THE HUMAN BODY is a highly complex environment – a hostile wilderness swarming with trillions of microorganisms and policed by an often overzealous immune system. Modern medicine has the difficult task of taming some of the body’s more destructive elements, while manipulating others so that they can be incorporated into new therapeutics.

However, the body is far from a closed system. As if the network of cells, organs and processes that comprise it were not complicated enough, there is also the constant onslaught of external factors to contend with. Researchers working to overcome persistent and chronic diseases have faced setbacks as they come to realise that solutions may be deeply rooted not only in the internal machinations of the body, but also in the wider external environment. Recent World Health Organization (WHO) figures have placed the annual number of deaths attributable to environmental exposures at around 4.9 million globally. As clear causative relationships are established between such exposures and deadly diseases like cancer, it may turn out that the real number is even higher.

The study of epigenetics exemplifies the significance that environmental factors can have for human health, as epigenetic effects can have an impact that is not only major but also potentially heritable. The idea of long-term alterations to gene expression is not a new one, but it is increasingly being seen as a feasible source of medical solutions. In this issue, Dr Eric Marcotte from the Canadian Institutes for Health Research discusses the Canadian Epigenetics, Environment and Health Research Consortium, a Signature Initiative he established to make such ambitions a reality in Canada and beyond.

The projects featured in this issue of International Innovation run the gamut from experiments to determine the intricacies of cellular machinery to expansive projects exploring major public health concerns. As we journey inside and outside the body, we also hear from Professor James Toouli, President of the World Gastroenterology Organization, and Surili Sutaria Patel, Senior Program Manager for the environmental health arm of the American Public Health Association. This diversity seems fitting, as increasingly it appears that finding the balance between both environments – internal and external – could be the key to overcoming the most serious health issues we face.

We are working hard to build a dynamic community, bringing together a diverse range of researchers, funders, policy makers and commercial partners to showcase the very best from across the research spectrum. As ever, do not hesitate to contact us with any feedback, registration enquiries or proposals for our next edition. Finally, if you are not already receiving International Innovation, don’t forget to register free of charge at: www.internationalinnovation.com/join-us/registration.

Enjoy the issue!

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