ROBBIE M PARKS, PhD

Earth Institute, Columbia University, New York, NY, USA
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Career objective

I am an environmental epidemiologist. I am currently a post-doctoral research fellow at the Earth Institute, Columbia University, mentored by Marianthi-Anna Kioumourtzoglou at the Mailman School of Public Health. I am primarily interested in understanding the impact that climate, weather, and air pollution has on mortality, nutrition and disease outcomes, and how these impacts may be different in sub-groups of a population. I am also interested in developing new (particularly Bayesian) statistical methods, relevant to these concerns.

I am well-placed to follow this trajectory through my academic background in physics, mathematics, computing, environmental epidemiology, and public health, as well as experience in global policy of climate change and health through my internship at the World Meteorological Organization along with my involvement with the Global Heat Health Information Network.

Education and scholarships

Earth Institute post-doctoral research fellow, Columbia University, New York **2019 - present**
- Highly-competitive and fully-funded two-year research post pursuing an independent research agenda
- Focusing on impact that climate, weather, and air pollution has on mortality, nutrition and disease outcomes
- Collaborating with Marianthi-Anna Kioumourtzoglou, G Brooke Anderson, Rachel Nethery and Francesca Dominici

Post-doctoral collaborator, CPREE, Princeton University **2019 - present**
- Working with Denise Mauzerall, focused on China and India's energy transitions and impact on health

Honorary Research Associate, Epidemiology and Biostatistics, Imperial College London **2019 - present**
- Continuing to work with Majid Ezzati on global environmental health research

PhD, Imperial College London **2015 - 2019**
-"Anomalous temperature and seasonality of mortality in the United States"
- Supervisors: Professor Majid Ezzati & Professor Ralf Toumi
- Examiners: Professor Paolo Vineis, & Professor Ben Armstrong
- Methods: Bayesian statistics, time series analysis, stochastic weather generators
- Papers published from thesis work in Nature Medicine, PLOS Medicine and eLife

BA/MA (Oxon), Physics, Keble College, University of Oxford **2005 - 2008**
- Modules included: Condensed Matter, Quantum Mechanics, Particle Physics, Thermal Physics

Relevant experience and projects

Global Heat Health Information Network (GHHIN) **2017 - present**
- Founding committee member of GHHIN
- Focused on global hazards, exposure, vulnerability, and technical capabilities of Heat Early Warning Systems
- Co-organiser of first GHHIN First Global Forum for Heat and Health in Hong Kong, December 2018

Joint Office of Climate and Health, World Meteorological Organization (WMO) **Summer 2017**
- Gained strong policy experience working within Global Framework for Climate Services (GFCS)

Awards and honors

- PI of Earth Frontiers seed funding ($56,300) **2020-2021**
- Earth Institute post-doctoral fellowship ($133,090) **2019 - 2021**
- Wellcome Trust studentship (via Institutional Strategic Support Fund) ($160,000) **2015 - 2019**
- UCAR travel grant for travel to GHHIN conference in Hong Kong ($3000) **December 2018**
- Awarded 1st prize for best presentation at Imperial College School of Public Health PhD symposium **October 2018**
- WMO internship funding from Imperial College London ($5000) **Summer 2017**

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Publications

Published or in press

Parks RM, Bennett JE, Kontis V, Toumi R & Ezzati M. (2020). Anomalously warm temperatures are associated with increased injury deaths. https://www.nature.com/articles/s41591-019-0721-y *Nature Medicine*
(In the top 1% of all research outputs scored by Altmetric)

Parks RM, McLaren M, Rivett U & Thomson M. (2020). Vital signs: health security in South Africa. Chapter 5: climate, drought, food and health. http://www.thebrenthurstfoundation.org/article/vital-signs-health-security-in-south-africa/ *Brenthurst Foundation, Oppenheimer & Sons*

Parks RM & James W. (2019). Infrastructure upgrades and weather warnings concern us all. https://bit.ly/2pyB4Gc *Business Day South Africa*

Bennett JE, Tamura-Wicks, H, **Parks RM**, Burnett RT, Pope CA III, Bechle MJ, Marshall JD, Danaei G & Ezzati M. (2019). National and county life expectancy loss associated with particulate matter pollution in the USA: a spatiotemporal analysis. https://doi.org/10.1371/journal.pmed.1002856 *PLOS Medicine*

Parks RM, McLaren M, Toumi R & Rivett U. (2019). Experiences and lessons in managing water from Cape Town. https://bit.ly/2Uu9oAh *Grantham Briefing Notes*

Parks RM, Bennett JE, Foreman KJ, Toumi R & Ezzati M. (2018). National and regional seasonal dynamics of all-cause and cause-specific mortality in the USA from 1980 to 2016. https://doi.org/10.7554/eLife.35500 *eLife*
(In the top 5% of all research outputs scored by Altmetric)

Parks RM. (2018). The future of extreme weather forecasting, preparation and response. https://bit.ly/2zfDlHw *Zooniverse*

Parks RM. (2016). Weather, climate and health. https://doi.org/10.1002/wea.2752. *Weather*

Parks RM. (2015). Pet Hates: is your cat costing the earth? https://bit.ly/1FiMEjj *VICE Magazine*

In preparation

Parks RM, Anderson GB, Dominici F, N & Kioumourtzoglou MA. Coastal storms, hurricanes and multiple hospitalization outcomes in the United States

Parks RM, Hardwick S, Sparks N & Toumi R. Using IMAGE, a multi-site, multivariate stochastic weather generator, to model European heat waves under climate change

Matthews-Trigg N, **Parks RM**, Jones H, Ebi K. & Shumake-Guillemot J. Extreme heat intervention typology inventory: a literature review

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Teaching experience

Guest lecturer on air pollution and health, New York University **December 2019**
- 2.5 hour lecture as part of undergraduate course on air pollution and health

Physics, Imperial College London **2017-2018**
- Undergraduate tutorial assistant in mechanics, linear algebra, matrices, electricity & magnetism, special relativity

Statistics, Imperial College London **2016-2017**
- MSc Epidemiology tutorial assistant, teaching Bayesian statistics

Physics and mathematics teacher and tutor **2008 - 2015**
- High school teacher for A-level qualifications

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Presentations

Parks RM (2019). Air pollution health and policy, *New York University, New York, United States*

Parks RM (2019). Partciulate matter air pollution and national and county life expectancy loss in the USA: A spatiotemporal analysis, *Centre for Air Pollution, energy and health research (CAR) webinar series, Sydney, Australia*

Parks RM (2019). Using Bayesian spatio-temporal modelling to estimate the impact of anomalous temperature and air pollution on mortality in the United States, *Department of Chemical Engineering, Columbia University*

Parks RM, McLaren M, Toumi R & Rivett U. (2019). Experiences and lessons in managing water from Cape Town. *Making the most of London's waterways, Future of London*

Parks RM, Bennett JE, P, Foreman KJ, Toumi R & Ezzati M. (2018). Impact of anomalous temperature on injury mortality in the USA. *ISES-ISEE 2018 Joint Annual Meeting, Ottawa, Canada*

Shumake-Guillemot J, Jones H, **Parks RM** & Trtanj J. (2017). Introduction to the Global Heat Health Information Network. *International Conference of Biometeorology, Durham, UK*

Fernandez Montoya L, **Parks RM**, & Shumake-Guillemot J. (2017). Building Health System Resilience to Climate and Environmental Health risks: Insights from Climate Services. *Strengthening Space Cooperation for Global Health, Geneva, Switzerland*

Parks RM, Bennett JE, P, Foreman KJ, Toumi R & Ezzati M. (2016). Seasonal dynamics of mortality in the USA from 1982 - 2013. *Bayesian Young Statistician Meeting, Florence, Italy*

Parks RM, Bennett JE, P, Foreman KJ, Toumi R & Ezzati M. (2016). Seasonality of mortality: identifying patterns and trends with Bayesian spatiotemporal modelling. *International Workshop on Spatiotemporal Statistics, London, UK*

Public engagement

The Past and Future of Sustainable Development, Rockefeller University (https://bit.ly/2UoPrdD) **January 2020**
- Panellist along with David Rockefeller, Jr. and Peter Goldmark, Jr.
- Discussing ways in which the climate crisis can be dealt with politically as well as technologically

More than 55 scientists sign letter supporting the Green New Deal, Bernie Sanders 2020 **January 2020**
(https://bit.ly/2uiY1Qz)
- One of 55 scientists who were asked to support Bernie Sanders's Green New Deal with letter signing

GREEN SPACE, Great Exhibition Road Festival 2019 (https://bit.ly/2KBFzZa) **June 2019**
- Collaborator (contributed sound art) for installation that explored the health benefits of urban green spaces in cities and how we connect with nature

Westminster for a Green New Deal: Citizens' Assembly (https://bit.ly/2VwDgKv) **June 2019**
- Co-organised and co-chaired an citizens' assembly to discuss solutions to climate crisis, with panel including Alan Whitehead MP, Shadow Minister for Energy and Climate Change
- Led campaign for Westminster Council to declare climate emergency; officially approved September 2019 full council meeting

Reddit Ask Me Anything (AMA) interview (https://bit.ly/2Qcbu5E) **November 2018**
- Discussed the implications of my work on seasonal dynamics of mortality on Reddit online platform by answering questions from the public

Delegate, COP23 **November 2017**
- Represented GenderCC, promoting understanding of gender as role in climate change risk

Plastic not fantastic in the oceans (https://bit.ly/2B3us5l) **Summer 2016**
- With Erik van Sebille at Royal Society educating public about dangers of contaminating oceans with plastic
- Public-facing event speaking to hundreds of people of all ages and backgrounds

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Press coverage

COVID-19/Coronavirus and air pollution

Air pollution plummeting worldwide, **Accuweather** **April 2020**

Anomalously warm temperatures are associated with increased injury deaths

Climate crisis likely to increase violent deaths of young people - report, **The Guardian**	**January 2020**t
Injuries and Deaths Could Rise with Climate Change in the U.S., a New Study Finds, **TIME**	**January 2020**
Climate-Change Related Injuries Will Kill Thousands in the US, **New Scientist**	**January 2020**
Climate Change Could Lead to More Injuries and Deaths, **The Verge**	**January 2020**
Climate change could kill thousands of Americans each year, **Daily Mail**	**January 2020**
Rising temps could cause as many as 2,100 fatal injuries per year, **Breitbart**	**January 2020**
The Heat is On: rise in violence as planet warms, **Daily Star**	**January 2020**
How climate change could change the way we die, **Anthropocene**	**January 2020**
Hotter temperatures will mean more deaths from injury, **The Conversation**	**January 2020**
Rising temperatures could increase injury deaths by 2,000 a year: study, **Smart Cities Dive**	**January 2020**
Climate Change May Translate Into More Fatal Injuries, **HealthDay**	**January 2020**
Warmer temperatures linked to increase in US injury deaths, study says, **CNN**	**January 2020**

Coverage in United States, United Kingdom, Colombia, France, Spain, Italy, India and others

Paper retweeted or liked by David Wallace-Wells, Greta Thunberg, Francesca Dominici, Andrew Revkin, Maria Neira, Katherine Hayhoe, Marshall Burke and hundreds of others.

Paper reviews

Paper reviews for Scientific Reports, International Journal of Biometeorology, Research Square, Climate Services.

Transferable skills

Languages

English	Native speaker
German	C2 (Professional Proficiency) level. Awarded Goethe-Zertifikat C1 (score: 86.5/100) in May 2018
French	B1 (Conversational) level
Spanish	A2 (Advanced beginner) level. Currently taking weekly classes

Computing

High level of computing proficiency in R, Python, C/C++, Matlab, LaTeX, Adobe Illustrator, Max/MSP/Jitter

Cross-disciplinary work

Technical and academic report writing; data analysis and presentation; organized and able to develop and follow up on work plans; collection and synthesis of information relevant for applied science; data processing and management; experience with climate data and tools; comfortable working across disciplines; working in international cross-disciplinary teams.

References

Professor Majid Ezzati	PhD supervisor	majid.ezzati@imperial.ac.uk
Professor Ralf Toumi	PhD supervisor	r.toumi@imperial.ac.uk
Dr. Marianthi-Anna Kioumourtzoglou	Fellowship mentor	mk3961@cumc.columbia.edu
Dr. Joy Shumake-Guillemot	WMO supervisor	jshumake-guillemot@wmo.int