SHAPED BY THE SEA
27-28 June 2019
HISTORIES OF OCEAN SCIENCE, MEDICINE AND TECHNOLOGY

CENTRE FOR THE HISTORY OF SCIENCE, TECHNOLOGY AND MEDICINE
UNIVERSITY OF MANCHESTER

#OceanHSTM
We are delighted to welcome you to *Shaped by the Sea: Histories of Ocean Science, Medicine and Technology* and are looking forward to a productive two days of sharing ideas, knowledge and experiences.

We are pleased to have been able to include a diverse list of attendees in terms of topic, institution, gender and career stage. As such we want to provide an environment which is safe, hospitable, and productive for everyone involved.

To make this experience as beneficial to speakers and guests alike, we ask you be mindful of the following suggestions regarding etiquette throughout the papers, in the breaks and at the evening reception:

**Presenters:**

- Stick to your allocated time.
- Ensure you can see your allocated chairperson who is your timekeeper.

**When asking questions of the presenters:**

- Avoid long, over-complicated interrogations.
- Time is limited so be mindful of other people wanting to ask questions.
- Avoid gearing your question to what you know about their research.

**In general discussions:**

- Offer advice and suggestions, rather than your own knowledge on the topic.
- Be mindful of different levels of confidence, academic experience and social anxiety.
- Avoid discussion on the perilous nature of the academic job market, we all know this, let’s focus on the joys of research.

**Social media:**

- Ask permission before tweeting as the content may be sensitive or subject to ethical restrictions.
PROGRAMME

THURSDAY

09.30  REGISTRATION

10.00  WELCOME ADDRESS

10.30  Panel 1: BODIES & MINDS AT SEA

Dr Karl-Heinz Reger (Schleswig, Christian Albrecht University of Kiel, Germany), 'Sent Home to England': 'Facts of the Sea' Shaping Medical Science

Daniela Egger (Ludwig Maximilian University of Munich), Shaped by Transit: The Maritime Experience of 19th Century Migrants from the United Kingdom to Australia

Dr Jennifer Kain (Newcastle University), Adrift in Medical Transit: Distressed British Seamen Abroad

12.00  LUNCH

13.00  Panel 2: LAND & SEA

Dr Stephanie Piper (Newcastle University), Maritime Pre-histories: Stone Age Seafarers of the European Atlantic

Dr Nanna K. L. Kaalund (Scott Polar Institute, University of Cambridge), The Arctic Travels and Scientific Practices of Tookoolito and Ebierbing

Andrew Morris (Vrije Universiteit Brussel), John Smeaton’s Experiments on Lime Mortar for the Construction of the Eddystone Lighthouse: The Role of Artisanal Knowledge

Helen Mair Rawsthorne (University of Western Brittany), The Development of Tide Prediction Machines

15.00  REFRESHMENTS
15.30  **Panel 3: TECHNOLOGY, POWER & EMPIRE**

Dr Philippa Hellawell (King’s College London), "Feeding the Sea with Stones": Engineering and Empire in English Tangier, c. 1662-84

Tom Kiernan (Newcastle University), Why Did Hellenistic Rulers Compete to Build Larger Warships and What Purpose Did These Warships Serve?

Dr Jonathan Stafford (University of Nottingham) *Imperialism at Sea: The Spatial Logic of Empire Aboard the Nineteenth-Century Colonial Steamship*

Aglaja Weindl (Ludwig Maximilian University of Munich), *A Prince and the Sea – Ships, Hierarchy and the World Tour of Archduke Franz Ferdinand of Austria-Este 1892/93*

17.30  **DAY END**

18.00  **RECEPTION**

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**FRIDAY**

09.00  **Panel 4: SAILOR HEALTH & DISABILITY**

Dr Sara Spike (University of New Brunswick), *Colour Blindness and the Medicalization of Sailors’ Vision in Late Nineteenth-Century Atlantic Canada*

Peter Phillipson (University of Hull), *Pioneers of Quality Assurance and Risk Mitigation: Assessing the Contribution of Lloyd’s Register Surveyors to Improvements in the Safety of Merchant Shipping, 1834-1881*

Prof Tim Carter (Norwegian Centre of Maritime and Diving Medicine, Bergen), *Who Cares About Seafarers’ Health? Perspectives from 1860-2014*

10.30  **REFRESHMENTS**
11.00    Panel 5: HEALTH IN PORT

Dr Cristiano Turbil (University College London), *Public Health at the Italian Seaside (1861-1900): Rimini’s Kursaal*

Elina Maaniitty (University of Helsinki), *Epidemics of a Coastal Town: Diseases and the Sea in Eighteenth-Century Helsinki*

Sesan Johnson (Obafemi Awolowo University), *Ibadan Water Bodies as Carriers and Transmitters of Disease: Historicizing Cholera Epidemics in Ibadan, 1970 – 1996 Remote Speaker*

12.30    LUNCH

13.30    Panel 6: UNDERSTANDING THE OCEAN

Dr John Woitkowitz (Scott Polar Research Institute, University of Cambridge), *August Petermann and the Speculative Geography of the Open Polar Sea*

Dr José Ragas (Pontificia Universidad Católica de Chile) *Reinventing the Cold: Maritime Ice Trade and Local Innovations in the Pacific Rim (Chile, 1860-1920) Remote Speaker*

Beatriz Martínez-Rius (Sorbonne Université), *When Oil Hit Geology: The Transformation of Marine Geosciences Research in the Mediterranean Basin (1965 - 1985)*

Rob Cullum (University of Aberystwyth), *Uncharted Waters: Examining Naval responses to climate change in the United States, Britain, and Australia*

15.30    REFRESHMENTS

16.00    Roundtable: SHAPED BY THE SEA

17.00    DAY END
Prof Tim Carter, Norwegian Centre of Maritime and Diving Medicine, Bergen

Tim Carter trained as an occupational physician and has worked in the petrochemical industry and as medical director of the UK Health and Safety Executive. He later moved to the Department for Transport, first advising on health aspects of transport safety, and then within the Maritime and Coastguard Agency as Chief Medical Adviser. He has worked with UN agencies and has held academic appointments in UK and, most recently as a professor at the Norwegian Centre for Maritime and Diving Medicine. He has a continuing interest in historical studies of occupational risks, especially from infectious diseases, and has published on a range of aspects of work related disease prevention and maritime health. He is now slowly retiring!


Seafarers themselves, ship owners, trade unions, maritime charities and the state all have an interest in the health of merchant seafarers (almost exclusively seamen for most of the period studied). One or other of these groups have, at times, actively sought to prevent disease and ensure the health of British merchant seafarers. Between these times there have been long periods of almost wilful neglect. My presentation will examine what have been the drivers for intervention in this area and look at the roles of public opinion, attitudes to labour, fears about importation of epidemic diseases and the strategic needs in times of war as spurs to action. The following vignettes will be used as the basis for analysis:

- Seamen’s health as a contributory cause for maritime accidents in the 1860s and specifically in relation to vision in the 1900s.
- The health of seafarers during the Second World War.

Analysis will be based on historical studies of merchant seamen’s health since 1860 and on personal experience of working in government agencies and departments as an adviser on occupational health risks.

Rob Cullum, Doctoral Student, University of Aberystwyth

Panel 6: Uncharted Waters: Examining Naval responses to climate change in the United States, Britain, and Australia

This project will answer the following question: Why and how do the US, Australian, and British navies understand climate change, and how does that understanding relate to policy outcomes? This question will pursue an understanding of how the chosen case-study navies
construct an image of climate change, how they view it impacting their operations and environment, and how they plan to respond to these impacts.

There are a range of sub-questions that emerge from the main research question, including: How can structural explanations account for the navies’ approach to climate change? How can organisational-culture explanations account for the same phenomena? What does understanding navies’ construction of climate change as an issue worthy of their attention tell us about their relationship to scientific concepts and broader social knowledge? How do the navies’ efforts to combat climate change relate to their political context, and in which climate change may be a contested concept? Do the various case study navies share assumptions about climate change, and what does this tell us about their relationship to one another?

Daniela Egger, Doctoral Student, Ludwig-Maximilian-University, Munich

Daniela Egger studied History, English, and Latin at Heidelberg University and is now a researcher at the Chair for Modern History at Ludwig-Maximilians-University, Munich. Since 2017, she is a member of the joint DFG-SNF-research project “Lives in Transit” in cooperation with the University of Zurich. In her PhD project, she is working on the perceived and felt experience of 19th century migrants traveling to the Australian colonies, thus adding hitherto neglected aspects to the current understanding of ‘transit’. Her research interests include the history of the British Empire, global history, the history of emotions, and maritime history.

Panel 1: Shaped by Transit: The Maritime Experience of 19th Century Migrants from the United Kingdom to Australia

With endless waters surrounding them, for most people on board emigrant vessels in the 19th century, the sheer expanse of their surroundings stood in stark contrast to the everyday reality of cramped berths, rationed meals, and constant noise in the narrow passenger cabins or down below in the crowded steerage compartments. Contradictory experiences marked this transit period more than anything else, thus challenging and affecting body, mind, and soul of the seafaring travellers. Nevertheless, thousands of men, women, and children embarked sailing vessels and steamships in the United Kingdom to start a new life on the other side of the world. Making the longest continuous sea voyage of all the British Empire’s colonial emigration destinations, the Australian bound emigrant ship therefore offers a peculiar laboratory for investigating how the oceanic environment impacted on health, memory, and feelings.

For many, the weeks spent aboard offered the only opportunity to take up paper and ink, and start to write. Diaries and letters were produced - waiting to be sent back home after the maritime interlude -this inevitable barrier to be overcome before reaching Down
Under. Although emigrant guides officially prepared prospective settlers for upcoming struggles, colonial institutions theoretically ensured safety, and private societies sold manuals to be consulted on board, the sea remained unpredictable. It not only questioned long-established routines of work and order, it also imposed a completely new system on the randomly collected community of fate. Storms, doldrums and seasickness occurred during almost every voyage, but each individual reacted differently, displaying emotions, and inventing strategies to cope with similar stress valves. My paper seeks to identify the opposites characterising such a transit experience and the ways in which migrants of different class, gender, age and nationality responded to and were shaped by the unique maritime setting they found themselves in.

Dr Philippa Hellawell, Early Career Development Fellow, King’s College London.

Dr Philippa Hellawell is an Early Career Development Fellow at King’s College London. She studied for her BA and MA at the University of York before moving to King’s College London to pursue her doctoral studies. Philippa subsequently worked as a Teaching Fellow in the History of Science and Medicine at the University of York and was awarded the Caird Senior Research Fellowship at the National Maritime Museum in 2017-8. Philippa’s research examines the role of science, technology and medicine in the early modern maritime world and how this related to wider issues of state, commerce and society in seventeenth and eighteenth-century Britain.

Panel 2: “Feeding the Sea with Stones”: Engineering and Empire in English Tangier, c. 1662-84

For a brief period in the late seventeenth century, Tangier was an English overseas possession. Central to its function as a colony were plans for the erection of a breakwater or ‘mole’, which would facilitate the crown’s imperial vision of Tangier as a thriving free port at the junction of the Atlantic and Mediterranean. Situated on the Strait of Gibraltar, Tangier was an open bay often at the mercy of heavy storms and strong tidal currents and the construction of the mole was deemed necessary in order to transform the city into a viable port. Hundreds of skilled workers and materials were transported from England to Tangier to build the mole, where rival engineers experimented with different methods of construction to attempt ‘to create land from sea’. This paper will examine the processes and challenges of building a seventeenth-century breakwater, documenting the workers, expertise, materials and capital necessary to convert ideas into action. From unpredictable oceanic storms to unstable financing from the royal exchequer, the mole constantly evolved around external pressures. It thus provides a rich insight into the role of engineers and engineering, and by extension the history of technology, in maritime empire-building.
Sesan Michael Johnson is a budding researcher. He is a News Analyst at Impact Business Radio, Ibadan, Nigeria and a Research Fellow of IFRA, Nigeria. His research focuses on Historical Science, Public Health History, Medical Humanities and Environmental History. In March 2018 he received an International Student Scholarship Award (Brian Bertoti Awards) from Virginia University of Technology and Polytechnic for innovation in historical scholarship. In January 2018, he presented a paper titled: ‘Recasting Historical Epistemology and Scientific Discourse in Africa’ at the Toyin Falola at 65 Conference held at University of Ibadan, Nigeria. In recent times, his academic papers have been accepted for reading by the likes of Oxford University; Virginia Tech, USA; Manchester University, UK; University of Otago, New Zealand; Exeter University, UK; Virginia State University USA; Ben Gurion University of Negev, Israel; etc.


Lagos is coastal city separated by creeks, lagoons and islands with proximity to the Atlantic oceans. Remarkably, From Lagos, cholera spread to Ibadan in December 1970. The city of Ibadan is naturally drained by four rivers: Ona River in the North and West; Ogbere River towards the East; Ogunpa River flowing through the city and Kudeti River in the Central part of the metropolis. Coupled with these, Eleyele Lake is located at the northwestern part of the city, while the Osun River and the Asejire Lake bounds the city to the east.

Within the cycles of public health problematic, these rivers in Ibadan were centres of open defecation for both adults and children. When residents were not lining up at the river side to defecate at night or early in the morning, they usually resulted to defecating inside old newspapers or nyons or leaf wrappers of moin-moin/eko. Hence, Kudeti River and other rivers in Ibadan had served as the carriers and transmitters of cholera. These water bodies were not only used as places for open defecation, they also served as source of drinking water and water for washing. Consequently, this made the spread of cholera whenever it occurred to be attended with rapidity. Characteristically, since cholera is a travellers’ disease, the diffusion of cholera within Ibadan and to other small towns followed the river routes. The study employs both primary and secondary sources of data. The interpretation is both narrative and descriptive. The crux of this paper is that Africa and African historians need to refigure the image of history of public health particularly in our understanding of the intersections between water bodies, the environment and diseases, as well as the attending paradoxes and corollaries in public health vis-a-vis cholera epidemics and its effects on the people of Ibadan.
Dr Nanna K. L. Kaalund  Postdoctoral Research Associate, Scott Polar Institute, University of Cambridge

Nanna K. L. Kaalund is a Postdoctoral Research Associate at the Scott Polar Research Institute, University of Cambridge, working as part of the ERC funded 'Arctic Cultures' project. She received her PhD from the postgraduate program in Science and Technology Studies at York University, Canada in 2017. Her research centres on the intersection of Arctic exploration, print culture, science, religion, and medicine in the modern period with a focus on the British and Danish imperial worlds.

Panel 2: The Arctic Travels and Scientific Practices of Tookoolito and Ebierbing,

In 1857 the American publisher Charles Francis Hall travelled from Connecticut to the Arctic with the whaling Captain Sidney Budington. Hall had no formal scientific or naval training, but he was convinced that by immersing himself in Inuit cultures he would be able to undertake Arctic exploration in a cheaper, safer, and more efficient way. He spent the winter in Baffin Island, where he met Tookoolito (Hannah) and Ebierbing (Joe), a married Inuit couple who had previously spent two years in England. When Hall returned to America, he brought Tookoolito and Ebierbing with him, and they accompanied Hall on all of his future Arctic expeditions. ‘Accompanied’ or ‘employed by’ are typically the terms used to describe their working relationship. However, this designation does not do justice to the contributions of Tookoolito and Ebierbing. Rather, they were Hall’s teachers, and they had an active role in the planning and execution of Hall’s Arctic travels. As Hall switched between utilizing Tookoolito and Ebierbing as ethnographic specimens by displaying them in his lecture tours, and relying on them not only for ensuring the success of his expeditions but for his survival, the unequal power-dynamic was continuously transformed and renegotiated during their voyages. In this paper, I examine the contributions of Tookoolito and Ebierbing to Hall’s Arctic expeditions, focusing on the relationship between scientific practice and the lived experiences of Arctic ocean and over-land travel. In particular, I interrogate the ethnographic, linguistic and geographical work of Tookoolito and Ebierbing, and the way Hall translated this into his own scientific results.

Dr Jennifer Kain, Newcastle University

Jen Kain received her PhD from Northumbria University in 2015 after which she held the Pearsall JRF in Maritime History at the IHR between 2016-2017. Her first monograph based on her PhD thesis, entitled Insanity and Immigration Control in New Zealand and Australia, 1860 to 1930 is due to be published at the end of the year. She currently teaches history at Newcastle University,
where in the autumn she is convening her own module on New Zealand history. Jen's research interests include health related border controls, especially pertaining to mental illnesses.

**Panel 1: Adrift in Medical Transit: Distressed British Seamen Abroad**

This paper argues the case for using medical bureaucratic sources as a method of exposing the experiences of merchant seamen who became incapable of work. It considers the ‘distressed seamen’ provisions within the early twentieth century version of the British Merchant Shipping Act. In presenting a number of cases from the 1920s in which seamen became ‘mentally distressed’ abroad, it details the practical and administrative challenges of returning them home. Overseas officials, shipping companies, local medical providers and family members had to manage the financial repercussions of this repatriation.

**Tom Kiernan, Postgraduate Student, Ancient History, Newcastle University**

**Panel 3: Why Did Hellenistic Rulers Compete to Build Larger Warships and What Purpose Did These Warships Serve?**

The launching of the trireme ‘Olympias’ in 1987, designed by Coates and Morrison, finally provided answers as to the exact nature, design and performance of ancient warships. However, despite being considered the most iconic warship of antiquity the trireme began to be superseded by the 4th century BC by the appearance of increasingly larger and more complex designs. Whilst the launch of ‘Olympias’ could have sparked renewed interest in ancient warships, the passing of two major scholars in the field, Morrison and Casson, has led to a decrease in interest in the 21st century. In 2012 William Murray published ‘The Age of Titans’, an investigation of the large warships of the Hellenistic period. Using Murray's work as a springboard, this paper aims to explore the giant warships of the Hellenistic period, why they were built, how they operated, and the purposes they served. Using past and current scholarship, alongside the growing understanding of ancient shipbuilding, this paper will explore three lines of investigation. The first is that these vessels were intended to use their size and weight to overcome smaller ships in sea battles, be it through ramming or boarding tactics. The second argument is that these vessels were intended as naval siege platforms, their size allowing them to carry siege equipment to capture the coastal cities of the eastern Mediterranean. The last argument is that these vessels were built primarily as elaborate prestige pieces, intended to act as mobile floating embodiments of the 'ship of state' metaphor. A greater understanding of these vessels and their context will provide a greater understanding of how the sea shaped the modes in which Hellenistic kings interacted, competed and presented themselves in the eastern Mediterranean between 323-31 BC.
Elina Maaniitty, Doctoral Student, University of Helsinki

Elina Maaniitty (born 1989) is a doctoral student in the University of Helsinki. She is currently working in the Academy of Finland project Agents of Enlightenment and writing her thesis on disease epidemics and medical science in eighteenth-century Sweden and Finland. Her main research interests are historical demography, medical history, and maritime history.

Panel 5: Epidemics of a Coastal Town: Diseases and the Sea in Eighteenth-Century Helsinki

In 1710, Helsinki was hit by the last plague epidemic of the Baltic region. The outbreak was largely a result of the Great Northern war; it is estimated that in 1710 and 1711, a third of the population of Helsinki perished. At the end of the century, in 1788–1791, the town saw another devastating epidemic, again due to warfare and the maritime transportation of troops. Typhus was brought to the sea fortress Sveaborg on a captured Russian warship and spread quickly to the town. The epidemic raged for two years and spread even further inland, and was carried by the Swedish navy and army around the kingdom. Throughout the eighteenth century, the medical and demographic history of Helsinki was largely shaped by its location on the coast and its nature as a naval port and a centre of trade. After the 1740s, both the number of inhabitants and the strategic importance of the town grew, as Sveaborg was built on the islands right next to Helsinki. The severely overcrowded, damp garrisons of Sveaborg were an ongoing health risk. The town was an important trade hub to which people travelled from the surrounding rural areas, whilst also attracting merchants and other travellers from nearby Swedish and Baltic regions.

In my presentation I analyse the demographic history, particularly the disease epidemics, of Helsinki during the eighteenth century, and the central role the sea played in them. I also describe how this role was understood by the era’s medical scientists and other contemporaries, and how maritime movement and trade was taken into account in the measures proposed to prevent disease outbreaks.

Beatriz Martínez-Rius, Doctoral Student, Institut des Sciences de la Terre de Paris, Sorbonne Université

I’m a first year PhD candidate in History of Science at Sorbonne Université (Paris). My PhD is framed in the ETN project Saltgiant, a scientific project funded by the European Union, which aims to explore the geological history of the Mediterranean basin by bringing together researchers from different disciplines, including history of science. My research project is focused on the

Between the mid-1960s and the mid-1980s, the Mediterranean’s deep seafloor went from being an unreachable and only-imagined place, to became a detailed geological formation, with its particular history, structure and dynamics. This transformation was driven by an intensive exploration of offshore hydrocarbons around the world, which started in the wake of the Second World War. In European coastal countries, the sudden spur of interest in the geology of the Mediterranean basin triggered investments in marine geosciences research by public and private institutions. These contributed to new relationships of financing and cooperation among research centres, oil companies and government agencies. These new alliances, as I will argue, deeply transformed the practices of the scientific communities involved.

This paper aims to explore how the geologists’ cooperation with the oil industry contributed to the enhancement of the knowledge of the Mediterranean basin; while examining how that cooperation, based on flows of data, technologies and expertise, transformed the technoscientific practices of those scientific communities. I will do so by focusing on the case of a particular group of French geologists, who were involved in government’s research projects which encouraged the cooperation between private and public institutions. However, while this period of offshore exploration came to an end in the late 1980s, the patterns of collaboration established with the oil industry were going to remain until our days.

Andrew Morris, Doctoral Student, Centre for Logic and Philosophy of Science at the Vrije Universiteit Brussel

Andrew M. A. Morris is in the first year of a PhD at the Vrije Universiteit Brussel, on the subject of English engineer John Smeaton’s scientific methodology. He has a background in philosophy, which he studied at the University of Warwick (BA), KU Leuven, and the Université libre de Bruxelles (MA). His research focus is on the eighteenth-century history of science, history and philosophy of technology, and scientific methodology in the early Industrial Revolution. His preliminary research on this topic has been published as ‘John Smeaton and the vis viva controversy’ in History of Science 56(2).
Panel 2: John Smeaton’s Experiments on Lime Mortar for the Construction of the Eddystone Lighthouse: The Role of Artisanal Knowledge

When the English engineer John Smeaton (1724-1792) was commissioned to build the Eddystone Lighthouse in the 1750s, the difficult conditions of the lighthouse environment persuaded him to carry out experiments to improve the quality of the mortar used, which led him to develop hydraulic lime. In this talk, I would like to focus on Smeaton’s experimental method, with particular emphasis on the relationship with artisanal knowledge. This discussion will have three inter-related parts.

First, I will explore Smeaton’s method of systematic parameter variation, and compare it with the related, but more ad hoc approach of trial-and-error, which has typically been associated with artisanal knowledge. This discussion will focus on issues related to the philosophy of science. Second, I will turn to look at Smeaton’s own relationship with the “workmen,” the artisans and practical mechanics whose ideas he claimed to challenge in his experiments on clay. Here, I will introduce some social, political and commercial issues to the discussion. Finally, Smeaton did not only carry out his own experiments, he also travelled extensively to investigate the use of different materials in the construction of ports and lighthouses around Britain. I would like to frame my discussion of artisanal knowledge by considering Smeaton’s relationship with artisans in light of his evidently great respect for their handiwork – this despite any reservations he might have had regarding their theoretical knowledge.

Peter Phillipson, Doctoral Student, University of Hull

Peter Phillipson is a first-year doctoral student and recipient of the University of Hull & Lloyds Register Foundation Thomas Chapman Scholarship. He previously worked as a Chartered Structural Engineer until early retirement in 2008.

Panel 4: Pioneers of Quality Assurance and Risk Mitigation: Assessing the Contribution of Lloyd’s Register Surveyors to Improvements in the Safety of Merchant Shipping, 1834-1881

Using evidence derived from the Lloyd’s Register Foundation’s archives, this paper suggests that the London-based ship classification society pioneered what would now be termed quality assurance and risk mitigation in an epoch when the growth and technological development of shipping increased the dangers inherent in operating sea-going vessels. During the period 1834-1881, Lloyd’s Register surveyors not only undertook the classification of merchant vessels on a truly global scale, but also at a particularly challenging time, when traditionally-built wooden sailing ships were progressively being superseded by iron-hulled steamships, designed according to
engineering principles. It can be argued that their work helped shape the path of nineteenth century technological development far beyond the maritime sphere and even today offers beneficial insights into the successful management of changing technology.

**Dr Stephanie Piper, Lecturer in Prehistoric Archaeology, Newcastle University**

I am a Lecturer in Prehistoric Archaeology at Newcastle University. My love of boats and coastal archaeology grew out of my involvement in archaeological excavations in the Channel Islands, on Cyprus, and islands of the Inner and Outer Hebrides when I was a student. My specialism is in stone tool technology of the Scottish Mesolithic, and my research involves using the movement of 'things' between islands, coasts and the interior to infer the movement of people.

**Panel 2: Maritime Pre-histories: Stone Age Seafarers of the European Atlantic**

The abundance of early prehistoric archaeological sites on Atlantic-facing islands and coasts of north-west Europe demonstrates that a maritime way of life emerged soon after the last Ice Age. Following the retreat of the glaciers, coastlines were rapidly colonised, and both human and animal remains attest to a heavily marine-oriented diet. The earliest boats from Europe are dated to c. 9,000 years ago, however recent archaeological discoveries have pushed human occupation in the islands of the Inner Hebrides of Scotland and Ireland to as early as 12,000 years ago.

This paper presents a brief synthesis of the range of evidence archaeologists have used to understand early hunter-gatherer colonisation of islands and coasts along the Atlantic fringe. Different boat technologies including skin, bark and log boats have been proposed based on archaeological evidence, experimental archaeology, and from more recent ethnographies. Furthermore, the movement of people between these islands can be inferred through the movement of different stone tool raw materials, which highlight networks of exchange; regional identities may be suggested by an apparent lack of contact between Ireland and Scotland. The monumental standing stone architecture of later prehistoric periods attests to the continued importance of coastal connections in the movement of people and ideas. The lives and identities of Atlantic communities continue to be Shaped by the Sea, and the construction of these identities begins with their pre-history.
Dr José Ragas, Instituto de Historia – Pontificia Universidad Católica de Chile

Panel 6: Reinventing the Cold: Maritime Ice Trade and Local Innovations in the Pacific Rim (Chile, 1860-1920)

This paper investigates the nascent ice trade industry in the Pacific Rim during the second half of the nineteenth century. Although the origins of the industry are still debated by scholars, it is likely that the transition from the end of the Little Ice Age to the current era of global warming may have boosted the global trade of glaciers and “harvested” ice. This commerce spread from Alaska to Patagonia and from Massachusetts to India. Maritime spaces posed several challenges to the proponents of the industry, who developed novel techniques and infrastructure such as refrigerated storage, refurbished vessels, new sea routes, and innovative skills to insulate its precious yet fragile cargo.

Modest in total revenue and volume in comparison to other commodities, maritime ice trade represents an early global response to climate change. Although it lived shortly – just a few decades until the first decades of the 20th century – the transportation of glaciers and large blocks of ice has been invoked nowadays as an alternative to provide water in areas running out of fresh water like Cape Town and the United Arab Emirates. As this paper suggests, the Chilean case offers an intriguing example of how technoscience was embraced by a peripheral nation in order to renegotiate its position in the global market, shedding light on the changing geopolitics of maritime transportation and the transformation of nature into desirable commodities.

Helen Mair Rawsthorne, Postgraduate Student, History of Science and Technology, University of Western Brittany

Helen is studying for a Master’s degree in the cultural history of science and technology, digital humanities and scientific mediation at the University of Western Brittany in Brest, north-west France. She graduated from the University of Bristol in 2017 with a Bachelor’s degree in Physics.

Panel 2: The Development of Tide Prediction Machines

Tide Prediction Machines (TPMs) are analogue computers that were used to predict the times of high and low tides worldwide from the end of the 1800s up to the digital age. The first TPM was designed by William Thomson (later Lord Kelvin) and built in London in 1873. It was developed as a response to increasing pressure from commercial shipping lines towards the middle of the 19th century who wanted a greater number of more accurate tidal predictions more quickly than could be calculated by hand. As well as helping shipping lines and navies to safely navigate the seas and the shores, TPMs became crucial to the building of ports and effective flood defences. Most of the 33 TPMs ever built were constructed in the UK but were then shipped to other countries who wanted...
to do their own calculations. Oceanographers Joseph Proudman and Arthur Doodson of Liverpool Observatory and Tidal Institute contributed significantly to the development of tidal analysis and to the evolution of TPMs. They and the institution thus gained a worldwide reputation for tidal research and prediction. TPMs were always operated on land, in some cases over 1000 km from the nearest sea or ocean. Prosopography is a research approach usually used by historians to study the lives of groups of people. Given the analogies with human groups, the research hypothesis is that it is possible to apply prosopographic methods to analyse the life cycle of TPMs, from the motivation for producing them to their status after decommissioning and replacement by newer technology. The aim is to find and analyse the common features in the lives of TPMs, which will give an appreciation of their importance, the extent of their use and usefulness, and an impression of the shape of their lives.

Dr Karl-Heinz Reger, Schleswig, Christian Albrecht University of Kiel, Germany

MD 1981, 10 years work in hospital for surgery, obstetrics and internal medicine. Then 6 years training of psychiatry and neurology at the University of Luebeck, and for not less than 27 years I have worked in my own practice in Schleswig in Northern Germany near the Danish border. Special interest in systemic family therapy and psychotherapy with the elderly.

Studying philosophy at University of Kiel, research in phenomenology (Prof. Manfred Sommer) and social and psychiatric history. PhD 2012, thesis on Psychological Situation on Board Ships (Prof. Martin Krieger).

Panel 1: 'Sent Home to England': 'Facts of the Sea' Shaping Medical Science

In a study about the psychology of everyday life and psychological illnesses on board ships in the 19th century the author not only examined the living condition of “the hands” on board, but also the role of the surgeons and their diagnostical and therapeutic options regarding psychopathological problems. The speaker, being both a historian and a psychiatrist in his own practice, was able to extract obvious and hidden psychological information out of 10,000 manuscript pages from Medical Journals of the East India Royal Navy Station. The period from 1830 - 1880 has been completely covered. In the lecture the coping strategies of the crew will be outlined regarding the specific psychological, physical and social background of a ship. Coping strategies were e.g. identification and projection, sublimation and displacement, denial, frustration tolerance and deferral of drive. Conscious expectations as well as the unconscious transference onto the doctor on board could also be deduced from the Journals. In this sense he was the “good father” in contrast to the “strict father” – the captain and commander. All these data were unanimously, precisely and in a highly differentiated way transferred to
the Admiralty in London by means of the Statistical Reports. Thus these “facts of the sea” shaped medical science, social patterns, and politics in general, because the data flow was huge and the good medical care on board Her Majesty’s Ships was highly esteemed.

Dr Sara Spike, Postdoctoral Fellow, University of New Brunswick

Sara Spike is a cultural historian of rural and coastal communities in Atlantic Canada. Her research frequently explores visual and sensory cultures and environmental histories. She received her PhD in 2016 from Carleton University, Ottawa, and is currently a Canadian-government-funded Postdoctoral Fellow in the Department of History at the University of New Brunswick, Fredericton, where she is writing a cultural history of fog in Atlantic Canada.

Panel 4: Colour Blindness and the Medicalization of Sailors’ Vision in Late Nineteenth-Century Atlantic Canada

Centred on an 1895 government inquiry about harbour pilotage in Atlantic Canada, this paper considers new anxieties emergent in the late nineteenth century about the eyesight of sailors at sea and along the coast. The increasing rate of steamship traffic along the Atlantic coast of Canada, as elsewhere in the world, including greater speed and number of vessels, heightened the potential for accidents. In response, the Canadian government updated and expanded its coastal navigation infrastructure, while increased scrutiny also fell upon the bodies and capacities of sailors. For instance, newly professionalizing ophthalmologists, who were eager to establish themselves as experts in a political arena, brought the threat of colour blind sailors to public attention. They noted that navigation at sea was reliant on the apprehension of red and green lights, indistinguishable to those with common forms of colour blindness, and predicted untold dangers should the condition remain unregulated. The British Board of Trade, which regulated Canadian waters, introduced colour-vision testing for Masters and Mates in 1877, and added a voluntary program for all sailors in 1880, but ophthalmologists nevertheless struggled to convince the Board and ship owners of the need for strict discipline on the issue, mainly because they were unable to prove that defective colour vision had ever caused an accident at sea. Moreover, the medicalized model of vision proposed by doctors, and their desire to stabilize vision as a strictly physiological process—either functioning or defective—was in tension with the way that sailors understood their everyday practices of seeing at sea.

For sailors, seafaring and coasting knowledge was a multi-sensory performance of vision augmented by a lifetime of embodied experience. This paper uses these tensions to explore late nineteenth-century transformations in both ophthalmology and seafaring, as they played out on the coast of Atlantic Canada and across the British world.
Dr Jonathan Stafford, Postdoctoral Fellow, University of Nottingham

Jonathan Stafford is an interdisciplinary scholar of the sea, with a particular focus on maritime mobilities, landscape and culture. His PhD (2015) examined the heterodox narratives of modernity presented by nineteenth-century colonial steamship connections with the East. He is currently a Postdoctoral Research Fellow in the Department of Culture, Media and Visual Studies at the University of Nottingham.

Panel 3: Imperialism at Sea: The Spatial Logic of Empire Aboard the Nineteenth-Century Colonial Steamship

In 1842, the Peninsular and Oriental Steam Navigation Company, or P&O, inaugurated the first regular steamship service to India and the Far East via Egypt. Using texts produced by the passengers who undertook the voyage East on what became known as the Overland Route, this paper will explore the colonial steamer as a distinctive cultural sphere, considering the spatial and social practices which developed aboard ship while in transit. Scrutinising the colonial steamship affords the opportunity to investigate a space which was neither imperial centre nor periphery, but which in acting as a link between the two, set up a transient microcosm. These ships can be seen as exemplary environments of nineteenth-century imperialism, both negotiating global space and also simultaneously refiguring imperial social practices in their own space. Demarcated and objectified according to the complexities of class, race, gender and labour, the steamship exhibited in microcosm the logic of imperialism. During passage, a temporary community came into being which exemplified the contradictions at the heart of the imperial project, expressed in the way in which the movement of bodies through space was organised. The consequences of a departure from sail power gave rise not simply to a transitional society at sea on a new scale and at a greater velocity, but facilitated structural change which allowed for a new kind of specifically modern, idiosyncratically imperial environment, in which passengers – and the subaltern workers whose labour made the steamer’s unprecedented mobility possible – reinforced and recoded aspects of control through performative instances of imperialism.

Dr Cristiano Turbil, Teaching Fellow, University College London

Panel 5: Public Health at the Italian Seaside (1861-1900): Rimini’s Kursaal

Following the unification of the country in 1861, Italy started a long series of public health reforms. These involved new national health campaigns aimed at modernising and bringing the country together; the establishment of a self-help culture to increase medical literacy among the general public and the creation of new medical institutes all across the
peninsula. In this respect, the sea played a key role in the development of Italian public health.

The aim of this paper is to look at the scientific, medical and political significance of the creation of the first seaside public health resort in Italy. Directed by Paolo Mantegazza, the father of Italian hygiene, the Rimini’s Kursaal (from German ‘house of health’) was created with the aim to become the most important health seaside resort in the country. Combining, his expertise in medicine and anthropology with his political activism, Mantegazza saw the seaside resort as the perfect place where modern medicine and science could be combined with various hedonistic pleasures to heal and stimulate both the body and the mind. These included a diet based on seaside and neurotic foods, gymnast, dancing but also attending lectures and reading groups etc. The history of the Kursaal offers an insight into the complex cultural and political role played by medicine in shaping the country after unification.

Aglaja Weindl, Doctoral Student, Ludwig-Maximilian-University, Munich

Aglaja Weindl studied History, Literature and Art History in Munich and Paris. She is now a researcher at the Chair for Modern History at Ludwig Maximilian University, Munich. Since 2018, she is a member of the joint DFG-SNF-research project “Lives in Transit” in cooperation with the University of Zurich. Her PhD project deals with the world tour of Archduke Franz Ferdinand of Austria in 1892/93, focusing on the experience of living in transit during a long maritime voyage and thus connecting global and royal history in her research.

Panel 3: A Prince and the Sea – Ships, Hierarchy and the World Tour of Archduke Franz Ferdinand of Austria-Este 1892/93

Mobility and transit have long been key elements in the framework within which societies (re-) invent themselves and negotiate hierarchies. This holds especially true for maritime settings. The impact of transit on individuals and their outlook on societal hierarchy and social standing could be substantial as passengers found themselves as members of a temporary, artificial community. In this microcosm, land-based understandings of social relations and hierarchies had to be adapted to life on board and thus were in need of re-negotiating. Consequently, the isolated phase of transit took on a formative character, becoming the stage of both group- and identity-building processes and the deconstruction and reinvention of societal hierarchies.

In my case study, I examine the negotiation of concepts of hierarchy during transit in different settings with the same protagonists. Touring the world in 1892/93, Archduke Franz Ferdinand of Austria, heir to the Habsburg Empire, was confronted with various hierarchical settings on board the ships he travelled as well as contradictory
understandings of class and social standing. Undertaking the first part of the tour on the Austrian Navy’s newest vessel was a conscious performance of status and authority of both Franz Ferdinand and the country he represented. However, this almost feudal hierarchy at sea clashed with the usual maritime hierarchy and led to problems such as insubordination. After changing ships in Japan, the archduke sailed incognito on civilian ocean liners for the remains of his tour. Here, he had to find a place in the hitherto unknown democratic structure of an Anglo-Saxon passenger ship, resulting in a new, but not necessarily favourable understanding of hierarchy and class on his side. Hierarchy on a ship with royal cargo on board thus proved to be a fragile issue, which had to be balanced out - especially during transit -, confirming the thesis that hierarchies are convertible systems.

Dr John Woitkowitz, Scott Polar Research Institute, University of Cambridge

Panel 6: August Petermann and the Speculative Geography of the Open Polar Sea

This paper discusses the speculative geography of the open polar sea through the lens of the German cartographer and geographer August Heinrich Petermann. Petermann learned his trade as an apprentice within the early nineteenth-century scientific nexus of Alexander von Humboldt, Heinrich Berghaus, and Carl Ritter in Potsdam and Berlin. Drawing on the cartographic techniques of visualising field data ranging from diverse disciplines as meteorology, oceanography, zoology as well as the historical accounts of whalers, seal hunters, missionaries, explorers, and indigenous peoples, Petermann advocated for the existence of an ice-free, navigable body of water across the Arctic. Weaving together field observations and theories stipulating the global distribution of temperatures, animal life, and the nature of ocean currents, the German cartographer, moreover, argued for the cross-polar expansion of the Greenlandic landmass, exerting great influence over the polar imaginations and the scientific discourses with respect to the Arctic Ocean. Expeditions from Prussia, Austria, the United Kingdom, and the United States subscribed to Petermann’s theories and attempted to access the open polar sea via the Greenlandic Sea, the Bering Sea or the Northeast Passage. Accordingly, this paper situates Petermann’s speculative geography within the larger framework of the emergence of field sciences, disciplinary geography, and the imperial project of polar exploration throughout the nineteenth century. In doing so, this paper argues that the production of spatial understandings of the Arctic Ocean need to be contextualised within the scientific networks and knowledge communities that proved instrumental in the transnational exchanges of Arctic knowledges during the nineteenth century.
**ORGANISERS**

**Dr Catherine Beck**, Pearsall Fellow, Institute of Historical Research

Catherine is a social historian of the maritime world in the long eighteenth-century. She recently completed her PhD at UCL and the National Maritime Museum, on patronage and the Royal Navy between 1775 and 1815. In her postdoctoral research she has returned to her MA background in the history of medicine. She is currently working on a one-year project at the Institute of Historical Research, University of London entitled ‘Disordered Minds and Nervous Bodies: Insanity in the Royal Navy 1740-1820’. Her work re-examines responses to mental disorder, difference and disability at sea and the effect of the ocean environment on experiences and conceptions of seafarer insanity.

catherine.beck@sas.ac.uk | @Cat_S_Beck

**Dr Erika Jones**, Curator, National Maritime Museum, Greenwich.

Erika has just completed her PhD at the Department of Science and Technology Studies, UCL and the National Maritime Museum. Her thesis explored how technologies and practices on the Challenger expedition (1872-1876) were used to make knowledge of the oceans. Her research uses the movement of instruments, natural history specimens, and material images associated with the voyage to produce an alternative narrative of the Challenger expedition and provide opportunities to cross boundaries of discipline, time and geography.

EJones@rmg.co.uk | @erikajones225

**Dr Jennifer Kain**, Newcastle University

Jen Kain received her PhD from Northumbria University in 2015 after which she held the Pearsall JRF in Maritime History at the IHR between 2016-2017. Her first monograph based on her PhD thesis, entitled Insanity and Immigration Control in New Zealand and Australia, 1860 to 1930 is due to be published at the end of the year. She currently teaches history at Newcastle University, where in the autumn she is convening her own module on New Zealand history. Jen's research interests include health related border controls, especially pertaining to mental illnesses.

jennifer.kain@ncl.ac.uk | @JenniferSKain
Dr Sam Robinson, University of Manchester

Sam Robinson is a Post-doctoral researcher at the Centre for the History of Science, Technology and Medicine at the University of Manchester. He completed his PhD at the University of Manchester in 2015 having previously studied at the University of Aberdeen and has held post-doctoral research fellowships at the University of York and Aberystwyth University. In 2018 he published, Ocean Science and the British Cold War State (Palgrave), work that was based on his PhD Thesis. Sam has research interests in the history of oceanography, the Cold War, politics and science, future imaginaries, and the historical development of Science Diplomacy. He is currently working on the place/role of marine science & technology within the UNCLOS negotiations 1967-1982.

samrobinsonphd@gmail.com | @SamHistSci