Emily Howard’s music is known for its particular connection with science. She first won critical acclaim with *Magnetite* (“a structural tour de force” – *AllMusic*) commissioned by Liverpool European Capital of Culture 2008 for the Royal Liverpool Philharmonic Orchestra and Vasily Petrenko, the year she received the Paul Hamlyn Foundation Award for Composers. Her works are commissioned, performed and broadcast internationally by festivals and ensembles including the BBC Proms, New Scientist Live, Wien Modern, the London Symphony Orchestra, Bamberger Symphoniker and Birmingham Contemporary Music Group.

Her 2016 BBC Proms Commission *Torus (Concerto for Orchestra)*, described by *The Times* as “visionary” and by *The Guardian* as “one of this year’s finest new works”, won the orchestral category of the 2017 British Composer Awards. BBC Radio 3’s Record Review described Howard’s NMC Debut Disc *Magnetite* as “a confident, major orchestral debut”, hailing its “scientific ideas brilliantly articulated”.

Howard was a featured composer at the Aldeburgh Festival 2018 with the world premiere of her opera *To See The Invisible*, an Aldeburgh Festival Commission with a text by Selma Dimitrijevic after a short story by Robert Silverberg. She will present three new works in 2019: *The Anvil: An Elegy for Peterloo*, a major new work for orchestra, chorus and soloists with a text by Michael Symmons Roberts, commissioned by Manchester International Festival and BBC Philharmonic; a chamber work as part of a day-long exploration of the work of Ada Lovelace curated by the composer with Britten Sinfonia for the Barbican Centre; and a new orchestral score *Antisphere* for Sir Simon Rattle and the London Symphony Orchestra to open their 2019/20 season.

Orchestral writing is key to Howard’s work. LSO *UBS Soundscapes: Pioneers* commission *Solar* (“manages to suggest galactic power on a compact scale” – *The Financial Times*), received its world premiere with the London Symphony Orchestra conducted by Nicholas Collon at the Barbican Centre in 2010. In 2013 *Solar*
was given its Australian premiere (West Australian Symphony Orchestra / Paul Daniel) and had a further performance by the BBC Symphony Orchestra under Garry Walker; Axon, a BBC Radio 3 commission for the BBC Philharmonic and Juanjo Mena was first performed at The Bridgewater Hall, Manchester the same year. Further orchestral highlights include performances of Magnetite in the Musikverein (Tonkünstler Orchestra / Andrés Orozco-Estrada), Solar and Calculus of the Nervous System in the Wiener Konzerthaus (Vienna Radio Symphony Orchestra / Sir James MacMillan) during Howard’s international composer-focus at music festival Wien Modern 2011. WM Festival Commission Calculus of the Nervous System was given its UK premiere by the City of Birmingham Symphony Orchestra and Andris Nelsons at the 2012 BBC Proms while Mesmerism, a Diamond Jubilee commission for the Liverpool Mozart Orchestra with pianist Alexandra Dariescu, won a 2012 British Composer Award. More recently short orchestral work sphere received premiere performances given by the Bamberger Symphoniker conducted by Alondra de la Parra in Germany, March 2017.

Vocal music is another area of enormous interest. New Music 20x12 mini-opera, Zátopek!, a Second Movement commission for the London Cultural Olympiadi, text by Selma Dimitrijevic, was described as “a tremendous opera” on BBC 2’s The Review Show. Dramatic vocal work Ada sketches, text by Laura Tunbridge, received performances at the Royal Opera House’s Linbury Theatre given by Loré Lixenberg in 2012. Since then Howard has developed and led Ada sketches audience-interactive events with mathematician Lasse Rempe-Gillen at the Science Museum (Critics’ Choice, Time Out, London), the Oxford Mathematical Institute (Ada Lovelace Symposium 2015) and with the Oxford e-Research Centre at the Science in the City Festival, Manchester European City of Science 2016. Other vocal works include Howard’s 2013 songs for children BIG BUMS and Pi (a Pie?), commissioned by Opera North, and most recently the wordless ‘three-part song’ Threnos (2015) recorded by Lucy Goddard and Simon Whiteley and described in BBC Music Magazine as exemplifying “a deep concern for the human and the raw power of sound”.

Howard’s chamber music includes Masquerade written for clarinettist Mark Simpson and clarinet quintet Zugzwänge (Quatuor Danel / Nicholas Cox). In 2015 string quartet Afference for the Elias String Quartet premiered at London’s Wigmore Hall and Leviathan for Paris-based duo scapegoat received several performances including at the Huddersfield Contemporary Music Festival and as part of a North American Tour in May 2015. Most recently Chaos or Chess, for solo microtonal tuba, was developed in collaboration with Berlin-based tubist Jack Adler-McKean at the Darmstadt International Summer Course for New Music 2016 and premiered as part of Howard’s 2016 BBC Proms Extra Composer Conversation. The Music of Proof, a collaboration with mathematician Marcus du Sautoy (Simonyi Professor for the Public Understanding of Science, University of Oxford) and the Piatti String Quartet premiered at New Scientist Live 2017.

A graduate in mathematics and computer science from Oxford University, Howard holds a Masters in Composition from the Royal Northern College of Music (RNCM) and a Doctorate in Composition from the University of Manchester. In 2010 she became the inaugural UBS Composer in Residence in conjunction with the London Symphony Orchestra at the Bridge Academy, Hackney, a post she then mentored. She was Leverhulme Trust Artist in Residence at the University of Liverpool’s Department of Mathematical Sciences in 2015, and is a Visiting Senior Fellow at the Faculty of Sciences and Engineering, University of Liverpool and a Visiting Researcher at the University of Oxford’s e-Research Centre.

Emily Howard is Professor of Composition at the RNCM and Director of PRiSM, the RNCM Centre for Practice & Research in Science & Music. In 2019, she is a TORCH Visiting Research Fellow at the University of Oxford. Her music is available on several labels including Col Legno, Toccata Classics and NMC Recordings. Her works are published exclusively by Edition Peters.