

NOW-R2: Identifying Priority Education, Training and Outreach Needs

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Sustainable Development Goals



www.globalgoals.org

Food

BY 2030
NO ONE WILL
GO HUNGRY
ANYWHERE
IN THE WORLD

#GlobalGoals

Energy

GOAL 7

THE
WORLD
NEEDS A
LIGHT-BULB
MOMENT

#GlobalGoals



Water



I SUPPORT
GOAL 6
CLEAN WATER
AND SANITATION



THE GLOBAL GOALS
For Sustainable Development



THE GLOBAL GOALS
For Sustainable Development



I SUPPORT
GOAL 11
SUSTAINABLE
CITIES AND
COMMUNITIES



THE GLOBAL GOALS

For Sustainable Development



I SUPPORT GOAL 11 SUSTAINABLE CITIES AND COMMUNITIES

- 11.6 “By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management”

Why Horizon Scanning?

What are the world's biggest issues?

Who is going to solve them?

theguardian | TheObserver

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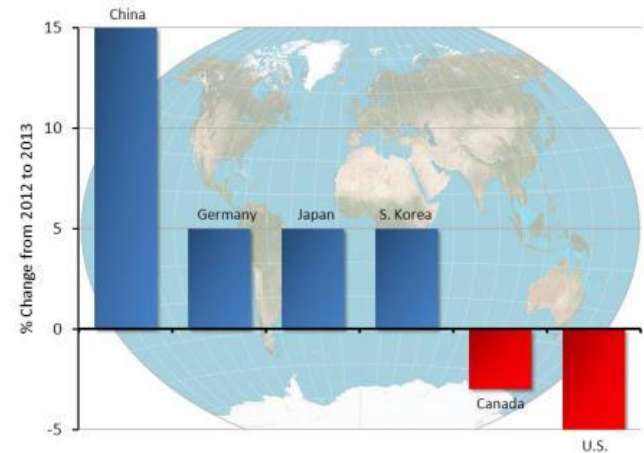
The 20 big questions in science

From the nature of the universe (that's if there is only one) to the purpose of dreams, there are lots of things we still don't know – but we might do soon. A new book seeks some answers

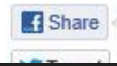
Hayley Birch, Colin Stuart and Mun Keat Looi
The Observer, Sunday 1 September 2013



Scientific R&D Spending



Source: Cell, 2013 Jul 3;154(1):16-9.



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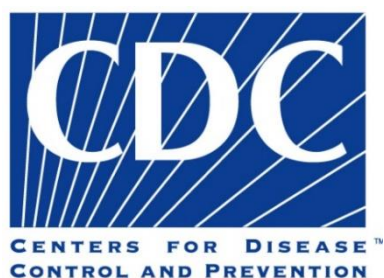
Policy: Set research priorities in a time of recession

Patrick Cunningham¹

23 October 2013

Rigorous analyses are needed to establish the benefits of the knowledge economy, says former

What are the key challenges and opportunities facing environmental public health practitioners?



Identifying Needs for Advancing the Profession and Workforce in Environmental Health

An ever-changing landscape for environmental health (EH) requires in-depth assessment and analysis of the current challenges and emerging issues faced by EH professionals. The Understanding the Needs, Challenges, Opportunities, Vi-

Justin A. Gerding, DHA, MPH, Bryan W. Brooks, PhD, MS, Elizabeth Landeen, BA, Sandra Whitehead, PhD, MPA, Kaitlyn R. Kelly, BS, Amy Allen, BS, David Banaszynski, BS, Michael Dorshorst, MEd, Lane Drager, BS, Tannie Eshenaur, MPH, Jeff Freund, BS, Adam Inman, BS, Sandra Long, BS, Jessica Maloney, BS, Tammy McKeever, Tyler Pigman, BS, Nancy Rising, Sarah Scanlan, BS, Jennifer Scott, MS, Colin Shukie, MPH, Gary Stewart, BS, Danen Tamekazu, BS, Valerie Wade, BS, Carolyn White, MPH, and John Sarisky, MPH



See also Künzli, p. 296, and the *AJPH* Environmental Health Workforce & Regulation section, pp. 284–298.

29 Priority Problem Statements to support the work of EH professionals for Common EH Programs

Environmental Health Practice Challenges and Research Needs for U.S. Health Departments

Bryan W. Brooks,¹ Justin A. Gerding,² Elizabeth Landeen,³ Eric Bradley,⁴ Timothy Callahan,⁵ Stephanie Cushing,⁶ Fikru Hailu,⁷ Nancy Hall,⁸ Timothy Hatch,⁹ Sherise Jurries,¹⁰ Martin A. Kalis,² Kaitlyn R. Kelly,¹ Joseph P. Laco,² Niki Lemin,¹¹ Carol McInnes,¹² Greg Olsen,¹³ Robert Stratman,¹⁴ Carolyn White,¹⁵ Steven Wille,¹⁶ and John Sarisky²

29 Priority Problem Statements for Common EH Programs

What are the Key Education,
Training and Outreach Needs for
Onsite Wastewater?



Needs for Onsite Wastewater Recycling Research

Unique Partnership with NOWRA

Steering Committee with Diverse Representation

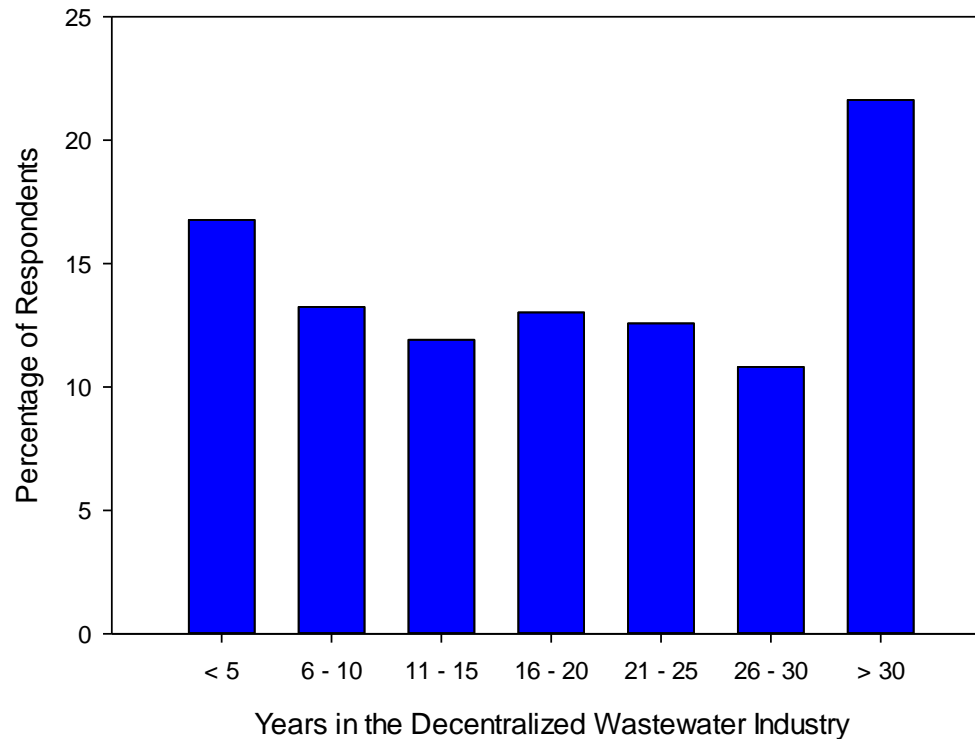
Followed established survey methods (e.g., from UNCOVER-EH)

Phase 1: Survey

- input from hundreds of professionals working in business, government, academic institutions, and nongovernmental organizations

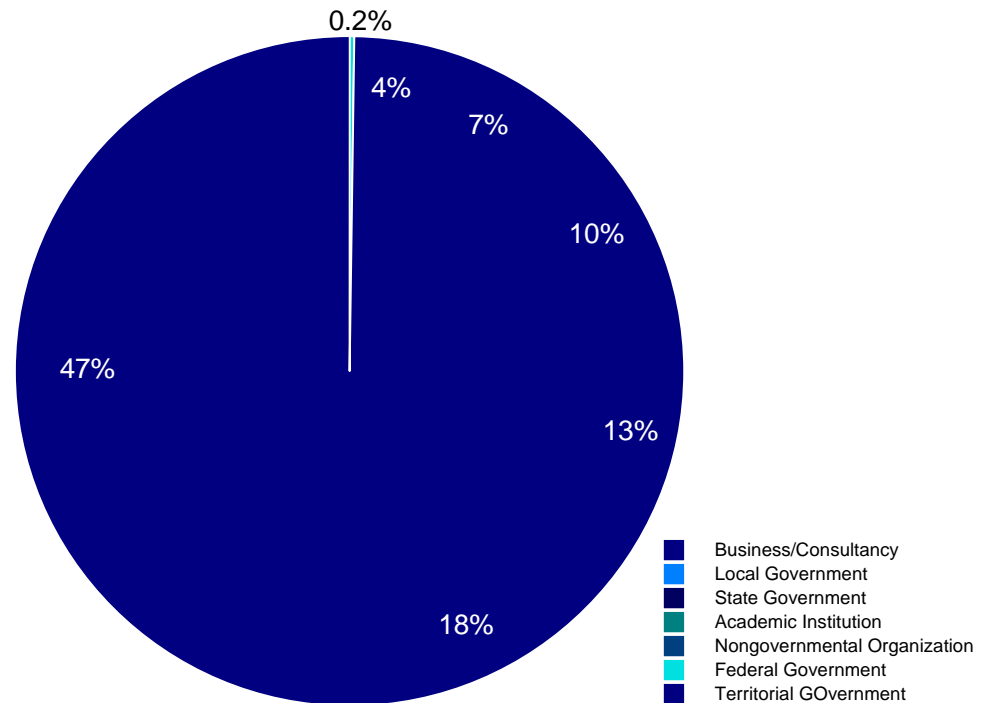


Years of Experience in Decentralized Wastewater

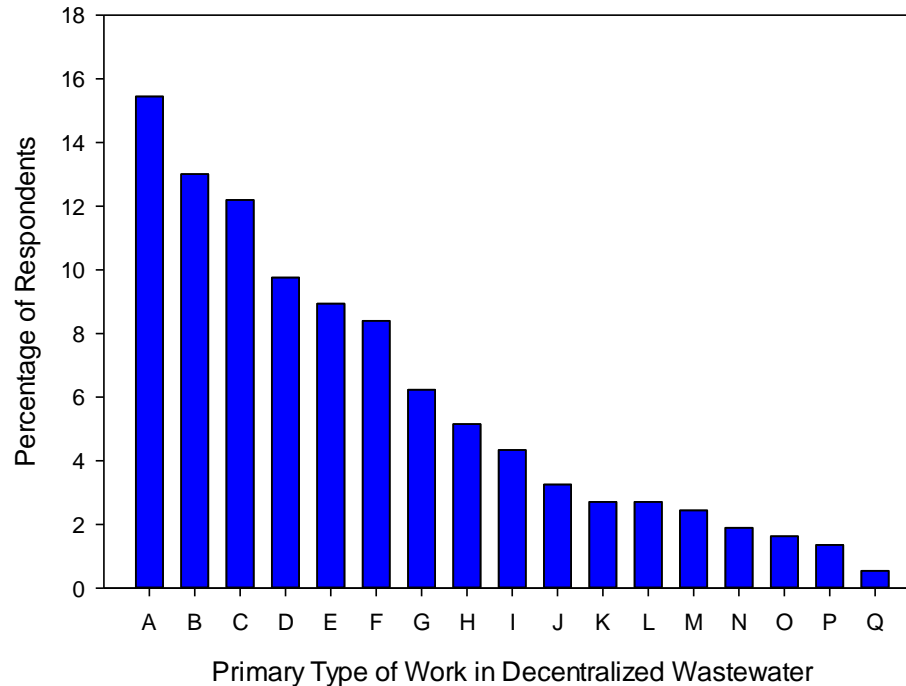


Who is your employer?

Most respondents (47%) work in business, followed by governments (35%) and academia (10%)

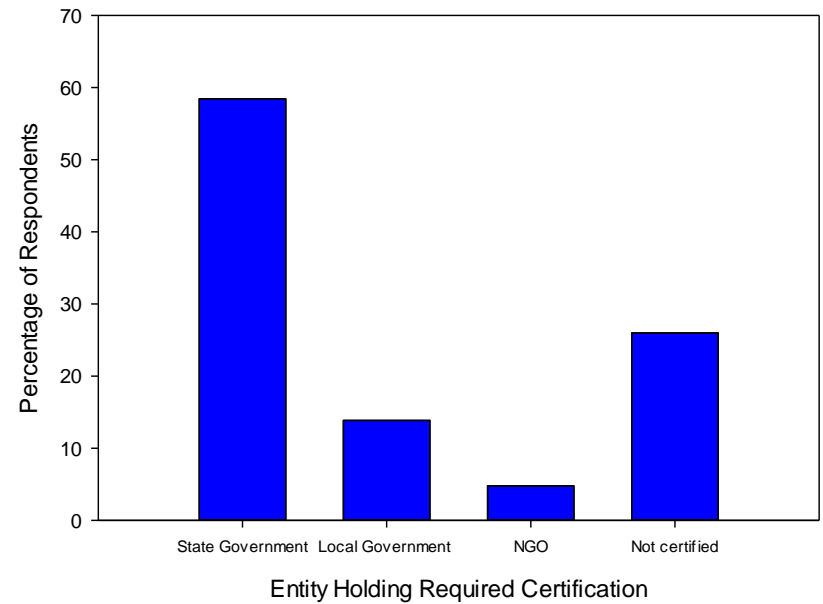
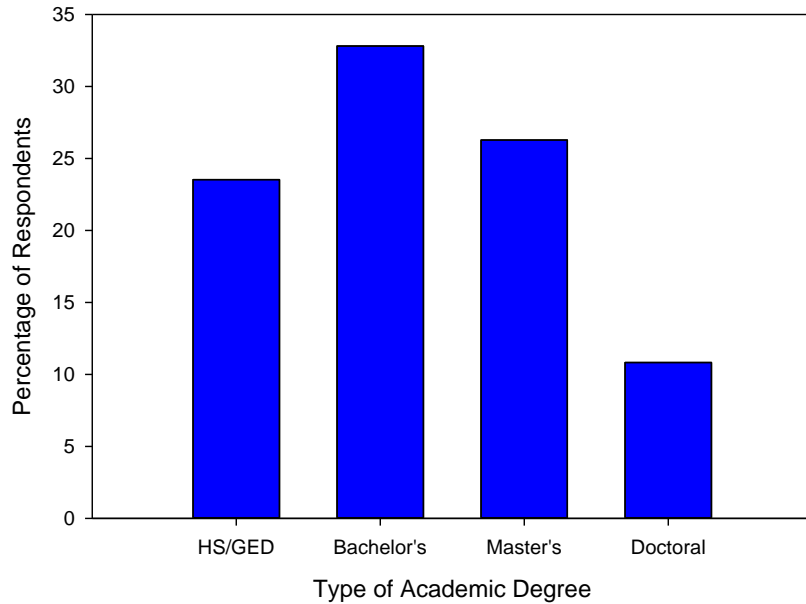


What is the primary type of work you do in decentralized wastewater?

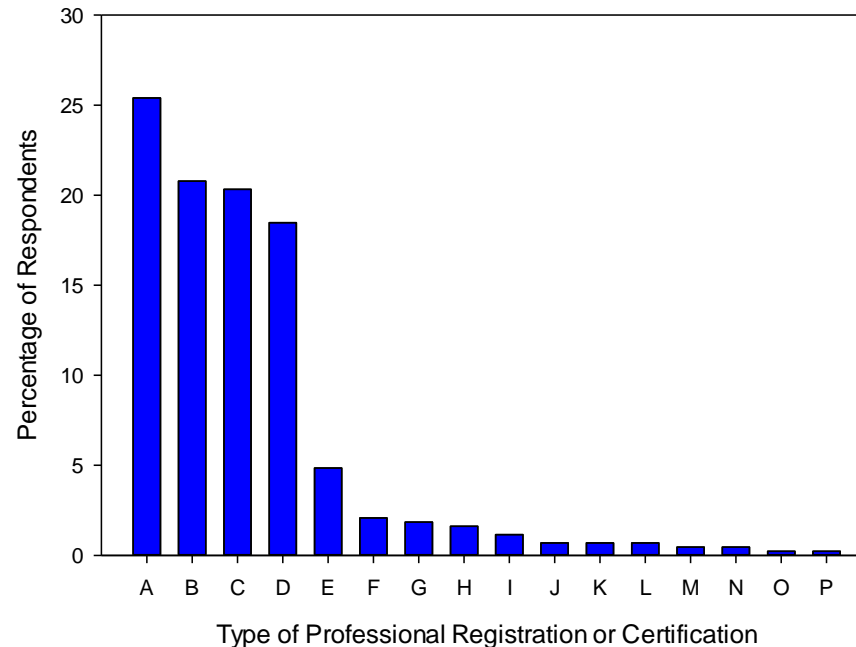


A: Engineer; B: Environmental Health; C: Installer; D: Designer; E: Regulator at tribal, territorial or state level; F: Academic researcher; G: Service provider; H: Public inspector; I: Academic educator; J: Soil scientist; K: Government researcher; L: Soil evaluator; M: Pumper; N: Operator; O: Private inspector; P: Regulator at federal level; Q: Funder

Degrees and Certifications

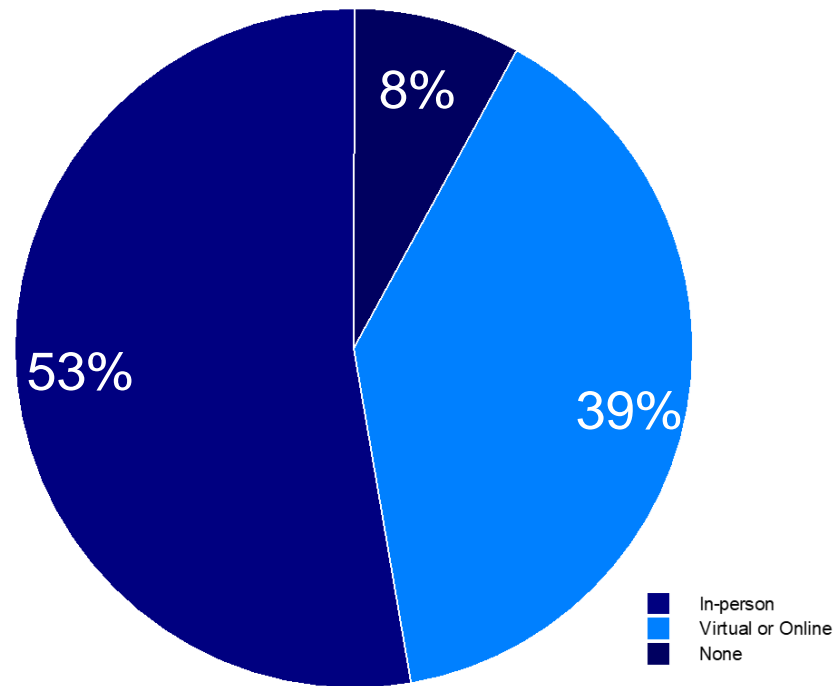


Which of the following professional registrations and credentials do you hold?

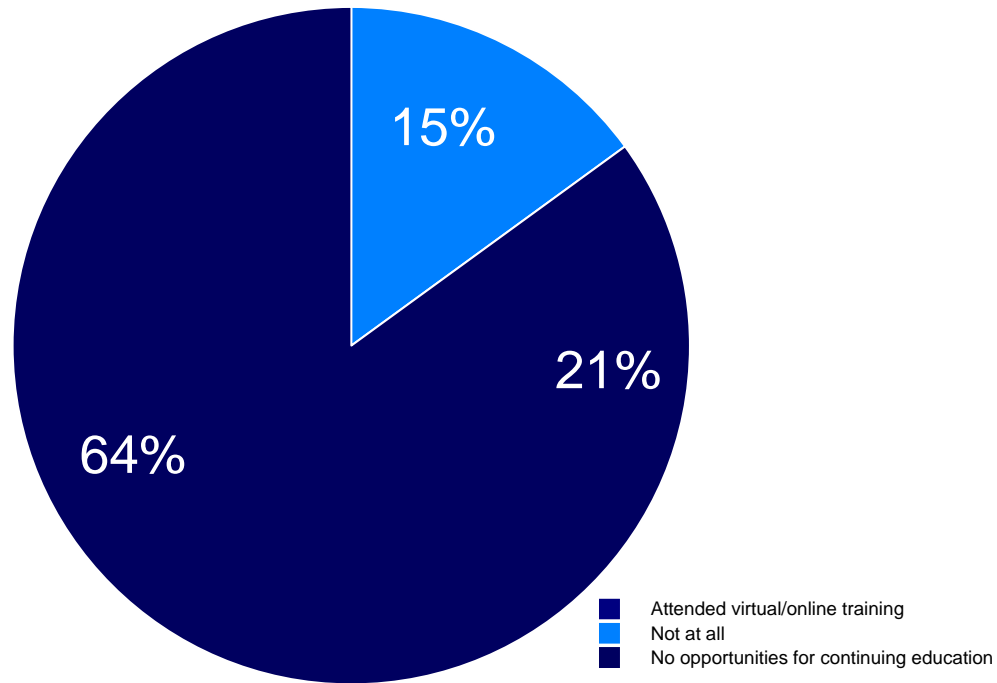


A: none; B: Certified Installers of Onsite Wastewater Treatment Systems (CIOWTS); C: Professional Engineer (PE); D: Registered Environmental Health Specialist/Registered Sanitarian (REHS/RS); E: Certified Professional Soil Scientist; F: Certified Environmental Professional; G: Certified in Public Health (CPH); H: Certified Professional Geologist (PG); I: Professional Land Surveyor; J: Board Certified Environmental Engineer (BCEE); K: Board Certified Environmental Scientist (BCES); L: Certified Hazardous Materials Manager (CHMM); M: Certified Safety Professional (CSP); N: Healthy Homes Specialist (HHS); O: Certified Health Education Specialist (CHES); P: Certified Industrial Hygienist (CIH)

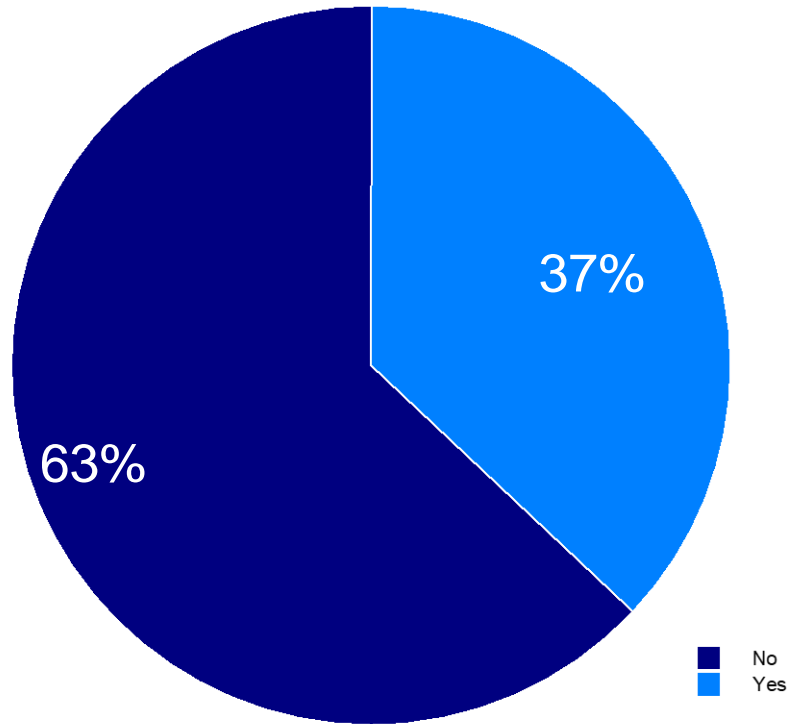
What type of training have you attended in the last 3 years?



How was your continuing education impacted by COVID-19?



Do you plan to retire in the next 5 years?



37% of respondents plan to retire in 5 yrs

We also asked professionals two key questions

Within the next 5-10 years, what decentralized wastewater issues or challenges will require new or modified programs or technologies?

What resources or tools will you need to do your job in the future?

Priority Problem Statements Identified for Training,
Education and Outreach

Education and Training

There is a decline of professionals in onsite wastewater recycling, due to an aging workforce and retirements.

Education and Training

University-level programs in onsite wastewater that train new professionals and conduct critical research on decentralized systems are limited.

Education and Training

Continuing education classes are not consistently hands on, engaging and effective, and are not keeping pace with development of more advanced decentralized technologies.

Education and Training

A shortage of education and training programs limits the number of qualified, certified and experienced professionals in the onsite wastewater recycling workforce.

Community Outreach and Engagement

Recruitment of early career professionals and awareness of employment opportunities in onsite wastewater recycling is limited.

Community Outreach and Engagement

Public awareness of the importance of onsite wastewater systems, and the sustainability benefits of decentralized technologies are limited.

Community Outreach and Engagement

In contrast to centralized systems, information on onsite wastewater recycling locations, operational performance, inspection records and system failures is not available in publicly accessible databases.

Community Outreach and Engagement

Consistent funding approaches and incentive programs for operation and maintenance of advanced onsite wastewater technologies are lacking at the local level.

Community Outreach and Engagement

Lack of information exchange with other disciplines (e.g., medicine) and programs (e.g., environmental health disease tracking) limits opportunities to address emerging issues in onsite wastewater recycling.



Needs for Onsite Wastewater Recycling Research

Next steps...

Preparing manuscripts for publication

Dissemination of findings key stakeholders, funders

Thank You!