

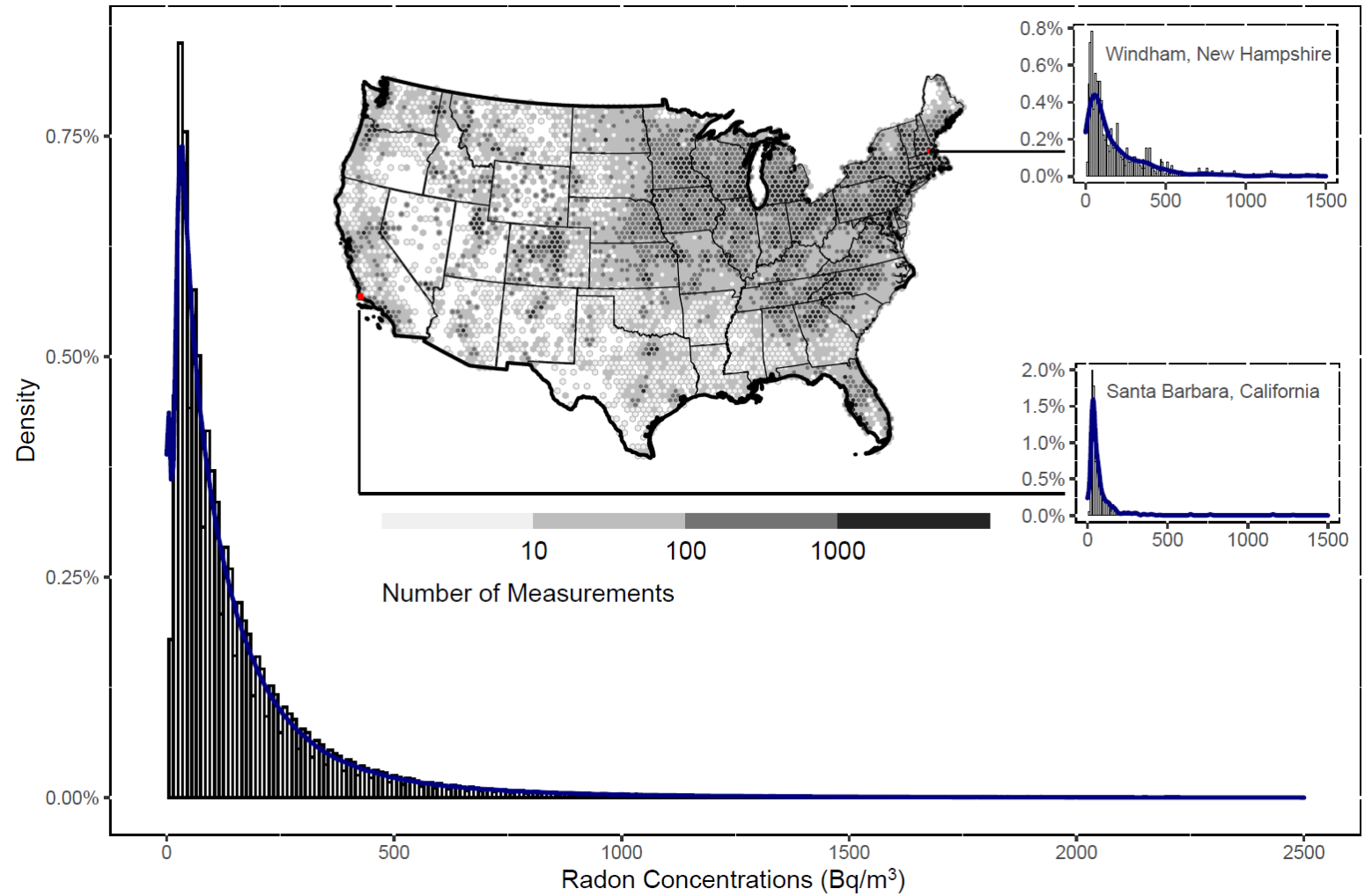
What have we learnt from the massive radon measurements?

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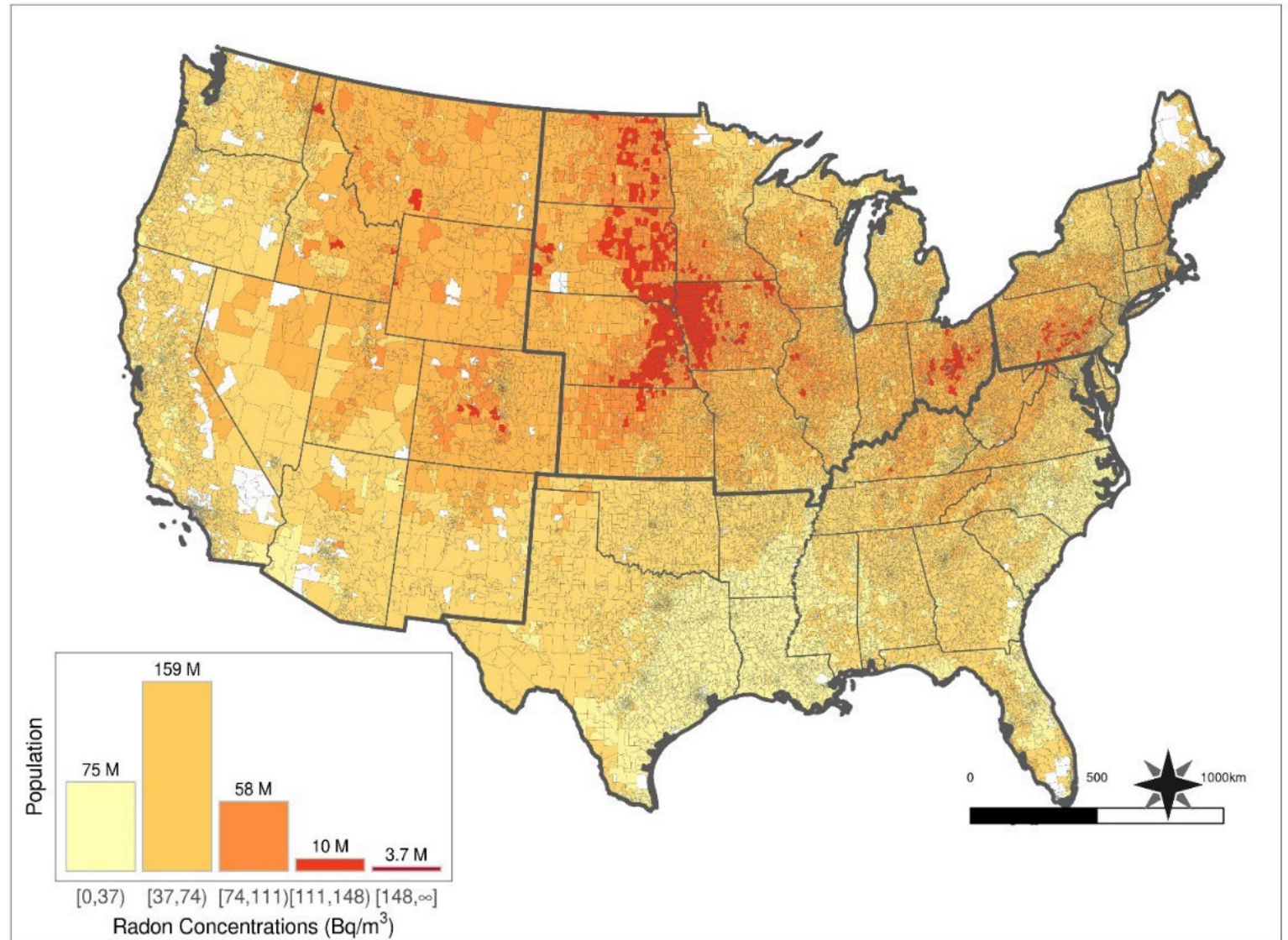
Massive measurements

- The massive dataset covers all major population centers in the lower 48 states.



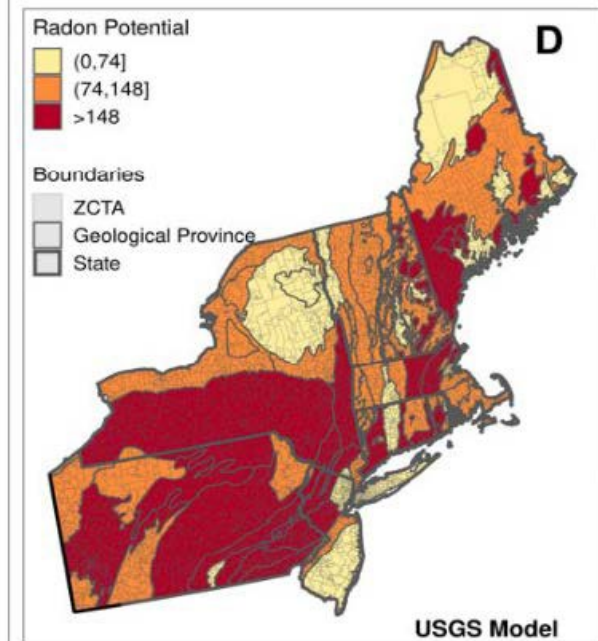
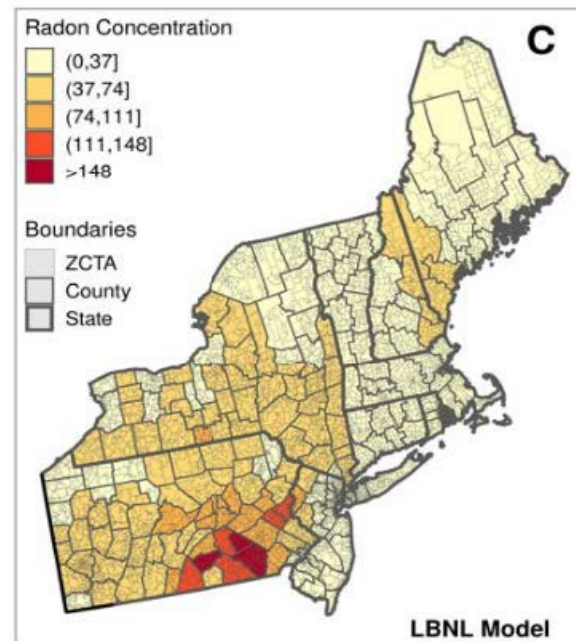
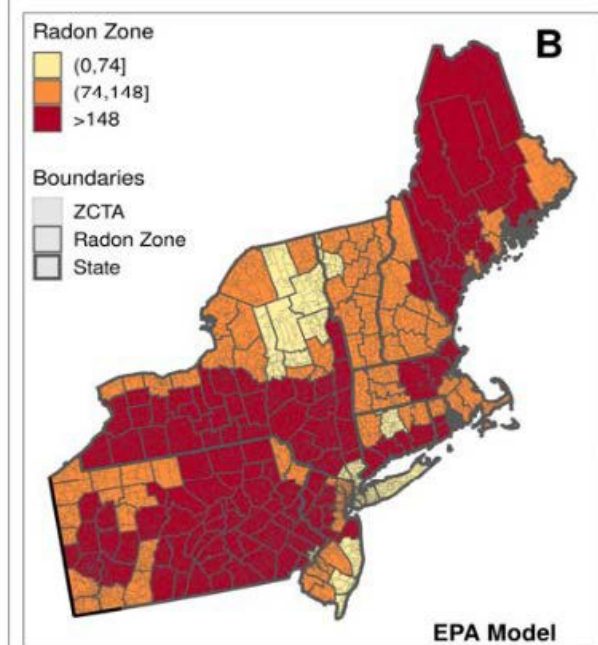
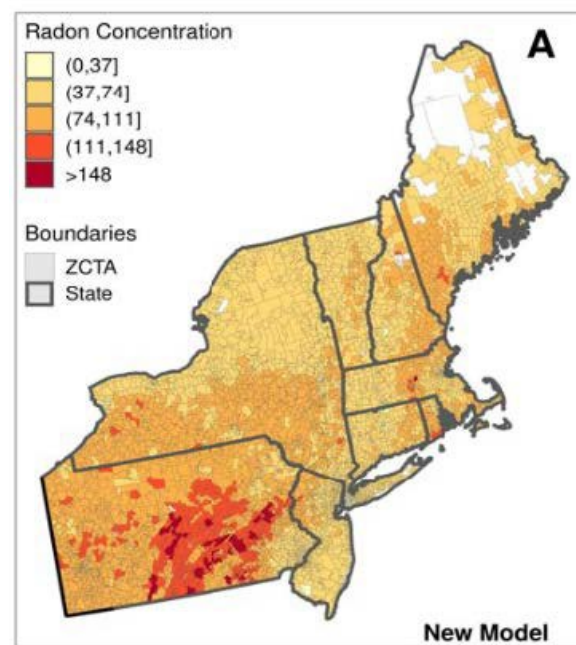
Improved Radon Map

- “Few” people live in areas with average radon over 4 pCi/L.



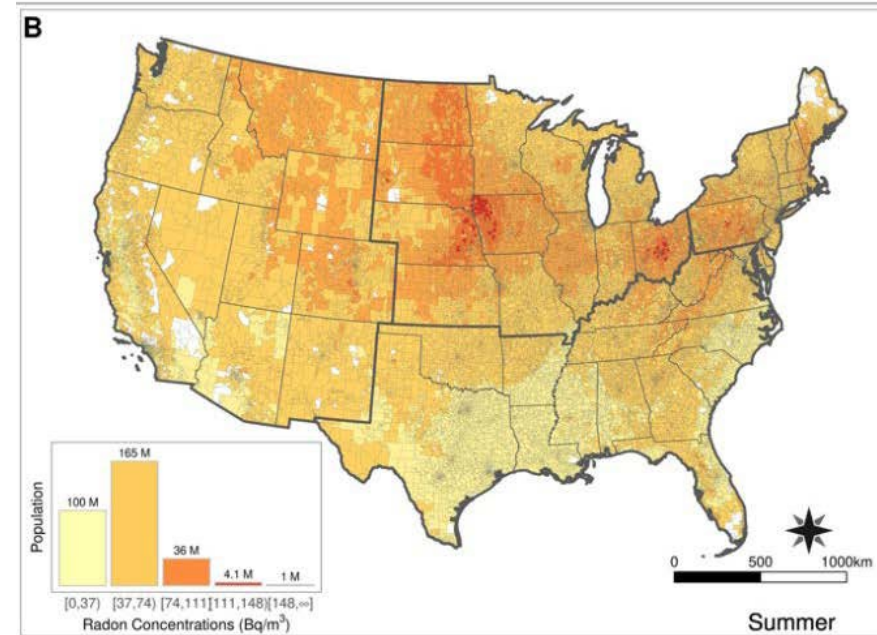
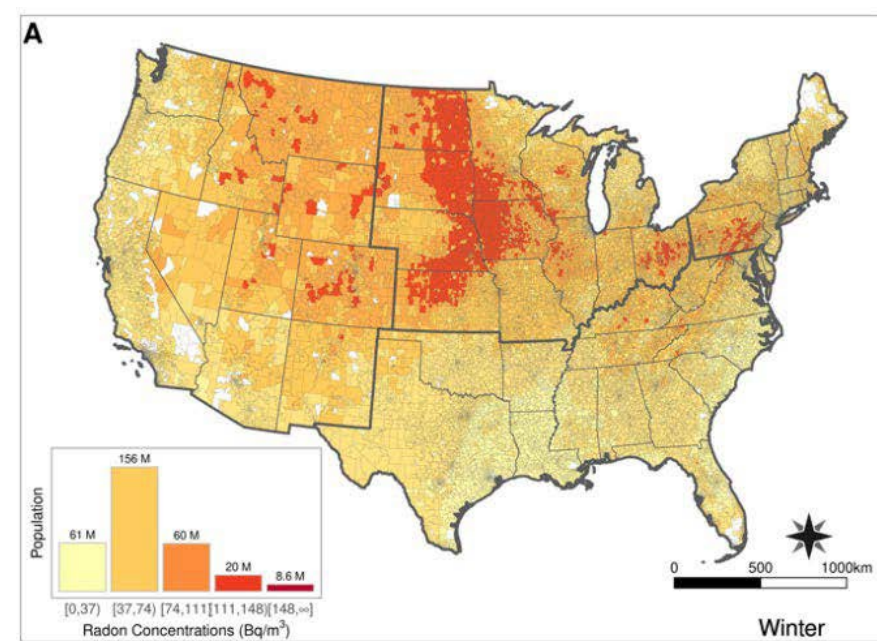
Unprecedented spatial details

- Please contact me for high-res radon map of your region.



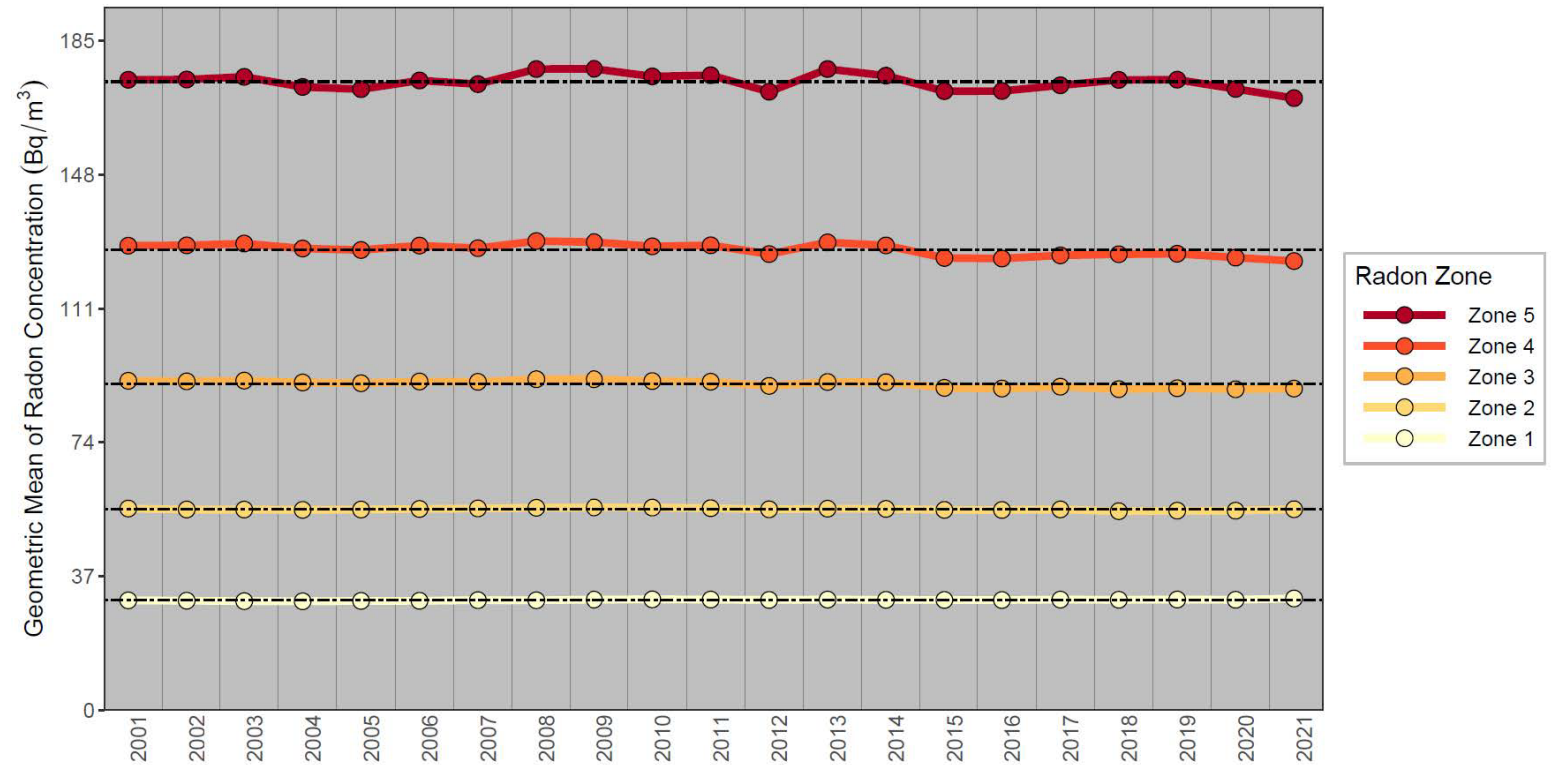
Unprecedented temporal details (I)

- Monthly/Seasonal variations are not shown before, likely restricting the studies of health outcomes other than lung cancer.



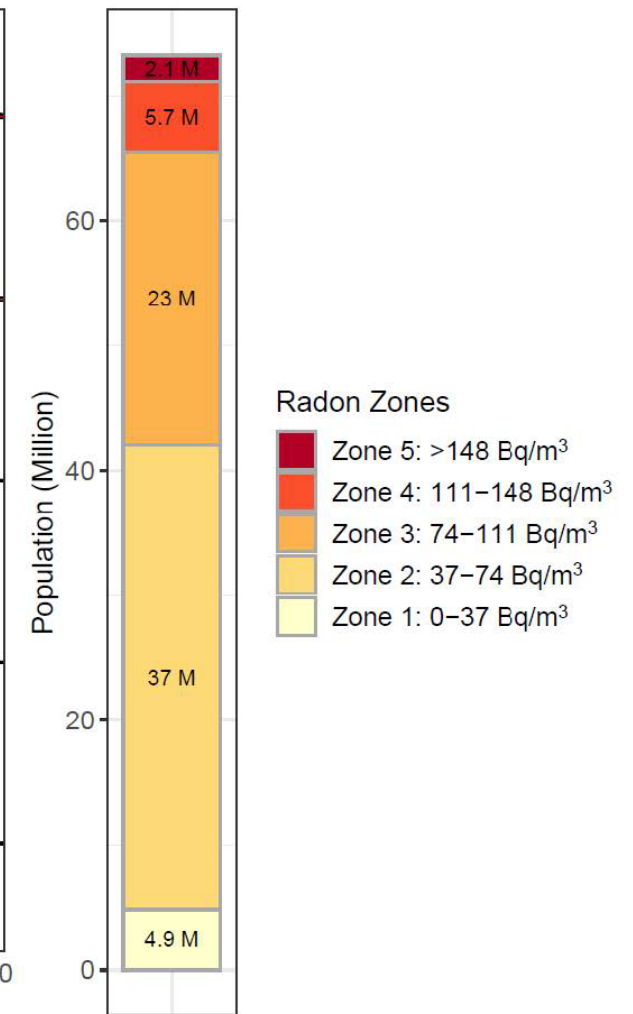
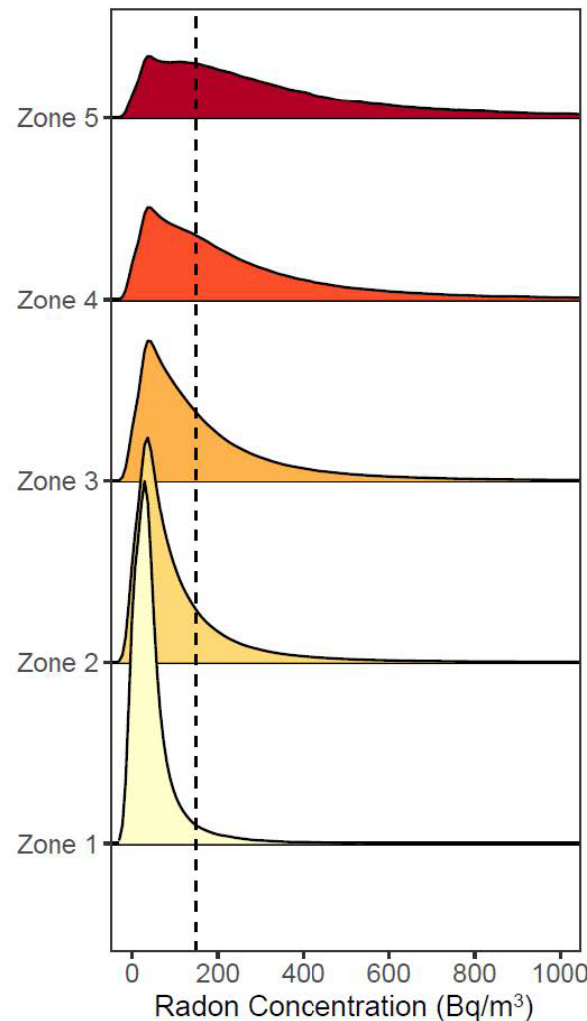
Unprecedented temporal details (II)

- Slight decrease in radon levels of “high-radon” zones.
- No obvious trends in radon levels of “low-radon” zones.



Underestimated population under risk

- Over 73 million people are living in residence with radon > 4 pCi/L (4 times larger than EPA's previous estimation)
- Most of them are living in "low-radon" zones.



Ongoing collaborations

Publications

1. Lana Mukharesh, Kimberly F Greco, Tina Banzon, Petros Koutrakis, **Longxiang Li**, Marissa Hauptman, Wanda Phipatanakul, Jonathan M Gaffin. “Environmental Radon and Childhood Asthma” *Pediatric Pulmonology* 57(12), 3165-3168 (2022). DOI: 10.1002/ppul.26143 [IF=3.1]
2. Tina Banzon, Jonathan Gaffin, Kimberly Greco, **Longxiang Li**, Thanaporn Ratchataswan, Petros Koutrakis, Wanda Phipatanakul. “Seasonal Effect of Radon Exposure on Fractional Exhaled Nitric Oxide” *Journal of Allergy and Clinical Immunology* 149(2), AB67 (2022). DOI: 10.1016/j.jaci.2021.12.248 [IF=19.7]
3. Wanda Phipatanakul, Tina Banzon, Kimberly Greco, **Longxiang Li**, Lana Mukharesh, Carolina L Zilli Vieira, M Kathryn Steiner, Marissa Hauptman, Thanaporn Ratchataswan, Petros Koutrakis, Jonathan Gaffin. “Effect of Radon Exposure on Asthma Morbidity in the School Inner-City Asthma Study” *Pediatric Pulmonology* 61(2), 4165-4168 (2023). DOI: 10.1002/ppul.27658 [IF=3.1]
4. Veronica A Wang, Petros Koutrakis, **Longxiang Li**, Man Liu, Carolina LZ Vieira, Brent A Coull, Edward F Maher, Choong-Min Kang, Eric Garshick. “Particle Radioactivity from Radon Decay Products and Reduced Pulmonary Function among Chronic Obstructive Pulmonary Disease Patients” *Environmental Research* 216, 114492 (2023). DOI: 10.1016/j.envres.2022.114492 [IF=8.4]
5. Veronica A Wang, Michael Leung, **Longxiang Li**, Anna M Modest, Joel Schwartz, Brent A Coull, Michele R Hacker, Blair J Wylie, Petros Koutrakis, Stefania Papatheodorou. “Prenatal exposure to ambient particle radioactivity and fetal growth in Eastern Massachusetts” *Air Quality, Atmosphere & Health* (2023) DOI: 10.1007/s11869-023-01311-6 [IF=4.6]

Grants

- ❖ Evaluation of Radon Progeny and Air Pollution Effects in Asthma (K23ES035459 NIEHS)
Role: Co-Investigator (PI: Dr. Tina Banzon at Boston Children’s Hospital)
- ❖ Residential radon, socioeconomic opportunity, and respiratory outcomes in bronchopulmonary dysplasia (American Lung Association)
Role: Co-Investigator (PI: Dr. Jonathan Gaffin at Boston Children’s Hospital)

Questions

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