** (da parte di un partner, un utente / cliente, un investitore…)
- **Call to action**
  - un'istruzione per chi legge volta a provocare una risposta immediata
- **Boiler plate**
  - info sull'ente, azienda…positioning statement
- **Info di contatto**

TIPS

- ✧ La notizia deve stare nelle prime righe
- ✧ Evita info istituzionali all'inizio
- ✧ Stile riconoscibile, coerente
- ✧ Struttura "a cipolla"
- ✧ Includere immagini, numeri, grafici…
- ✧ NON troppo lungo, tecnico, accademico, auto-referenziale, didattico

Comunicato stampa - tempistiche

- I comunicati devono arrivare in redazione in mattinata o nel primissimo pomeriggio. Possono arrivare alle otto/nove di sera solo se hanno una priorità assoluta.

- L'**embargo**: consiste nel chiedere a testate e agenzie di non pubblicare o diffondere la notizia prima di una certa ora e data indicata alla testa del comunicato. È utilizzato dalle riviste scientifiche per anticipare articoli di imminente pubblicazione

- Se si promuove un evento, inviare un "save the date" qualche giorno prima della data dell'evento

- Mailing list giornalisti: selezionare solo contatti potenzialmente interessati

- Contattare le redazioni telefonicamente

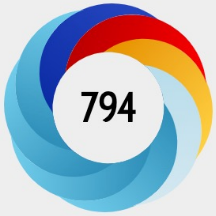
- Insieme al comunicato, includere una cartella stampa o "press kit"

Press kit


How To Create Impactful Press Kits That Work
PRESS RELEASE
The Press Release
A Brief Letter
Product Samples
NEWS
Past Press Coverage
Hi-Res Images on a Flash Drive
Company Backgrounder
Fact Sheet
A Brochure
Executive Bios
FAQ
Quote Sheet and FAQ
the balance
Nicoletta Carboni

Monitoraggio dei risultati

Altmetric Details Page



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In the top 5% of all research outputs scored by Altmetric

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- **75** news outlets
- **7** blogs
- **211** tweeters
- **1** Facebook page
- **3** Redditors

Readers on

- **52** Mendeley

Tools

- Open in a new tab

SUMMARY | News | Blogs | Twitter | Facebook | Reddit | Misc.

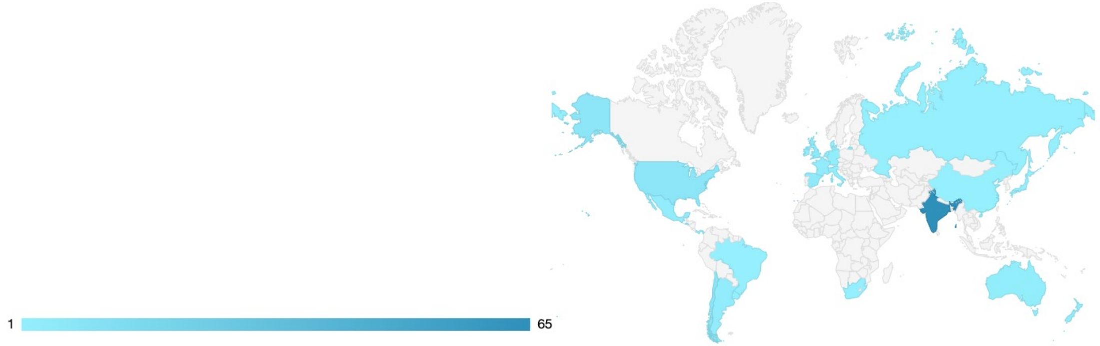
Title	Plastics everywhere: first evidence of polystyrene fragments inside the common Antarctic collembolan Cryptopygus antarcticus
Published in	Biology Letters, June 2020
DOI	10.1098/rsbl.2020.0093
Pubmed ID	32574531
Authors	Elisa Bergami, Emilia Rota, Tancredi Caruso, Giovanni Birarda, Lisa Vaccari, Ilaria Corsi

View on publisher site

Alert me about new mentions

TWITTER DEMOGRAPHICS | MENDELEY READERS | ATTENTION SCORE IN CONTEXT

The data shown below were collected from the profiles of **211** tweeters who shared this research output. Click here to find out more about how the information was compiled.



Geographical breakdown

Country	Count	As %
India	65	31%
United States	7	3%
Chile	7	3%
Spain	5	2%
United Kingdom	4	2%
Mexico	3	1%
France	3	1%
Ireland	3	1%
Argentina	3	1%
Other	20	9%

Demographic breakdown

Type	Count	As %
Members of the public	175	83%
Scientists	25	12%
Science communicators (journalists, bloggers, editors)	7	3%
Practitioners (doctors, other healthcare professionals)	4	2%

Citizen Science

BACKGROUND INFO:

PLASTIC PIRATES – GO EUROPE!

Plastic Pirates – Go Europe! is a joint citizen science campaign by the German Federal Ministry of Education and Research (BMBF) in collaboration with the Portuguese Ministry of Science, Technology and Higher Education and the Slovenian Ministry of Education, Science and Sport. The campaign is taking place in all three countries from 2020 to 2021 as part of the trio presidency of the EU Council. The goals of the campaign are to strengthen scientific collaboration in Europe, promote the level of dedication among citizen scientists and to raise awareness and consciousness for the environment. The joint project of the three countries demonstrates how citizens in Europe can work together to achieve common goals. In the years 2020 and 2021, pupils, teachers and scientists will collaborate to identify microplastic in rivers and their estuaries and contribute to a better understanding of environmental problems. The Plastic Pirates campaign was first developed in 2016 in Germany by the Kiel Science Factory and partners with support from the BMBF for the Science Year 2016*17 – Seas and Oceans and, since 2018, will be continued within the framework of the research focus 'Plastics in the Environment'.

You can find information about the Plastic Pirates at plastic-pirates.eu/en.

Booklet: https://www.plastic-pirates.eu/sites/default/files/document/2020-08/PPEU_Aktionsheft_EN_webRZ.pdf

Articolo scientifico con i primi risultati ottenuti dai dati raccolti (2016-2017)
https://doi.org/10.1016/j.envpol.2018.11.025

WORKING LIKE SCIENTISTS

CERIC

Central European
Research Infrastructure
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Grazie

Nicoletta Carboni
nicoletta.carboni@ceric-eric.eu