

# Sister Cities

## Zadar, Croatia – Milwaukee, USA

Water Health Pilot Program

June 18, 2019



# Zadar - Milwaukee

## Signing Ceremony May 11, 2015

- Common Council, Milwaukee
  - Chair, Sister Cities Committee, Ald. Joe Davis, Sr.
  - President Common Council, Michael Murphy
  - Mayor, Tom Barrett
- Federation of Croatian Societies, Milwaukee County
  - President, John Braovac
  - Government Relations MillerCoors, Paul Lucas
  - Consul General of Croatia, Dr. Jelena Grčić Polić
  - Hospitality, American European Foods, Pelicarić Catering
  - Music, Milwaukee Croatian Tamburitzans (MCT)



# Sister Cities

## Zadar, Croatia – Milwaukee, USA

Sister City International, founded by Pres. Eisenhower, 1956

- 1) Arts & Culture
- 2) Youth & Education
- 3) Business & Trade
- 4) Community development & Technical exchange



# Sister Cities Zadar ~ Milwaukee

**Water Centric\***

**\*Social \*Economic  
\*Recreational Importance**



The Zadar Peninsula, Zadar, Croatia. © iStock.com/[mbrna](#)



The city of Milwaukee, Wisconsin. © iStock.com/[Ron Thomas](#)

<https://www.total-croatia.com/zadar/>

<https://city.milwaukee.gov/bbc/participants/Global-Water-Center>

# Precautionary Principle

Water Health

Middle Schools

Zadar - Milwaukee

# Sister Cities Zadar - Milwaukee

## The Precautionary Principle in Environmental Science

David Kriebel, *et al* Env. Health Perspectives, VOULME 109, number 9, September 2001

“when an activity raises threats of harm to human health or the environment, PRECAUTIONARY measures should be taken even if some cause and effect relationships are not fully established scientifically.”

Four components of the principle:

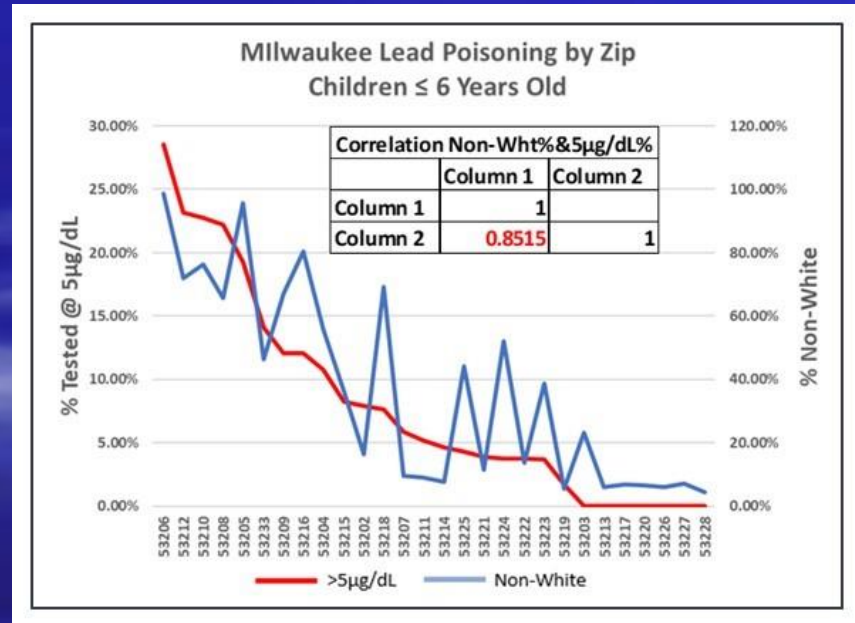
1. Take preventative action in the face of uncertainty  
(Vorsorgeprinzip)
2. Shift the burden of proof to the proponents of an activity
3. Explore a wide range of alternatives to possibly harmful actions
4. Increase public participation in decision making

# Sister Cities Zadar - Milwaukee

International Folk Fair  
2018



Milwaukee Health Department  
2016



# Zadar - Milwaukee

## Water Health Pilot Program

- Middle School, Milwaukee
  - Chair, Sister Cities Committee, Ald. Russell Stamper, II
  - President Common Council, Ashanti Hamilton
  - Mayor, Tom Barrett
- Middle School, Zadar
  - President Federation of Croatian Societies, John Braovac
  - Government Relations MillerCoors, Paul Lucas
  - Consul General, Sanja Laković, Croatian Consulate Chicago
- Global Water Center
  - Dr. Marcia Silva, *et al* prototype particle sensor, tap H<sub>2</sub>O

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# Zadar - Milwaukee

## Water Health Pilot Program

- Outreach Goal 1
  - Activity: Both schools draw pictures of “water future”
  - Trade visions via technology
- Outreach Goal 2
  - Activity: Perform analyses with “particle sensor”
  - Document, graph and share data via technology
- Outreach Goal 3
  - Students travel to respective countries

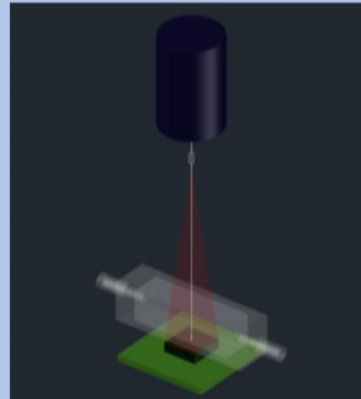
# Sister Cities Zadar – Milwaukee

## Water Health

### Self-assembled optical sensor

#### HANDHELD HOLOGRAPHIC PARTICLE SENSOR

The handheld holographic sensor developed at the University of Wisconsin–Milwaukee is intended to detect particles and potentially small organisms in water samples. It operates as a lensless microscope, beaming a 650nm red laser through a water sample. This produces in-line holographic images, which are analyzed and counted in seconds by open-source software which our laboratory has customized for this application. The sensor can be constructed very simply, with less than \$100 in parts.



#### PERFECT FOR A CLASSROOM SETTING

- Using a laser, no more powerful than that found in a common everyday laser pointer, students will be able to build and operate their very own handheld holographic lab. If assembled using a solderless breadboard, no soldering is even required.
- Drawings, CAD, and STL files can be provided so that students can build or 3D-print a housing to hold all the components or edit the files to come up with their own designs.
- Give your students the ability to share their images with their friends via social media such as Facebook, Twitter, Instagram, or anywhere.

# Sister Cities Zadar – Milwaukee MCT Experienced Travelers 2018



Photo by Andrew Ewert

# Sister Cities Zadar - Milwaukee

International Folk Fair 2018

Milwaukee, WI USA



Sister Cities Zadar - Milwaukee  
Water Health Pilot Program  
Language & Science  
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