While COVID postponed the Hereditary Disease Foundation's 2020 conference, researchers and clinicians from around the globe were back in full force for the 2022 meeting. Almost 250 of the world's leading experts on Huntington's disease (HD) gathered in Boston from August 24-27, 2022 for HDF's 12th Milton Wexler Biennial Symposium to see old friends, share scientific findings, and discuss the newest theories in the field of HD research.

For earlier-stage researchers, the meeting kicked off a day early, with the inaugural Young Investigator Forum workshop. HDF-funded young investigators were invited to meet in person, share ideas, and continue the spirit that HDF has fostered since its beginning – training the next generation of researchers as experts in the HD field to move research forward and find treatments and cures for HD. Since the pandemic halted many, if not all in-person meetings, for many, this was their first HD meeting and opportunity to meet other. This next generation of experts gathered over dinner for casual introductions before meeting the next morning to share their work in structured talks followed by an HDF workshop-inspired roundtable discussion on big questions in their own research and the field as a whole.

Another new addition to the program this year was the collaboration with HDBuzz (https://en.hdbuzz.net/) – an online periodical that publishes articles about HD-related science and research news in plain language for the global HD community. The HDBuzz Editorial Board sat front row at the conference, live tweeting scientific updates in real time throughout the meeting.

The spirit of hope was embodied in HDF President Dr. Nancy Wexler's welcome remarks via video. She closed her message with the sentiment that, "A treatment for Huntington's disease is within our reach!" It's an incredibly exciting time in HD research that very much feels like we're on the precipice of breaking through the door with HD treatment options in hand.


Dr. Nancy Wexler

Compared to just 4 years ago when the last HDF symposium was held, the number of talks focused on bringing therapeutic treatments for HD forward has increased dramatically. In 2018, there were no talks given by pharmaceutical companies and only 3 talks that focused on a single possible treatment – the huntingtin-lowering drug tominersen (way back when it was still called RG6042) that was supported by a decade of pre-clinical work to get to that point.

This time around for HD2022, there were so many clinical talks that they had to be split into multiple sessions: talks were given by 8 pharmaceutical companies each working on their own potential therapeutic currently being tested in active clinical trials. Additionally, there were many more presentations about therapeutics in the pre-clinical pipeline. This truly underscores the hope in the field more than any other component of the week's meeting – in just 4 years, the field has surged forward with the momentum to test *many* potentially viable therapeutics for HD.

Clinical updates were followed by scientific updates on proteins that modify the age of onset, somatic expansion and CAG repeat instability, and the interplay between neurons and other cell types of the brain during HD. On day 1 of the meeting, Dr. Sarah Tabrizi delivered a keynote that asked the audience to consider the ideal time to treat HD, perhaps before the onset of detectable symptoms. The keynote on day 2 was given by Dr. Steve McCarroll, who presented data from human brains generously donated by HD families. His work provocatively suggests that the vulnerability of the cell type in the brain most affected by HD results not from the huntingtin gene itself, but rather because CAG repeats within the huntingtin gene increase in number as the disease progresses, challenging much of the thinking in the field. The day 3 keynote and last talk of the meeting was delivered by Dr. Gill Bates, who presented work accrued over the course of her career detailing the function of various fragments of the huntingtin protein. She has found that the very beginning of the huntingtin protein that harbors the CAG repeats forms a fragment on its own that is toxic, leading to protein clumps that cause lots of damage in HD mouse models.

The HD2022 meeting was filled with research updates using cutting-edge technology like robots and artificial intelligence, innovative revisions to molecular tools like harmless viruses that deliver cargo to the brain more widely at lower doses, and revelations about drugs that may be used to cause the contraction of the CAG repeats. Truly jaw-dropping work presented by the foremost leaders in the HD field!