



2013 Number 5

ISIAQ NEWSLETTER

Mid-July 2013

Environment and Health Basel Five Weeks Away

The first-ever joint conference of the International Society for Environmental Epidemiology (ISEE), the International Society of Exposure Science (ISES), and the International Society of Indoor Air Quality and Climate (ISIAQ) hosted by the Swiss Tropical and Public Health Institute (Swiss TPH) offers scientists, researchers and health professionals from all over the world an excellent platform from which to discuss the latest scientific achievements at the interface of health, disease prevention, the environment, and policymaking.

Visit the [website](#) for further details on content and timing of the exciting morning Plenary sessions and symposia. The searchable full Program will be online in July.

The conference opens on August 19th late afternoon and ends on August 23rd in the afternoon.

Important Dates

- Pre-Conference Courses take place on Monday Aug 19, 2013
- The Opening Ceremony starts on Monday Aug 19, 2013 at 5.30 pm

Closure will be on Friday Aug 23, 2013, at 4 pm

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Environment and Health Basel – Student Poster Competition

If your submission to the 2013 ISES/ISEE/ISIAQ Basel Conference was selected as a poster format, ISIAQ would like to encourage you to enter the ISIAQ student poster competition.

After the award ceremony on Friday morning, the winner will go home with a free 1-year ISIAQ membership and a certificate. The 2 runners-up will also receive a certificate.

To enter please see the information on the link below:

<http://www.ehbasel13.org/english/Poster-award-comp.php>

The deadline to enter the student poster competition is July 31.

If you have any questions, you may contact [Jelle Laverge](#).

We look forward to seeing you at Basel!

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Environment and Health Basel – Job Board

This year there will be a job postings board available at the ISEE-ISES-ISIAQ conference in Basel. We want to welcome everyone to post jobs on this board (location likely near the registration booth). You can also forward your job announcement (e.g. Internship, post-doc, research/industry position) to [Jelle Laverge](mailto:Jelle.Laverge), and we will post them for you. If you like us to post the announcement for you, please mail us the information by **August 13th 2013**.

Information should include:

- Organization
- Position (Please include brief description here):
- Opening Date
- Closing Date
- Contact

Please also indicate if you would like your announcement to be posted on the ISIAQ linkedin page as well.

Students and New Researchers: Join the ISIAQ Mentorship Program TODAY!

To all students and new researchers in ISIAQ,

We recently launched the ISIAQ Mentorship Program, which we have designed to allow students and early-career ISIAQ members to partner with more senior ISIAQ members and build a meaningful mentor-mentee relationship. It is our hope that this mentorship program can help strengthen the society, advance the profession, and most importantly, build lifelong collaborations and friendships between established and emerging professionals in our field.

Over the last few months, we have been recruiting mentors for the inaugural year of the program. Now that we have successfully enlisted a group of mentors, we need your help to match them with students and new researchers (i.e., those within the first 5 years of their career)!

If you are interested in participating in the program, please email your name, contact information, current institution and location, educational status, and 1-2 sentences describing your research interests to mentorship@isiaq.org with the subject line “ISIAQ Mentorship Program.” We will compile your names and interests into a database and use it to match mentors and mentees that share common interests.

Please do send your information by August 15, 2013 so we can get this program underway! We will also be recruiting students and new researchers at the ISEE-ISES-ISIAQ Environment and Health Conference in Basel, Switzerland, August 19-23, 2013. Please also note whether or not you will be attending this conference in your email to mentorship@isiaq.org.

Thanks,
Brent Stephens
ISIAQ Mentorship Program Coordinator

Annual General Meeting

ISIAQ's AGM will be held in conjunction with the ISEE-ISES-ISIAQ Conference in Basel, Switzerland on August 21, 2013, 12:00 PM (local time.)

The Board of Directors' Report will be presented. This report is an account of the activities of the Society and will include:

- Treasurer's report
- Auditors' report and Financial Statement from the Manager in charge of the Secretariat
- Indoor Air Journal Editor's report
- Scientific and Technical Committees (STCs) Initiative
- International Academy of Indoor Air Sciences
- Trustees' report
- Student Representative's report

The BOD Report will be made available prior to the meeting, for your review.

Indoor Air, Volume 23, Number 4 (August 2013)**Abstracts****William W Nazaroff - Between Scylla and Charybdis: energy, carbon dioxide, and indoor environmental quality**

In Book XII of Homer's *Odyssey*, Ulysses navigates his ship through a narrow strait guarded on one side by Scylla, a six-headed monster, and on the other by Charybdis, a violent whirlpool. Rather than risk the loss of his entire ship, Ulysses passes too close to Scylla, leading to the deaths of six of his best men. Of key importance, Ulysses knew of the challenges ahead of him, having been warned in detail by Circe.

On two prior occasions, editorials in *Indoor Air* have explored the challenges and opportunities for indoor environmental quality that arise in connection with anthropogenic climate change (Nazaroff, 2008; Spengler, 2012). Three developments over the past year lead me to share with you some further thoughts.

E. N. Torjusen, G. B. Diette, P. N. Breyse, J. Curtin-Brosnan, C. Aloe and E. C. Matsui - Dose–response relationships between mouse allergen exposure and asthma morbidity among urban children and adolescents

Abstract Home mouse allergen exposure is associated with asthma morbidity, but little is known about the shape of the dose–response relationship or the relevance of location of exposure within the home. Asthma outcome and allergen exposure data were collected every 3 months for 1 year in 150 urban children with asthma. Participants were stratified by mouse sensitization, and relationships between continuous measures of mouse allergen exposure and outcomes of interest were analyzed. Every tenfold increase in the bed mouse allergen level was associated with an 87% increase in the odds of any asthma-related health care use among mouse-sensitized [Odds Ratio (95% CI): 1.87 (1.21–2.88)], but not non-mouse-sensitized participants. Similar relationships were observed for emergency department visit and unscheduled doctor visit among mouse-sensitized participants. Kitchen floor and bedroom air mouse allergen concentrations were also associated with greater odds of asthma-related healthcare utilization; however, the magnitude of the association was less than that observed for bed mouse allergen concentrations. In this population of urban children with asthma, there is a linear dose–response relationship between mouse allergen concentrations and asthma morbidity among mouse-sensitized asthmatics. Bed and bedroom air mouse allergen exposure compartments may have a greater impact on asthma morbidity than other compartments.

Practical Implication The linear dose–response relationship between mouse allergen concentrations and asthma morbidity among mouse-sensitized urban children and adolescents suggests that a decrease in mouse allergen concentrations would be associated with a concomitant decrease in morbidity. For mouse-sensitized children and adolescents with asthma, it may be beneficial to augment integrative pest management strategies with air purifiers, frequent laundering of bed linens and allergen-proof mattress and pillow encasements because the bed and air exposure compartments are most strongly associated with morbidity.

A. Fairs, J. Agbetile, M. Bourne, B. Hargadon, W. R. Monteiro, J. P. Morley, R. E. Edwards, A. J. Wardlaw and C. H. Pashley - Isolation of *Aspergillus fumigatus* from sputum is associated with elevated airborne levels in homes of patients with asthma

Abstract Indoor bioaerosols, such as mold spores, have been associated with respiratory symptoms in patients with asthma; however, dose–response relationships and guidelines on acceptable levels are lacking. Furthermore, a causal link between mold exposure and respiratory infections or asthma remains to be established. The aim of this study was to determine indoor concentrations of *Aspergillus fumigatus* and a subset of clinically relevant fungi in homes of people with asthma, in relation to markers of airways colonization and sensitization. Air and dust samples were collected from the living room of 58 properties. Fungal concentrations were quantified using mold-specific quantitative PCR and compared with traditional microscopic analysis of air samples. Isolation of *A. fumigatus* from sputum was associated with higher airborne concentrations of the fungus in patient homes ($P = 0.04$), and a similar trend was shown with *Aspergillus/Penicillium*-type concentrations analyzed by microscopy ($P = 0.058$). No association was found between airborne levels of *A. fumigatus* and sensitization to this fungus, or dustborne levels of *A. fumigatus* and either isolation from sputum or sensitization. The results of this study suggest that the home environment should be considered as a potential source of fungal exposure, and elevated home levels may predispose people with asthma to airways colonization.

Fairs et al (continued from previous page)

Practical Implication Increased airborne mold concentrations in the home environment may lead to increased risk of airways colonization by fungi, suggesting that environmental exposure to fungi should be considered in the medical evaluation of asthma patients. No significant correlations were found between fungal concentrations in air and dust samples, suggesting that both airborne and dustborne concentrations should be considered in assessments of fungal contamination of buildings.

K. C. Dannemiller, J. S. Murphy, S. L. Dixon, K. G. Pennell, E. M. Suuberg, D. E. Jacobs and M. Sandel - Formaldehyde concentrations in household air of asthma patients determined using colorimetric detector tubes

Abstract Formaldehyde is a colorless, pungent gas commonly found in homes and is a respiratory irritant, sensitizer, carcinogen, and asthma trigger. Typical household sources include plywood and particleboard, cleaners, cosmetics, pesticides, and others. Development of a fast and simple measurement technique could facilitate continued research on this important chemical. The goal of this research is to apply an inexpensive short-term measurement method to find correlations between formaldehyde sources and concentration, and formaldehyde concentration and asthma control. Formaldehyde was measured using 30-min grab samples in length-of-stain detector tubes in homes ($n = 70$) of asthmatics in the Boston, MA area. Clinical status and potential formaldehyde sources were determined. The geometric mean formaldehyde level was 35.1 ppb and ranged from 5 to 132 ppb. Based on one-way ANOVA, t-tests, and linear regression, predictors of log-transformed formaldehyde concentration included absolute humidity, season, and the presence of decorative laminates, fiberglass, or permanent press fabrics ($P < 0.05$), as well as temperature and household cleaner use ($P < 0.10$). The geometric mean formaldehyde concentration was 57% higher in homes of children with very poorly controlled asthma compared to homes of other asthmatic children ($P = 0.078$). This study provides a simple method for measuring household formaldehyde and suggests that exposure is related to poorly controlled asthma.

Practical Implications A simple, replicable method for formaldehyde testing in homes was developed. Formaldehyde is a ubiquitous chemical present in all homes in this study in Boston, MA. Concentration was dependent on absolute humidity, season, temperature, household cleaner use, and the presence of decorative laminates, fiberglass, or permanent press fabrics. Increased formaldehyde concentration showed an association with decreased asthma control, which suggests that decreasing formaldehyde concentration may improve asthma control.

M. Roponen, T. Meklin, H. Rintala, A. Hyvärinen and M.-R. Hirvonen - Effect of moisture-damage intervention on the immunotoxic potential and microbial content of airborne particles and on occupants' upper airway inflammatory responses

Abstract This intervention study evaluated the effect of moisture-damage repairs on the exposure and on the upper airway inflammatory responses of the occupants. The airborne microbial exposure was followed by quantitative PCR analyses of 13 microbial species in repeated long-term indoor air samples before ($N = 26$) and after ($N = 28$) repairs of the school building. Airborne particulate matter was collected similarly from the same premises (before $N = 25$, after $N = 34$) for determination of nitric oxide (NO), tumor necrosis factor α (TNF α), and interleukin-6 (IL-6), measured in the cell culture medium of mouse macrophages. NO, TNF α , IL-6, and IL-4 were also analyzed in the nasal lavage (NAL) samples of the occupants ($N = 13$) to characterize their upper airway inflammatory responses during the exposure and after its cessation. After the repairs, concentrations of the measured airborne microbes decreased, the difference being significant for six of 13 species. After renovation, airborne particulate matter also caused significantly lower production of IL-6 and TNF- α in mouse macrophages than the material collected before the renovation. The concentration of IL-4 in the NAL samples was significantly lower after the renovation. These results show that the inflammatory potential of the airborne material decreases after intensive repair of the moisture damage.

Practical Implications In this study, we followed the exposure and health outcomes with a 'mold' intervention design. Our results show that, after intensive repair of the moisture damage, indoor air particulate matter contained less microbes and its capacity to induce inflammatory responses in vitro decreased. Also, upper airway inflammation decreased in the exposed occupants after repairs. The presented methodology may be of use when evaluating effects of moisture-damage repairs on indoor air quality and health of the occupants.

J. Yu, G. Cao, W. Cui, Q. Ouyang and Y. Zhu - People who live in a cold climate: thermal adaptation differences based on availability of heating

Abstract Are there differences in thermal adaptation to cold indoor environments between people who are used to living in heating and non-heating regions in China? To answer this question, we measured thermal perceptions and physiological responses of young men from Beijing (where there are indoor space heating facilities in winter) and Shanghai (where there are not indoor space heating facilities in winter) during exposures to cold. Subjects were exposed to 12°C, 14°C, 16°C, 18°C, 20°C for 1 h. Subjects from Beijing complained of greater cold discomfort and demonstrated poorer physiological acclimatization to cold indoor environments than those from Shanghai. These findings indicate that people's chronic indoor thermal experience might be an important determinant of thermal adaptation.

Practical Implication Long-term exposure to colder indoor environments may induce better physiological tolerance of such environments. In regions without indoor heating, the acceptable temperature range during winter is 2–3°C lower than in regions with indoor heating.

E. V. Bräuner, T. V. Rasmussen and L. Gunnarsen - Variation in residential radon levels in new Danish homes

Abstract Radon-222 gas arises from the radioactive decay of radium-226 and has a half-life of 3.8 days. This gas percolates up through soil into buildings, and if it is not evacuated, there can be much higher exposure levels indoors than outdoors, which is where human exposure occurs. Radon exposure is classified as a human carcinogen, and new Danish homes must be constructed to ensure indoor radon levels below 100 Bq/m³. Our purpose was to assess how well 200 newly constructed single detached homes perform according to building regulations pertaining to radon and identify the association between indoor radon in these homes and municipality, home age, floor area, floor level, basement, and outer wall and roof construction. Median (5–95 percentile) indoor radon levels were 36.8 (9.0–118) Bq/m³, but indoor radon exceeded 100 Bq/m³ in 14 of these new homes. The investigated variables explained nine percent of the variation in indoor radon levels, and although associations were positive, none of these were statistically significant. In this study, radon levels were generally low, but we found that 14 (7%) of the 200 new homes had indoor radon levels over 100 Bq/m³. More work is needed to determine the determinants of indoor radon.

Practical Implications Radon-222 gas percolates up through soil into buildings, and if it is not evacuated, there can be much higher exposure levels indoors than outdoors, which is where most human exposure occurs, and radon exposure is classified as a human carcinogen. Determining indoor radon levels and the variables that affect variation in indoor radon levels in new homes may help in prevention information campaigns. In this study, we found that median indoor radon levels of 36.8 Bq/m³, but 14 of the 200 new homes had indoor levels over 100 Bq/m³. Variations in indoor radon pertaining to home characteristics only explained nine percent of the variation in these homes. In Denmark, no monitoring campaigns of new homes exist and mitigation is the responsibility of home owners. Radon protection in residential homes where most radon exposure occurs is important, and more work including a larger number of explanatory variables seems justified.

J. Kim and K. Lee - Characterization of decay and emission rates of ultrafine particles in indoor ice rink

Abstract The purposes of this study were to determine indoor ultrafine particle (UFP, diameter <100 nm) levels in ice rinks and to characterize UFP decay and emission rates. All 15 public ice rinks in Seoul were investigated for UFP and carbon monoxide (CO) concentrations. Three ice rinks did not show peaks in UFP concentrations, and one ice rink used two resurfacers simultaneously. High peaks of UFP and CO concentrations were observed when the resurfacer was operated. The average air change rate in the 11 ice rinks was $0.21 \pm 0.13/h$. The average decay rates of UFP number concentrations measured by the P-Trak and DiSCmini were $0.54 \pm 0.21/h$ and $0.85 \pm 0.34/h$, respectively. The average decay rate of UFP surface area concentration was $0.33 \pm 0.15/h$. The average emission rates of UFP number concentrations measured by P-Trak and DiSCmini were $1.2 \times 10^{14} \pm 6.5 \times 10^{13}$ particles/min and $3.3 \times 10^{14} \pm 2.4 \times 10^{14}$ particles/min, respectively. The average emission rate of UFP surface area concentration was $3.1 \times 10^{11} \pm 2.0 \times 10^{11}$ $\mu\text{m}^2/\text{min}$. UFP emission rate was associated with resurfacer age. DiSCmini measured higher decay and emission rates than P-Trak due to their different measuring mechanisms and size ranges.

Practical Implications Carbon monoxide and ultrafine particle (UFP) concentrations were continuously monitored to estimate the air change rate and UFP decay and emission rates. High level of UFP was associated with resurfacing. Ventilation rate in ice rink was low. Different decay rates and emission rates of UFP were determined by two instruments. The estimated decay and emission rates may be useful for developing control strategy.

S. Naylor, P. T. Walsh and K. P. Dowker - Survey of the reliability of carbon monoxide alarms deployed in domestic homes and efficacy of use by consumers

Abstract Carbon monoxide (CO) alarms are extensively used in domestic premises in the UK to help protect against CO poisoning. Their expected lifetime has been increasing, and some current models now have a replacement period of more than 6 years under normal operation. However, concerns have been expressed as to the reliability of alarms over an extended period. In this study, 110 households with a CO alarm were surveyed, during which the alarm was uninstalled and replaced and a household survey questionnaire administered. Alarm reliability was assessed under laboratory conditions by testing conformity to the alarm condition gas tests in either the British (European) standard, BS EN 50291 for UK certified models, or the US standard, UL 2034 for US certified models. The questionnaire recorded the alarm make and model, its age, its location, whether it was correctly sited, and how often it was tested. General information on the property was also collected. Results of laboratory testing suggest that the reliability of the most common models of CO alarms used by UK consumers has improved over the last 7 years. However, findings from the household survey suggest that the way alarms are used in many homes may not maximize their ability to detect abnormal levels CO.

Practical Implications Carbon monoxide (CO) alarms are widely recommended as one of a number of important measures to protect against the health risks associated with CO leaks from fuel appliances. The expected lifetime of CO alarms has been increasing since their introduction in the mid-1990s. Some current models claim an operational life of the (electrochemical) sensor of more than 6 years under normal operation, with guarantees for the alarm approaching this period. However, concerns have been expressed as to the reliability of alarms over an extended period. This survey, undertaken in 2010, sought to derive evidence on the reliability and use of CO alarms typically employed in UK domestic settings, to support consumer advice regarding their effectiveness and usage.

N. Shinohara, M. Tokumura, M. Kazama, H. Yoshino, S. Ochiai and A. Mizukoshi - Indoor air quality, air exchange rates, and radioactivity in new built temporary houses following the Great East Japan Earthquake in Minamisoma, Fukushima

Abstract This study measured air exchange rates, indoor concentrations of aldehydes and volatile organic compounds (VOCs), and radioactivity levels at 19 temporary houses in different temporary housing estate constructed in Minamisoma City following the Great East Japan Earthquake. The 19 surveyed houses represented all of the companies assigned to construct temporary houses in that Minamisoma City. Data were collected shortly after construction and before occupation, from August 2011 to January 2012. Mean air exchange rates in the temporary houses were 0.28/h, with no variation according to housing types and construction date. Mean indoor concentrations of formaldehyde, acetaldehyde, toluene, ethylbenzene, *m/p*-xylene, *o*-xylene, styrene, *p*-dichlorobenzene, tetradecane, and total VOCs (TVOCs) were 29.2, 72.7, 14.6, 6.35, 3.05, 1.81, 7.29, 14.3, 8.32, and 901 $\mu\text{g}/\text{m}^3$, respectively. The levels of acetaldehyde and TVOCs exceeded the indoor guideline (48 $\mu\text{g}/\text{m}^3$) and interim target (400 $\mu\text{g}/\text{m}^3$) in more than half of the 31 rooms tested. In addition to guideline chemicals, terpenes (α -pinene and d-limonene) and acetic esters (butyl acetate and ethyl acetate) were often detected in these houses. The indoor radiation levels measured by a Geiger–Müller tube (Mean: 0.22 $\mu\text{Sv}/\text{h}$) were lower than those recorded outdoors (Mean: 0.42 $\mu\text{Sv}/\text{h}$), although the shielding effect of the houses was less than for other types of buildings.

Practical Implications Temporary houses were found to have low air exchange rates. There is some concern regarding indoor air quality during winter, if residents use standalone gas and oil heaters. The indoor levels of aldehydes and VOCs were not high, except for acetaldehyde and TVOCs prior to occupation. In addition to guideline chemicals, terpenes (α -pinene and d-limonene) and acetic esters (ethyl acetate and butyl acetate) were frequently detected in the houses. Radioactivity levels in the temporary houses were not high compared with outdoor levels.

S. M. Hartinger, A. A. Commodore, J. Hattendorf, C. F. Lanata, A. I. Gil, H. Verastegui, M. Aguilar-Villalobos, D. Mäusezahl and L. P. Naehrer - Chimney stoves modestly improved Indoor Air Quality measurements compared with traditional open fire stoves: results from a small-scale intervention study in rural Peru

Abstract Nearly half of the world's population depends on biomass fuels to meet domestic energy needs, producing high levels of pollutants responsible for substantial morbidity and mortality. We compare carbon monoxide (CO) and particulate matter (PM_{2.5}) exposures and kitchen concentrations in households with study-promoted intervention (OPTIMA-improved stoves and control stoves) in San Marcos Province, Cajamarca Region, Peru. We determined 48-h indoor air concentration levels of CO and PM_{2.5} in 93 kitchen environments and personal exposure, after OPTIMA-improved stoves had been installed for an average of 7 months. PM_{2.5} and CO measurements did not differ significantly between OPTIMA-improved stoves and control stoves. Although not statistically significant, a post hoc stratification of OPTIMA-improved stoves by level of performance revealed mean PM_{2.5} and CO levels of fully functional OPTIMA-improved stoves were 28% lower ($n = 20$, PM_{2.5}, 136 $\mu\text{g}/\text{m}^3$ 95% CI 54–217) and 45% lower ($n = 25$, CO, 3.2 ppm, 95% CI 1.5–4.9) in the kitchen environment compared with the control stoves ($n = 34$, PM_{2.5}, 189 $\mu\text{g}/\text{m}^3$, 95% CI 116–261; $n = 44$, CO, 5.8 ppm, 95% CI 3.3–8.2). Likewise, although not statistically significant, personal exposures for OPTIMA-improved stoves were 43% and 17% lower for PM_{2.5} ($n = 23$) and CO ($n = 25$), respectively. Stove maintenance and functionality level are factors worthy of consideration for future evaluations of stove interventions.

Practical Implications The use of improved chimney stoves did not result in significantly lower levels of personal exposure to products of incomplete combustion from biomass fuels when compared with control stoves. However, stove performance may vary among stove types, and it is usually linked to operation and maintenance, perception, user satisfaction, and sustainability of these stoves. Thus, stove maintenance levels should be used as proper indicators of efficacy and performance and not only stove type. Additionally, long-term benefits and sustainability of programs are harnessed through education of all household members, focusing mainly on awareness, importance of household air quality, and sustained stove functioning. Therefore, stove program implementers and evaluators should not only need to look at achieving air pollution thresholds, but convenience gains and social impact on families.

THIS SPACE IS AVAILABLE FOR **YOUR** NEWS IN THE NEXT ISSUE OF THE NEWSLETTER – TELL YOUR COLLEAGUES ABOUT ARTICLES YOU HAVE HAD PUBLISHED, GRANTS YOU HAVE RECEIVED, NATIONAL OR INTERNATIONAL NEWS OF INTEREST TO THE ISIAQ COMMUNITY. PLEASE SEND US YOUR NEWS ITEM, LESS THAN 300 WORDS IN LENGTH.

THANK YOU IN ADVANCE

About ISIAQ

With more than 800 members from more than 45 countries, ISIAQ is an international, independent, multidisciplinary, scientific, non-profit organization whose purpose is to support the creation of healthy, comfortable and productive indoor environments. We strongly believe this is achievable by advancing the science and technology of indoor air quality and climate as it relates to indoor environmental design, construction, operation and maintenance, air quality measurement and health sciences.

As a Society, our major role is to facilitate international and interdisciplinary communication and information exchange by publishing and fostering publication on indoor air quality and climate. We organize, sponsor and support initiatives such as meetings, conferences, and seminars on indoor air quality and climate; and we develop, adapt and maintain guidelines for the improvement of indoor air quality and climate.

ISIAQ's journal, *Indoor Air*, published six times per year, is the most respected and widely-cited source of scientific information relevant to building scientists and professionals. Our two major international conferences -- the Indoor Air 'xx and the Healthy Buildings 'xx conference series -- set the standard for high quality scientific information and its application to making healthy buildings. We also cooperate with government and other agencies and societies with interests in the indoor environment and climate.

To find out more about us, visit our website: <http://isiaq.org>

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Corporate Memberships are available

If your organization is involved in indoor air science, policy, or practice, a corporate membership in ISIAQ will place you in the limelight with the international indoor air community.

- ISIAQ reaches more than 45 countries around the world.

- ISIAQ's conferences, considered the most important in the field, have been attended by more than 4,000 individuals.

- The official Society journal, *Indoor Air*, is respected by scientists and policy-makers as the most reliable way to keep up with the latest scientific findings in the field.

To learn more about the benefits of corporate membership in ISIAQ, visit the membership page on our web site and click on the [corporate membership link](#).

Corporate Members

