

science fiction poetry of Edwin Morgan; and Tracey Rosenberg and Aiko Harman, who had contributed poems to the Human Genre Project. This event drew the highest proportion of audience members from Edinburgh's literary community, resulting in a very lively discussion.

**Session 4, 'Scientists Behaving Badly?'**, asked how science studies can enable us to understand the issues raised by 'Climategate', the controversy over alleged scientific malpractice that arose out of the hacking of the University of East Anglia Climatic Research Unit's documents and emails in November 2009. The event considered the perhaps consequent rise of public scepticism about the reality of climate change and the integrity of climate scientists, both of which speakers at the event robustly defended.

#### References and Further Information

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9. [www.writers-bloc.org.uk](http://www.writers-bloc.org.uk)
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## Reflections on this public engagement programme

- Each of these events and projects resulted in the addition of names to the Forum's contacts database, **building up a broad audience** for informal but informed discussion of the social aspects of the new life sciences, and **establishing connections** which can be deepened through future outreach initiatives.
- Through the Social Sessions the Forum has **increased its existing profile** in the Edinburgh literary and cultural community. The programme has **raised awareness** of the Forum's concerns with key institutions and individuals in this community, and with interested members of the general public.
- Central to the success of the Social Sessions, Human Genre Project and other public events has been the **use of already established informal networks and formal institutions whose main focus is on literature rather than science** as such. This has allowed engagement of audiences who might otherwise have assumed that the concerns of the Genomics Forum were no concern of theirs.
- Genomics, genetics and biotechnology continue to shake up and reshape our understanding of human nature and our sense of identity, and enable governments and businesses to scrutinise, classify, and commodify ever more intimate aspects of our lives. The **need for writers and artists to reflect critically on and interpret these new challenges** can only become more urgent.
- **Social science institutions such as the Forum have a key role to play** in brokering relationships between literary and scientific communities, contributing their expertise to collaborative (artistic, sociological and scientific) reflection on emerging areas of science and technology, and promoting effective and innovative public engagement techniques.

The Genomics Policy and Research Forum is a novel ESRC-funded initiative dedicated to the development of links between social scientists and scientists working in the contemporary life sciences, and the connection of research in this area to policymakers, business, the media and civil society. The Genomics Forum is based at the University of Edinburgh and is part of the ESRC Genomics Network (EGN), a major ESRC investment spanning five of the UK's leading universities examining the development and use of the science and technologies of genomics. The EGN includes three ESRC funded Genomics Centres — Cesagen, Egenis and Innogen — as well as the Genomics Forum.

For further information visit [www.genomicsnetwork.ac.uk/forum](http://www.genomicsnetwork.ac.uk/forum) or contact:

**Dr Christine Knight, Policy Research Fellow**  
 ESRC Genomics Policy and Research Forum  
 University of Edinburgh  
 St John's Land, Holyrood Road  
 Edinburgh EH8 8AQ  
 Tel: +44 (0)131 651 4747 | Fax: +44 (0)131 651 4748  
 Email: [christine.knight@ed.ac.uk](mailto:christine.knight@ed.ac.uk)



# Engaging the public with genomics through literary networks and fan communities



Ken MacLeod, Writer in Residence, Genomics Forum

**Genomic science** – the cluster of new life sciences and technologies that has developed out of our understanding of the genome – has come to affect everyday life in many ways, from the use of DNA identification in crime detection to controversy over genetically modified food. Part of the remit of the ESRC Genomics Policy & Research Forum at the University of Edinburgh is to enable literary and artistic reflection on these issues. As part of this outreach, the Forum in 2009 employed two Writers in Residence: Pippa Goldschmidt, and award-winning Scottish science fiction author Ken MacLeod.

This briefing details the public engagement events and projects Ken has undertaken to date in his time at the Forum. These have drawn on Ken's existing literary networks in Edinburgh to engage individuals and groups who might not otherwise be interested in genomics, and therefore reached by other public engagement efforts.



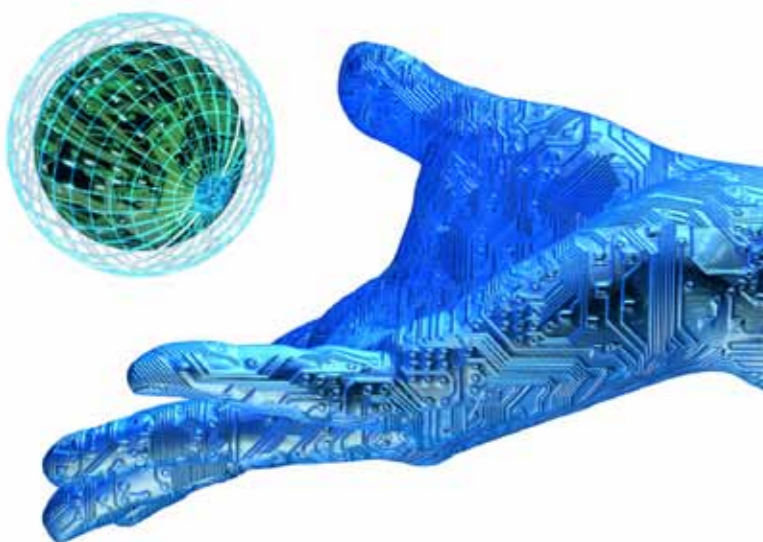
## Key points

- Alongside his own extensive writing and publishing activities, public engagement efforts undertaken by Ken during his time at the Genomics Forum have included a **series of public events examining the relationship between science and literature**, and the **Human Genre Project** ([www.humangenreproject.com](http://www.humangenreproject.com)), a website to which any writer can contribute a poem, short story or similar about genetics, arranged on the site by chromosome.
- These programmes **succeeded in broadening the Forum's engaged public** and increasing the organisation's existing profile in the Edinburgh literary and cultural community.
- Central to the success of the programme was the use of **already established informal networks and formal institutions whose main focus is on literature** rather than science as such, allowing engagement of new audiences with genomics.
- The **need for writers and artists to reflect critically on this new area of science** can only become more urgent. **Social science institutions like the Genomics Forum are key** in brokering relationships between literary and scientific communities; promoting effective and innovative public engagement techniques; and contributing sociological, historical and philosophical expertise to collaborative reflection.

As an Edinburgh-based science fiction writer with a number of friends and contacts in both the science fiction and mainstream literary worlds, Ken MacLeod has been able to use his residency at the Genomics Forum to extend the Forum's existing engagement with literature and art (most prominently through its longstanding sponsorship of events at the Edinburgh International Book Festival), by building relationships with some of the formal and informal institutions of Edinburgh's literary scene.

The capital city of Scotland, Edinburgh is the UNESCO City of Literature and site of an annual world-class Book Festival, and contains several interacting but distinct networks of writers and readers. The Book Festival,<sup>1</sup> relevant University departments,<sup>2</sup> Scottish Poetry Library,<sup>3</sup> City of Literature Trust,<sup>4</sup> and major bookshops are all important nodes in these networks. However, there are also less visible but no less enduring informal networks, whose institutions are groups of friends and acquaintances, ephemeral or irregular magazines, second-hand and specialist bookshops, and meetings or events in cafes and pubs.

*Ken writes:* One such informal institution, to which I already belong, is the local **science fiction fan community**. This has turned out to be very useful indeed for my public engagement work at the Genomics Forum, and may have lessons for other public engagement efforts. Contrary to the stereotype of the isolated, socially inept nerd, the organised networks of science fiction fans in any given city are likely to consist of people who are **well-informed about science**, who **talk to each other a great deal**, and who **talk to their friends, workmates, and families about topics related to science and its social consequences**. (They may talk too much, but that's another story!) In terms of public engagement, science fiction fans are an **already engaged public**.



## Science fiction and science fiction fandom

Science fiction has its roots in the satires and fantastic voyages found in the literature of antiquity, and in such works of exposition as Kepler's *Somnium* (1634) and More's *Utopia* (1516). Mary Shelley's *Frankenstein* (1818) spins a more popular and sensational take on scientific subject-matter, and the tradition of scientific romance culminated at the end of the 19th century and the beginning of the 20th with the works of Jules Verne and H. G. Wells. Soon afterwards in China, the beginning of the revolution in 1911 resulted in numerous fictional works in which science and engineering were projected as the path to a bright future. (Likewise, the recent period of 'reform and opening up' has seen a flourishing of science fiction in China, and the circulation of science fiction between the Chinese mainland, Hong Kong, and Taiwan.)

As a distinct and self-conscious genre, US critic Gary Westfahl has argued, science fiction began in the United States in the 1920s with the editorial work of Hugo Gernsback, a serial entrepreneur who — after launching several popular magazines on science and technology — appealed for more of 'that H. G. Wells, Jules Verne stuff' for his new venture, *Amazing Stories*. Gernsback's mission statement for the type of story he was looking for incorporated three elements. The story was to convey **scientific fact**, in a **popular narrative form**, with an eye to **social consequence**. By doing so, Gernsback claimed, science fiction would serve as a medium for public engagement with science, and would in turn stimulate science by providing 'thought experiments'; suggesting new devices to invent or new lines of potentially fruitful research; and showing possible social consequences (good or ill) of scientific and technological developments.

Gernsback opened his magazine's letters column to detailed criticism from readers, in a conscious imitation of the practice of science journals. He thereby created a new social phenomenon: **science fiction fandom**. His letter-writers began to write to each other; seek each other out socially; produce their own newsletters (fanzines); form groups, clubs and cliques; and hold meetings and conventions. Unlike other genres, written science fiction continues to exist in ongoing critical interaction with a **core of organised and active readers** who (crucially) see themselves, and are seen as, **engaged in the same enterprise as science fiction writers**.

## Ken reflects on using his Edinburgh literary connections to build public engagement events with the Genomics Forum

The Edinburgh literary scene — official and unofficial — is open and welcoming. My own acquaintance with it began in the mid-1990s when I met the poet and novelist Andrew Greig, then Writer in Residence at the University of Edinburgh. Andrew introduced me to a number of established writers, including Edwin Morgan, Ron Butlin, Lesley Glaister, Brian McCabe and Ian Rankin. I in turn introduced some of them to science fiction writers and fans in and around Edinburgh. Through our participation in the Book Festival, some of us were already acquainted with directors and senior staff of Edinburgh's official literary bodies: the Scottish Arts Council,<sup>5</sup> Book Festival and City of Literature Trust. Charles Stross, Andrew J. Wilson and I had already taken part (together and separately) in Book Festival events sponsored by the Genomics Forum over the previous few years.

The Forum's first **public event** of 2009 was called **Digital Evolution**,<sup>6</sup> a panel event that drew on interest in computer gaming to promote a discussion of synthetic biology. This had already been organised before my residency began, and was already being promoted through the Forum's contacts database and *The Skinny*, the local free listings magazine. My main contribution was to advertise the event on my own blog and arrange a mention on the blogs of Forbidden Planet (the chain of science fiction bookshops)<sup>7</sup> and Orbit Books (who publish my own novels).<sup>8</sup> The event drew a diverse and interested audience of about 70.

The next event I organised during my Forum residency was an **evening of readings of short stories with a genetic or genomic theme**, in collaboration with **Writers Bloc**, an Edinburgh-based 'performance reading' group.<sup>9</sup> The Bloc puts on three or four events a year, usually themed by dates such as Burns Night, Halloween or Valentine's Day, and focusing on science fiction and fantasy leavened by dark humour. In keeping with these traditions, the Forum's event with the Bloc was titled 'Mutant Scum'. Its highlight was Stefan Pearson's reading of 'D'ya Know Me?', a futuristic Trainspotting-style monologue about a man avoiding a work assignment and remaining congenially unemployed by falsifying his genetic data. Because much of the 60-strong audience were regulars at Writers Bloc events, the Genomics Forum was again able to bring its work to the attention of people who might not have turned up for a 'public engagement with science' event. We also used the event to publicise another initiative, the **Human Genre Project**.

## The Human Genre Project

The Human Genre Project ([www.humangenreproject.com](http://www.humangenreproject.com)) was inspired by a wall-chart mapping genes and their effects by chromosome, and also by the Periodic Table of Science Fiction — science fiction writer Michael Swanwick's online tour de force of 93 very short stories arranged by chemical element.<sup>10</sup> Based on these, Ken came up with the idea of a website on which poems and pieces of short fiction and non-fiction about genetics would be arranged by chromosome. The distinguished poet Laura-Gray Street kindly gave permission for two of her published poems to be used on the site, and the science fiction writers Adam Roberts and Ian Watson contributed short stories, thus 'seeding' the project. Shortly after its launch, the Human Genre Project was featured on Cory Doctorow's widely read tech culture site BoingBoing (<http://boingboing.net/>), resulting in multiplying links across the internet. The Human Genre Project website now carries over 70 pieces of writing in a wide range of forms, styles and genres, and continues to grow.

## The Social Sessions

In previous years the Forum had run a series of informal 'salons', in which an invited audience enjoyed drinks and discussion with the Forum's social scientists and artists and writers in residence. During Ken's residency these were renewed as the 'Social Sessions'.<sup>11</sup> Sessions were hosted by a range of venues, including the Edinburgh Central Library and Scottish Poetry Library.

**Session 1, 'The Laboratory of Dr Latour'**, explored the image of the scientist in literature and in science studies (the academic discipline that considers science from a social, philosophical and historical perspective). Speakers at this event included two social scientists and one natural scientist. Drawing on the Writers Bloc connection, Andrew Wilson gave dramatic readings from various works of science fiction, ranging from Wells' *The Island of Dr Moreau* (1896) to Paul McAuley's *The Secret of Life* (2001).

**Session 2, 'Dr Jekyll's DNA'**, focused on crime and genetics. Popular crime writers Ian Rankin and Lyn Anderson were key speakers, drawing an audience of over 100 for serious discussion of issues such as use of DNA evidence, DNA databases, and the alleged genetic predisposition to crime.

**Session 3, 'Base Pairs and Couplets'**, considered science as an inspiration for poetry. The panel consisted of well-known poets Brian McCabe and Ron Butlin; newly-established young poet Kelley Swain, whose first collection, *Darwin's Microscope*, had recently been published to widespread acclaim (Flambard, 2009); the Scottish Poetry Library's 'Reader in Residence' Ryan Van Winkle; PhD student Russell Jones, speaking on the

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