UFMG
UNIVERSIDADE FEDERAL DE MINAS GERAIS

inct
ETEs Sustentáveis

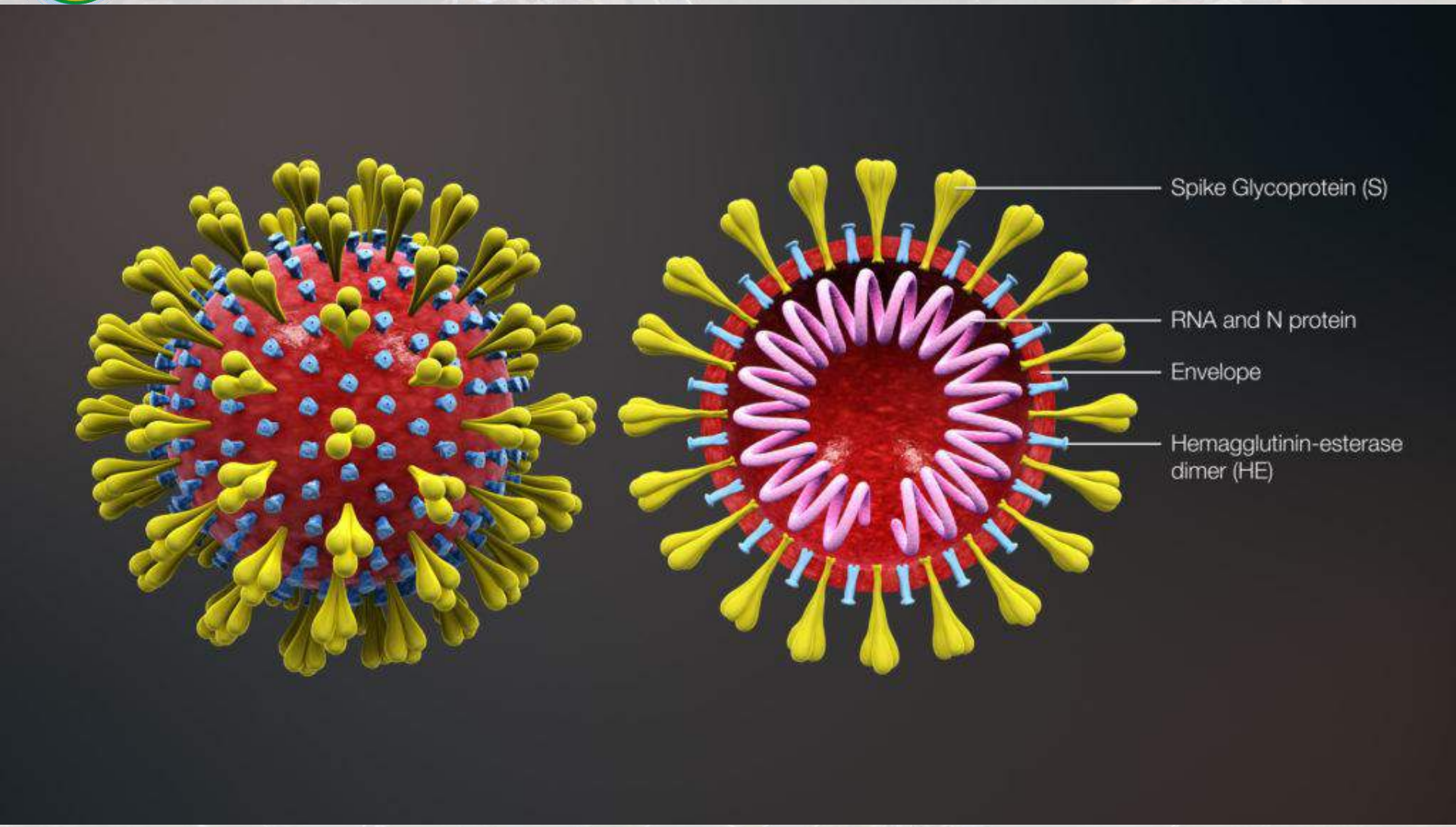
Webinar ABES - CTTE

O novo coronavirus e os sistemas de esgotamento sanitário

Prof. César Mota

Departamento de Engenharia Sanitária e Ambiental - Universidade Federal de Minas Gerais
Instituto Nacional de Ciência e Tecnologia em Estações Sustentáveis de Tratamento de Esgoto

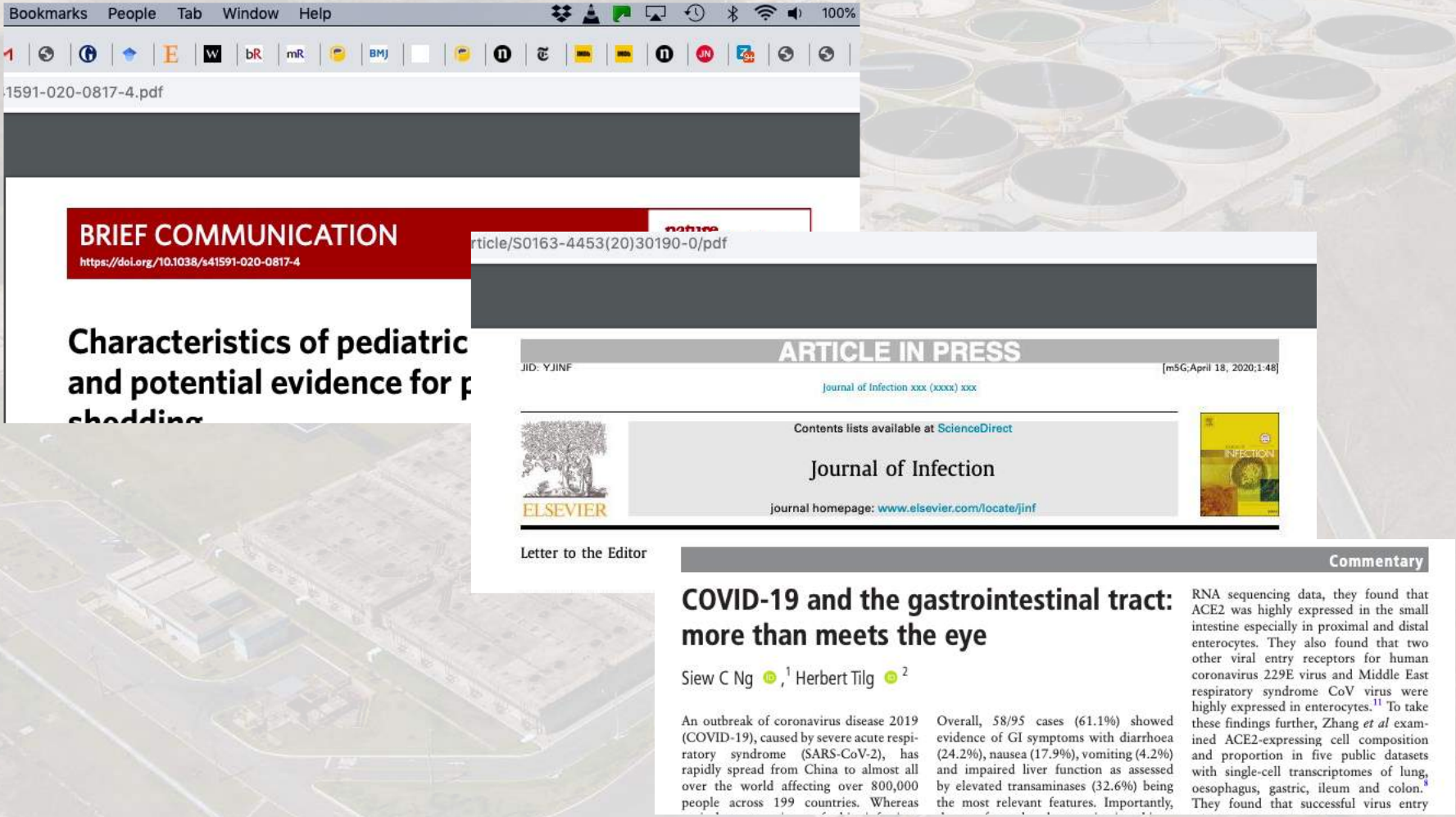
Como é o novo coronavirus?



3D medical animation still shot showing the structure of a coronavirus. wikipedia, CC BY-SA

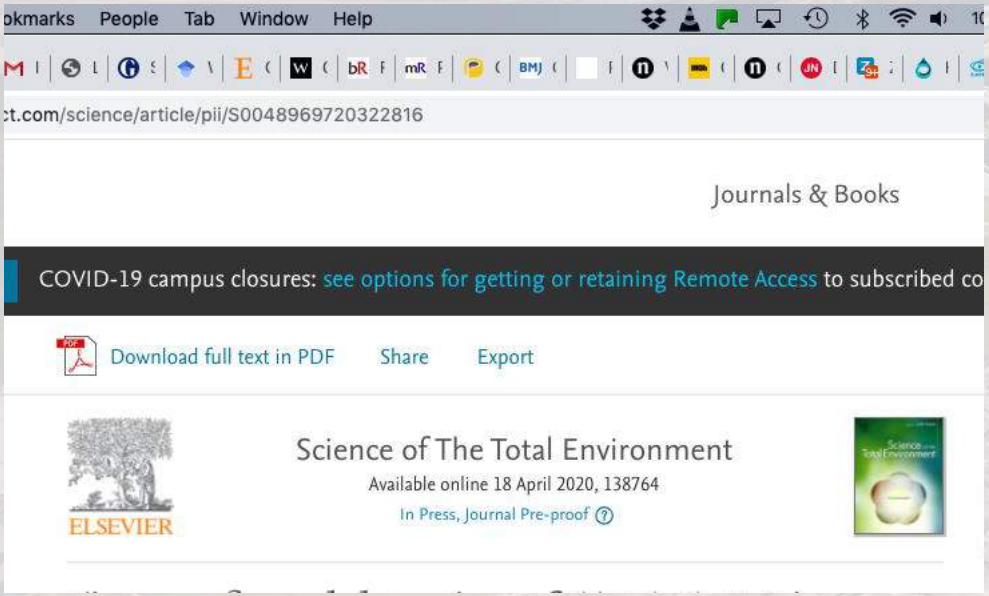
Covid-19 e o esgoto: o que se sabe até agora...

– RNA viral encontrado em fezes



Covid-19 e o esgoto: o que se sabe até agora...

– RNA viral detectado em esgoto


okmarks People Tab Window Help

t.com/science/article/pii/S0048969720322816

Journals & Books

COVID-19 campus closures: see options for getting or retaining Remote Access to subscribed co

Download full text in PDF Share Export

ELSEVIER

Science of The Total Environment

Available online 18 April 2020, 138764

In Press, Journal Pre-proof

medRxiv

THE PREPRINT SERVER FOR HEALTH SCIENCES

CSH Spring Harbor Laboratory BMJ Yale

Search

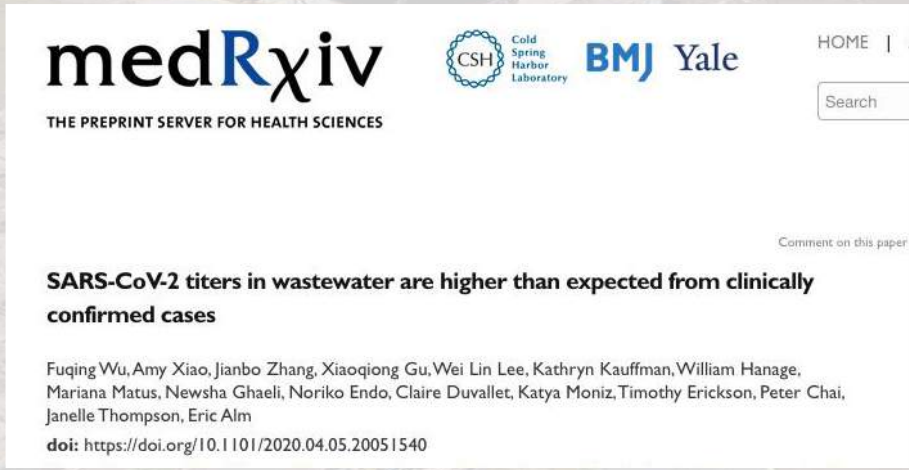
Comment on this paper

Time course quantitative detection of SARS-CoV-2 in Parisian wastewaters correlates with COVID-19 confirmed cases

Sebastien Wurtzer, Vincent Marechal, Jean-Marie Mouchel, Laurent Moulin

doi: https://doi.org/10.1101/2020.04.12.20062679

This article is a preprint and has not been peer-reviewed [what does this mean?]. It


medRxiv

THE PREPRINT SERVER FOR HEALTH SCIENCES

CSH Cold Spring Harbor Laboratory BMJ Yale

HOME |

Search

Comment on this paper

SARS-CoV-2 titers in wastewater are higher than expected from clinically confirmed cases

Fuqing Wu, Amy Xiao, Jianbo Zhang, Xiaoqiong Gu, Wei Lin Lee, Kathryn Kauffman, William Hanage, Mariana Matus, Newsha Ghaeli, Noriko Endo, Claire Duvallet, Katya Moniz, Timothy Erickson, Peter Chai, Janelle Thompson, Eric Alm

doi: https://doi.org/10.1101/2020.04.05.20051540

medRxiv

THE PREPRINT SERVER FOR HEALTH SCIENCES

CSH Cold Spring Harbor Laboratory BMJ Yale

HOME |

Search

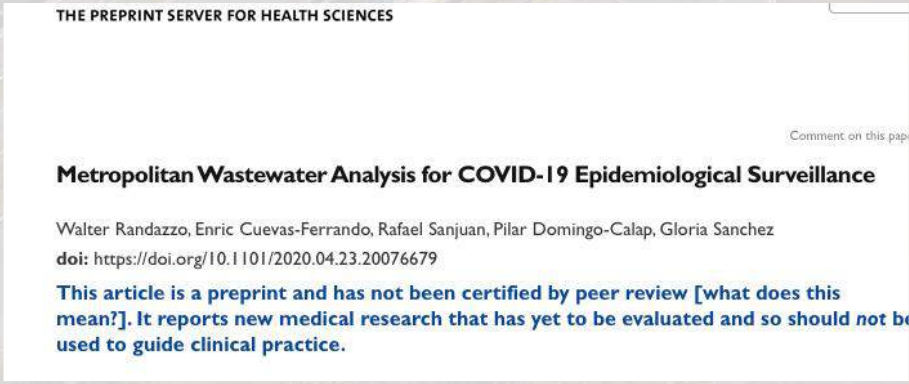
Comment on this paper

Presence of SARS-Coronavirus-2 in sewage

Gertjan Medema, Leo Heijnen, Goffe Elsinga, Ronald Italiaander, Anke Brouwer

doi: https://doi.org/10.1101/2020.03.29.20045880

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should *not* be used to


THE PREPRINT SERVER FOR HEALTH SCIENCES

Comment on this pap

Metropolitan Wastewater Analysis for COVID-19 Epidemiological Surveillance

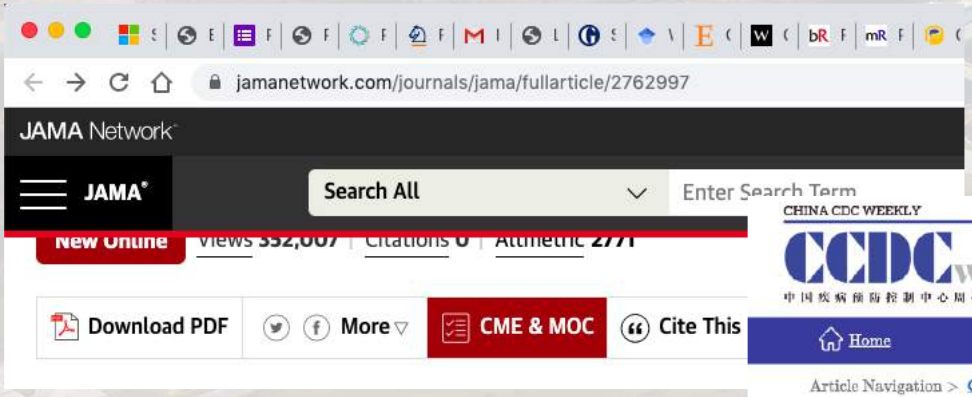
Walter Randazzo, Enric Cuevas-Ferrando, Rafael Sanjuan, Pilar Domingo-Calap, Gloria Sanchez

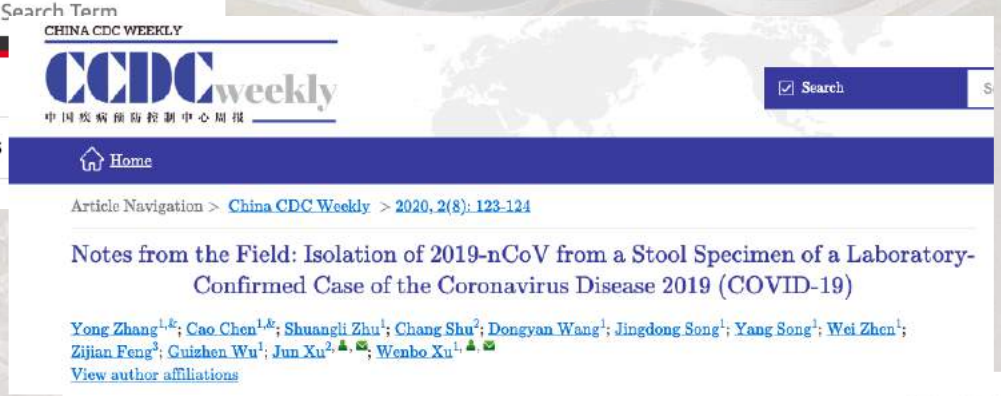
doi: https://doi.org/10.1101/2020.04.23.20076679

This article is a preprint and has not been certified by peer review [what does this mean?]. It reports new medical research that has yet to be evaluated and so should *not* be used to guide clinical practice.

Covid-19 e o esgoto: o que se sabe até agora...

– Vírus viável isolado a partir de fezes e urina





Transmissão feco-oral?

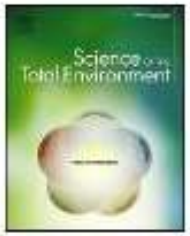
– **Transmissão feco-oral?**

Science of the Total Environment 729 (2020) 138919

Contents lists available at ScienceDirect

Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv



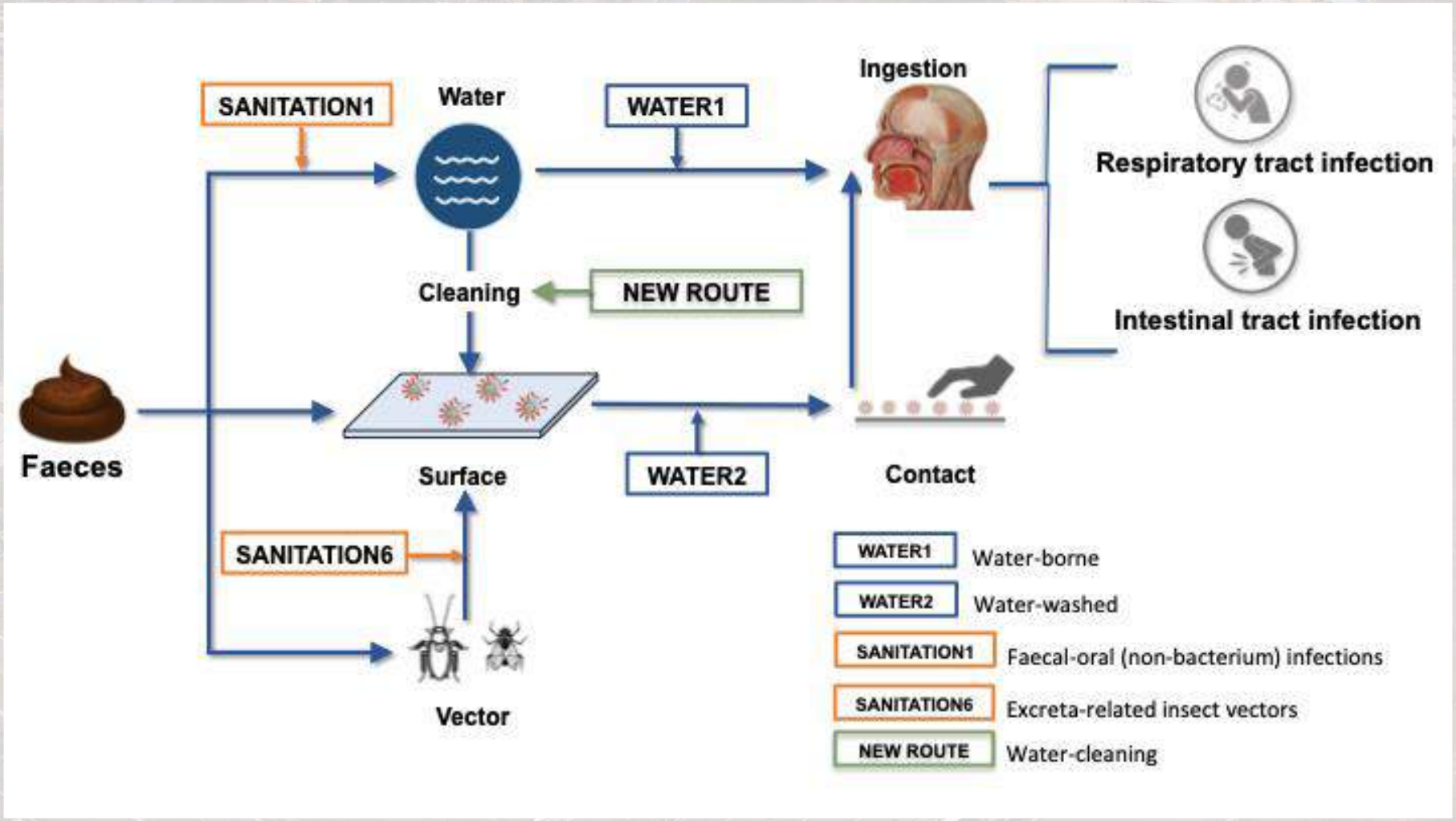
Short Communication

COVID-19 faecal-oral transmission: Are we asking the right questions?

Léo Heller [a,*], César R. Mota [b], Dirceu B. Greco [c]

[a] René Rachou Institute, Oswaldo Cruz Foundation, Av. Augusto de Lima, 1715, Belo Horizonte 30190-002, Brazil
[b] Department of Sanitary and Environmental Engineering, Federal University of Minas Gerais, Brazil
[c] Faculty of Medicine, Federal University of Minas Gerais, Av. Prof. Alfredo Balena, 190, Belo Horizonte 30130-100, Brazil

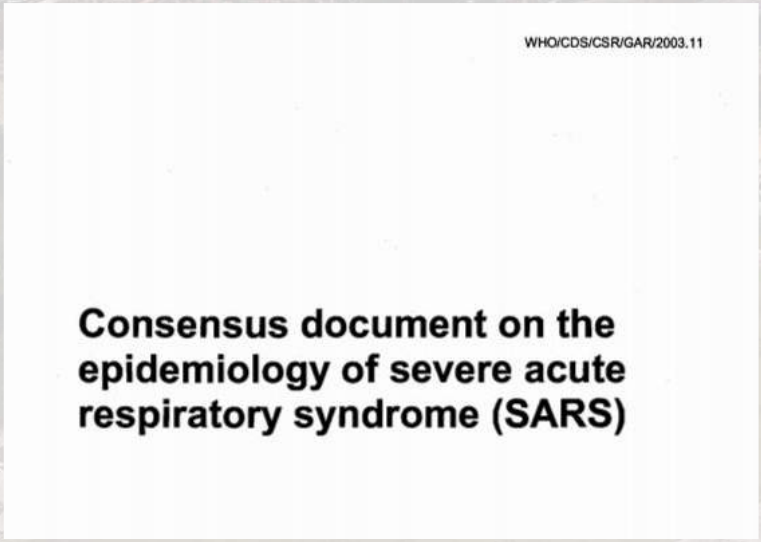
Transmissão feco-oral?



Artigos que confirmam transmissão feco-oral?

NENHUM

Transmissão feco-nasal?


WHO/CDS/CSR/GAR/2003.11

Consensus document on the epidemiology of severe acute respiratory syndrome (SARS)

WHO Consensus document on the epidemiology of severe acute respiratory syndrome (SARS). World Health Organization, 2003
https://apps.who.int/iris/handle/10665/70863

THE LANCET
Global Health

CORRESPONDENCE | VOLUME 8, ISSUE 5, E643, MAY 01, 2020

COVID-19: mitigating transmission via wastewater plumbing systems

Michael Gormley • Thomas J Aspray • David A Kelly

Open Access • Published: March 23, 2020 • DOI: https://doi.org/10.1016/S2214-109X(20)30112-1

O papel do esgoto na sociedade

- 1840s: fonte de doenças
- 2000s: fonte de doenças + recursos
- 2010s: fonte de doenças + recursos + ferramenta de vigilância sanitária/epidemiológica

O esgoto como ferramenta de vigilância epidemiológica

SUPPLEMENT ARTICLE

Environmental Surveillance for Polioviruses in the Global Polio Eradication Initiative

Humayun Asghar,[1] Ousmane M. Diop,[3] Goitom
Adefunke O. Akande,[5] Eman Al Maamoun,[2] Sol
M. Steve Oberste,[5] and Sara A. Lowther[5]

[1]World Health Organization, Eastern Mediterranean Region

AEM
Journals.ASM.org

Detection of Pathogenic Viruses in Sewage Provided Early Warnings of Hepatitis A Virus and Norovirus Outbreaks

Maria Hellmér,[a] Nicklas Paxéus,[b] Lars Magnius,[c] Lucica Enache,[b] Bi
Heléne Norder[a,c]

Department of Clinical Microbiology, Sahlgrenska Academy, Gothenburg University,
Stockholm, Sweden[c]; Department of Communicable Disease Control, Västra Götalan

Environment International 139 (2020) 105689

Contents lists available at ScienceDirect

Environment International

journal homepage: www.elsevier.com/locate/envint

Future perspectives of wastewater-based epidemiology: Monitoring infectious disease spread and resistance to the community level

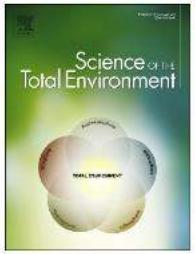
Natalie Sims, Barbara Kasprzyk-Hordern*

Department of Chemistry, University of Bath, Bath BA2 7AY, UK
Centre for Doctoral Training in Sustainable Chemical Technologies, University of Bath, Bath BA2 7AY, UK

Journal Pre-proof

Computational analysis of SARS-CoV-2/COVID-19 surveillance by wastewater-based epidemiology locally and globally: Feasibility, economy, opportunities and challenges

Olga E. Hart, Rolf U. Halden



Com base no monitoramento do esgoto, em teoria, um indivíduo infectado pode ser detectado dentre uma população de 100 a 2 milhões de habitantes

Detecção e quantificação do novo coronavirus no esgoto de BH e Contagem

Coordenação: Profa. Juliana Calabria

Sub-coordenação: Prof. Carlos Chernicharo e Prof. Cesar Mota

- Amostragem em vários pontos do sistema de esgotamento sanitário de BH e contagem
- Quantificação do RNA viral no laboratório de microbiologia do DESA/UFMG
- Cruzamento com dados da SES e construção de mapas da circulação do vírus em diferentes áreas
- Apoio na tomada de decisão

WEBINAR - 3ª semana de maio 2020

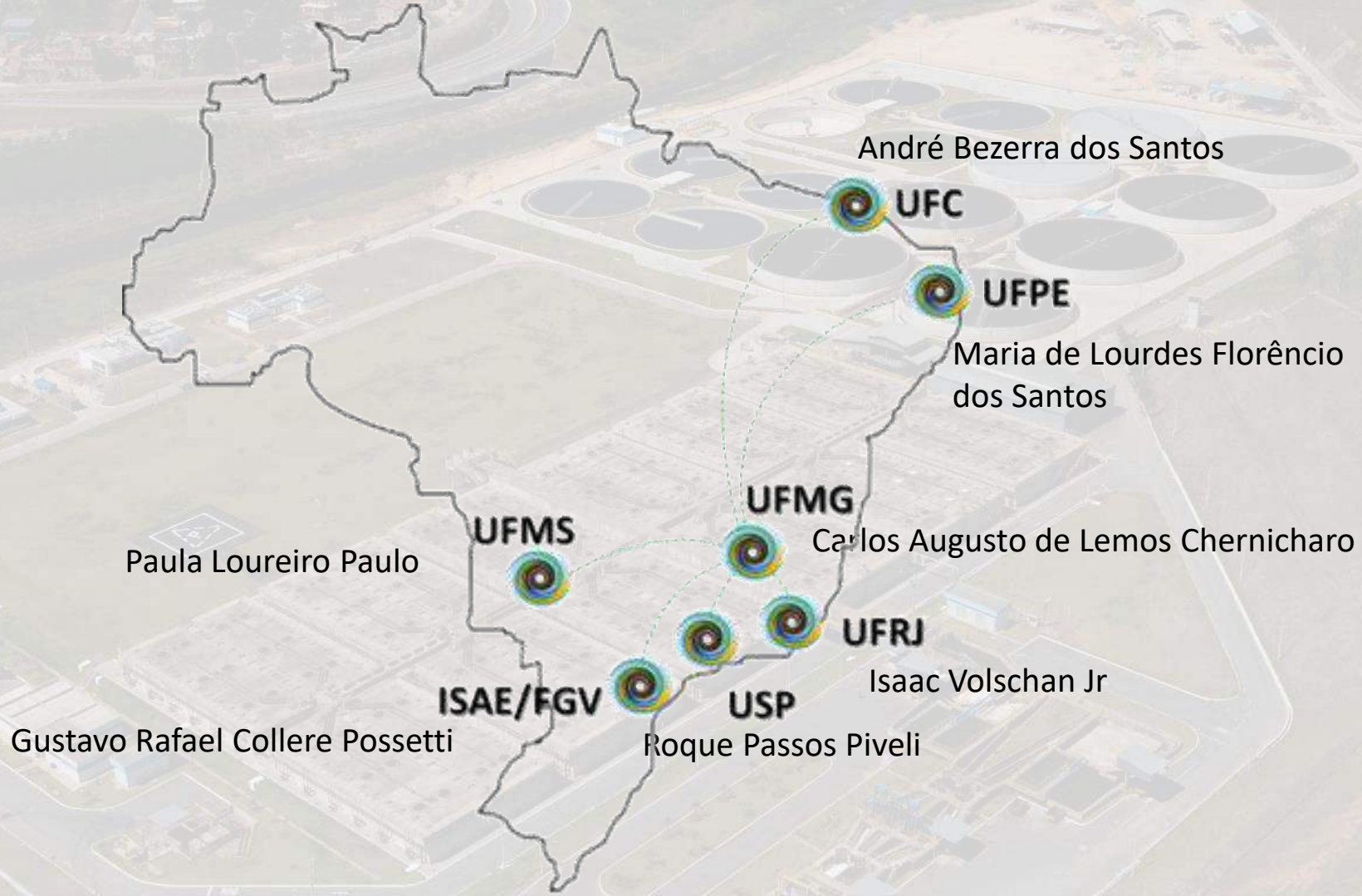
COVID-19: Monitoramento do esgoto como ferramenta de vigilância epidemiológica

MONITORAMENTO
COVID ESGOTOS

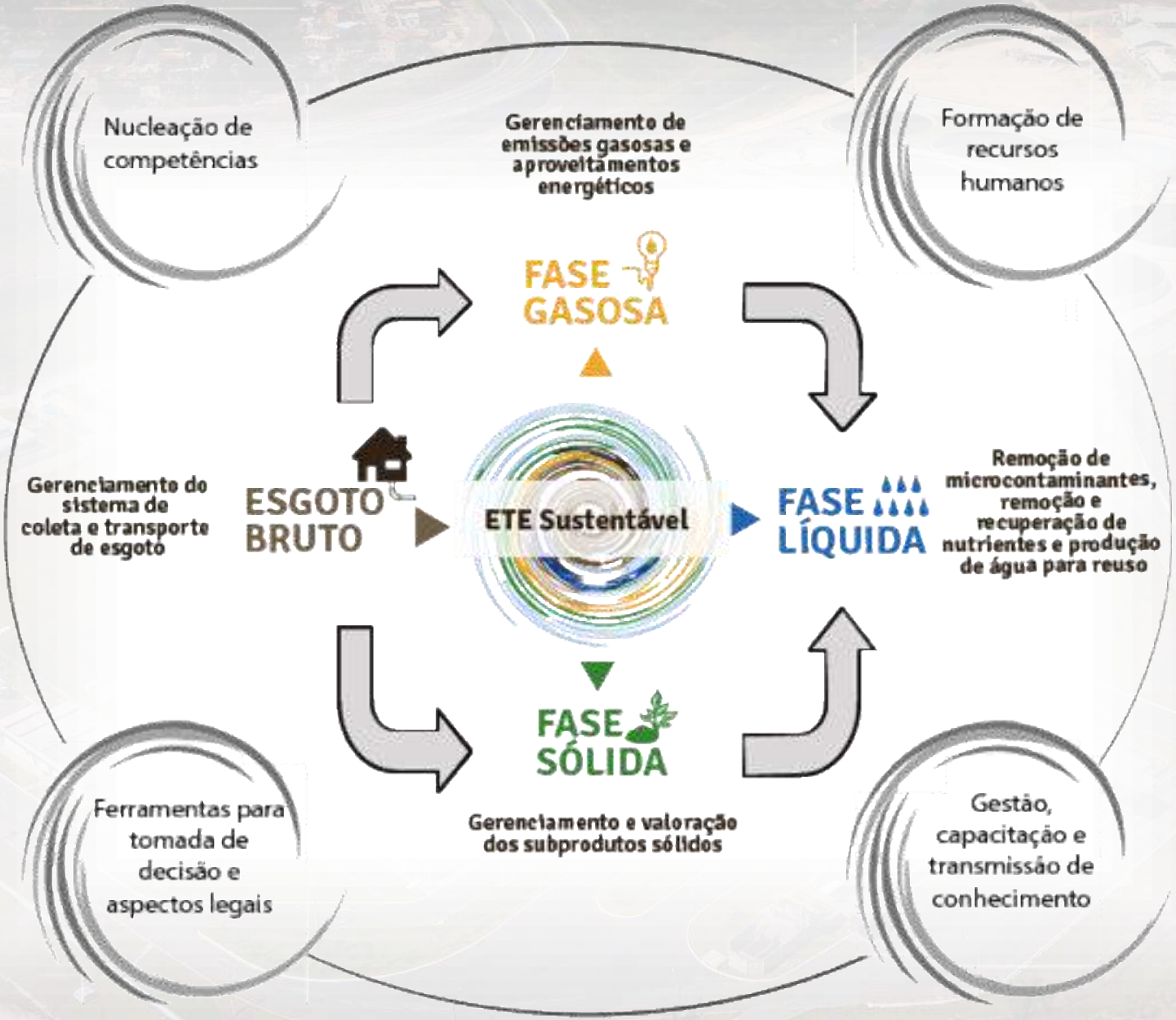
O Instituto Nacional de Ciência e Tecnologia em ETEs Sustentáveis

- INCT ETEs Sustentáveis -

Instituições que compõem o INCT- ETEs Sustentáveis



Pilares Estratégicos



Obrigado!

inct.etes.sustentaveis@gmail.com