

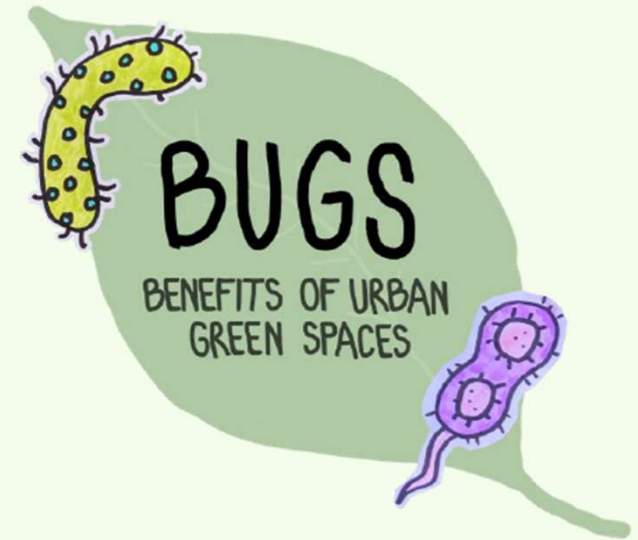
middelheim
museum

BUGS@School

Noa De Schepper



WELCOME TO



CITIZEN SCIENCE FOR HEALTHIER CITIES



PhD student
Agustina Santullo



PhD student
Noa De Schepper

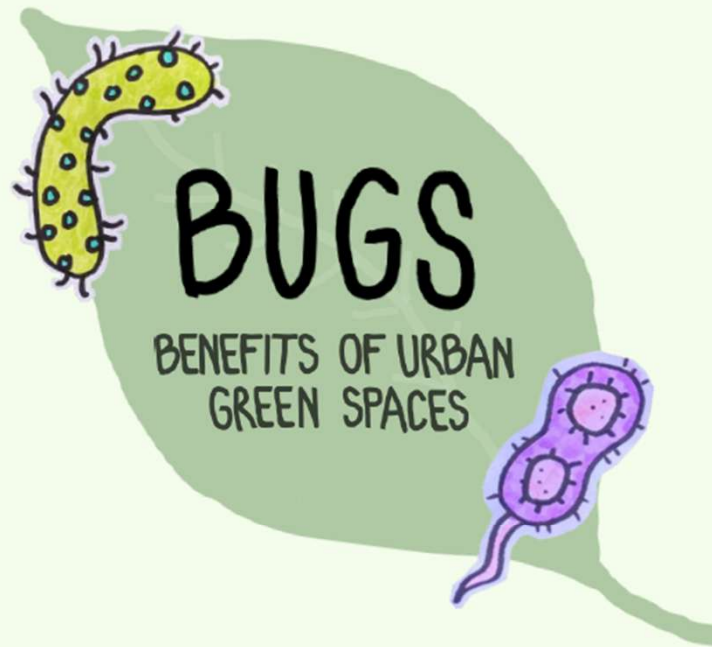


Principal investigator:
Prof. Dr. ir. Irina Spacova

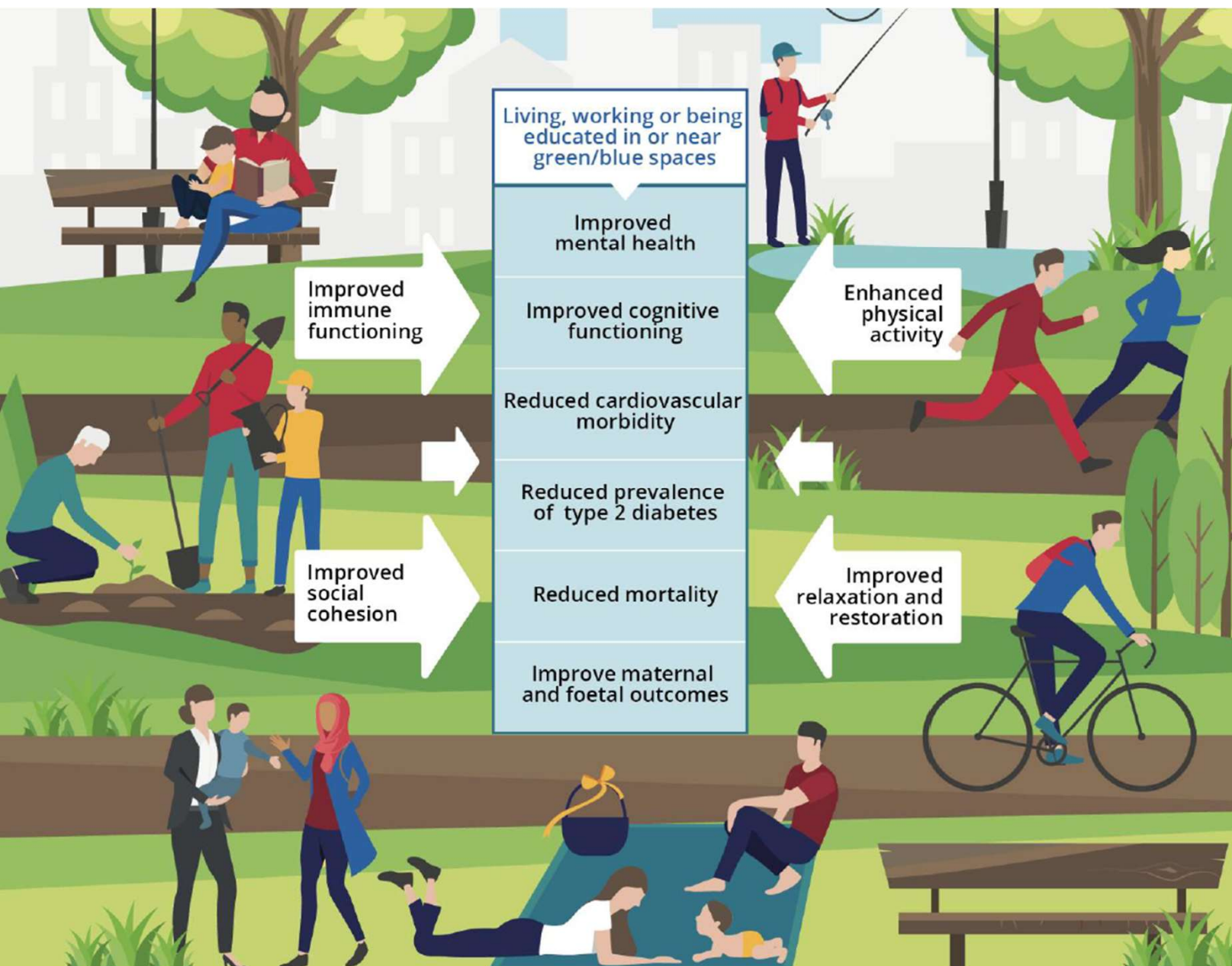


Co-investigator:
Prof. Dr. ir. Roeland Samson





THE CITIZEN SCIENCE PROJECT
INVESTIGATING THE HEALTH BENEFITS
OF URBAN GREEN SPACES AND THEIR
MICROBES

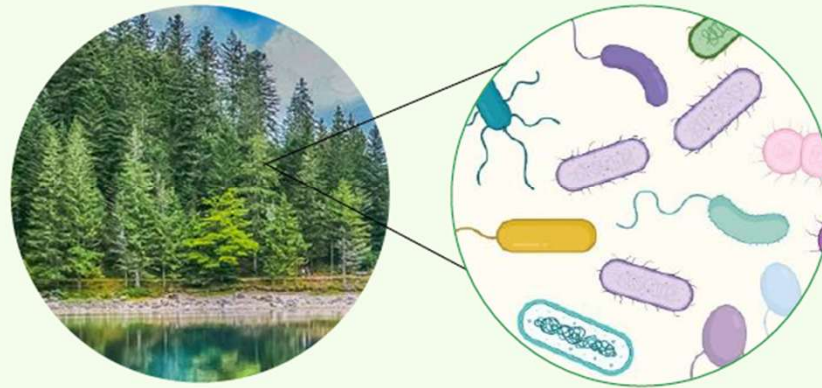


"URBAN GREEN SPACES [...] HAVE THE POTENTIAL TO ADDRESS PROBLEMS 'UPSTREAM', IN A PREVENTATIVE WAY - WHICH IS CONSIDERED A MORE EFFECTIVE APPROACH THAN SIMPLY DEALING WITH THE 'DOWNSTREAM' CONSEQUENCES OF ILL HEALTH."

WORLD HEALTH ORGANIZATION
(2016)
EUROPEAN ENVIRONMENT AGENCY
(2020)

MICROORGANISMS ARE A HIDDEN LAYER OF BIODIVERSITY

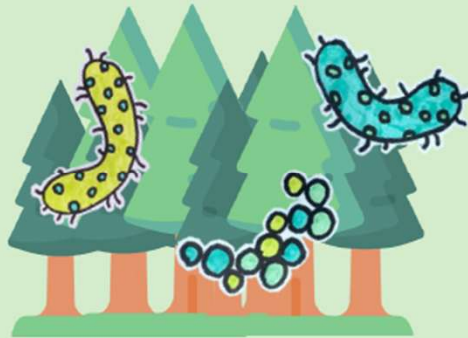
BIODIVERSITY AT THE
MACRO LEVEL



BIODIVERSITY AT THE
MICRO LEVEL

THAT STRONGLY CONTRIBUTES TO THE (HEALTH)
BENEFITS OF URBAN GREEN SPACES

BIODIVERSITY HYPOTHESIS



DIVERSITY OF
MICROORGANISMS THAT
WE CO-EVOLVED WITH



WELL-TRAINED AND
REGULATED IMMUNE
SYSTEM

BUGS@SCHOOL: A CHILD-CENTERED APPROACH TO MICROBIAL EXPOSURE IN URBAN GREEN SPACES

RESEARCH QUESTIONS

- 1 DOES PARK ACTIVITY AFFECT EXPOSURE TO BENEFICIAL MICROORGANISMS?
- 2 WHICH PARK ACTIVITIES DO CHILDREN CONSIDER MEANINGFUL FOR EXPLORING MICROBIAL EXPOSURE?
- 3 WHAT (SENSORY) ELEMENTS DRAW CHILDREN TO INTERACT WITH URBAN NATURE?

CHILDREN'S
EXPERIENCES &
CO-CREATED
EXPERIMENTAL
DESIGN

SELF-SAMPLING
AND PLAYING IN
THE PARK

LAB VISIT,
RESULT SHARING
& FEEDBACK



MIND MAPS, DRAWING, AND CHOICE OF
ACTIVITIES TO TEST

22 CHILDREN AGED
8 TO 11 YEARS OLD,
DISTRIBUTED IN 5
FOCUS GROUPS

SENSORY AND EMOTIONAL EXPERIENCES: KEY THEMES



BIRDS - THE SENSORY STANDOUT

APPRECIATED ACROSS ALL GROUPS (5/5),
WITH A FOCUS ON THEIR SOUNDS



POSITIVE SENSORY TRIGGERS

SMELLS (WET GRASS, RAIN, FLOWERS),
BIRD SOUNDS, SUN, WIND (5/5)



NEGATIVE SENSORY TRIGGERS

SMELLS (POOP), LOUD AND SCARY
SOUNDS, STINGING NETTLES (2/5)



HAPPINESS - THE COMMON FEELING

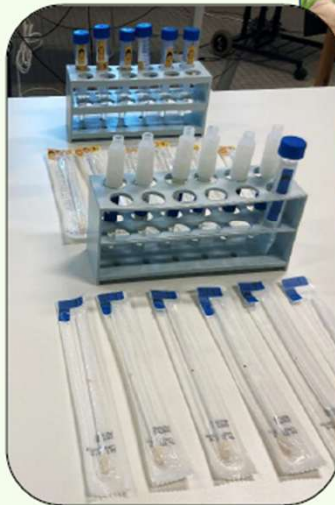
MENTIONED BY ALL GROUPS, OFTEN
PAIRED WITH CALMNESS AND FREEDOM

CHILDREN'S
EXPERIENCES &
CO-CREATED
EXPERIMENTAL
DESIGN

SELF-SAMPLING
AND PLAYING IN
THE PARK

LAB VISIT,
RESULT SHARING
& FEEDBACK

1. MICROBIOME
SELF-SAMPLING
USING AN
OPTIMISED KIT



2. TESTING OF
CHOSEN ACTIVITIES



3. MICROBIOME
SELF-SAMPLING

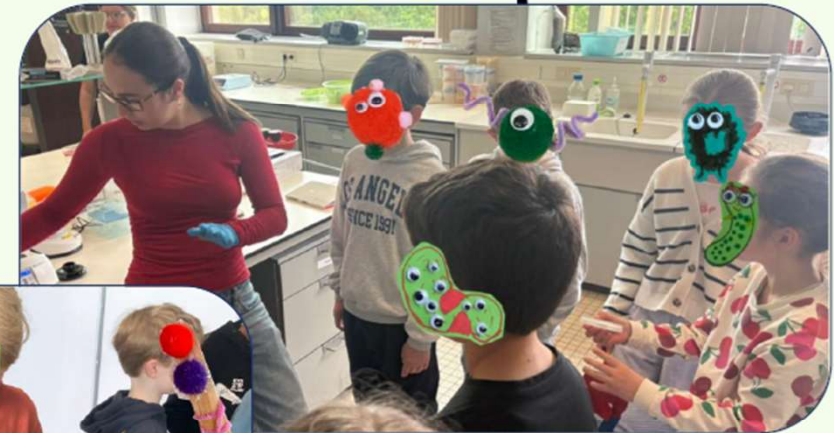


CHILDREN'S
EXPERIENCES &
CO-CREATED
EXPERIMENTAL
DESIGN

SELF-SAMPLING
AND PLAYING IN
THE PARK

LAB VISIT,
RESULT SHARING
& FEEDBACK

PERSONALISED
MICROBIOME
PICTURE FOR
EACH CHILD



USING COPAN SMART ENAT
SWABS AND CORIOLIS μ
MICROBIAL AIR SAMPLER