ROBBIE M PARKS, PhD

Earth Institute, Columbia University, New York, NY, USA
E-mail: robbie.parks@columbia.edu   Twitter: @rmiparks   website: robbiemparks.github.io

Career objective

I am an environmental epidemiologist working in environmental health sciences. I am currently a post-doctoral research fellow at the Earth Institute, Columbia University. I am primarily interested in understanding the impact that climate, weather, and air pollution have on mortality, nutrition and disease outcomes, and how these impacts may be different in sub-groups of a population relevant to climate equity and environmental justice. 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 environmental epidemiology, public health, physics, mathematics, and computing, as well as experience in local and global policy of climate change, health, and equity through my experience with the World Meteorological Organization, the Global Heat Health Information Network, and environmental justice groups.

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 Profs. Marianthi-Anna Kioumourtzoglou, G Brooke Anderson, Rachel Nethery, Francesca Dominici Jacqueline Klopp, Joan Casey among others

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

PhD, Imperial College London   **2015 - 2019**
- "Anomalous temperature and seasonality of mortality in the United States"
- Supervisors: Profs. Majid Ezzati & Professor Ralf Toumi
- 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 - 2022**
- Co-PI of President's Global Innovation Fund seed funding ($45,000)   **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**

Publications

Published, in press or under review

2020

Kontis V, Bennett JE, Rashid T, **Parks RM**, Pearson-Stuttard J, Guillot M, Asaria P, Zhou B, Battaglini M, Corsetti G, McKee M, Di Cesare M, Mathers C, Ezzati M. (In press). Magnitude, demographics and dynamics of the impact of the first phase of the Covid-19 pandemic on all-cause mortality in 21 industrialised countries, *Nature Medicine*

deSouza P, Braun D, **Parks RM**, Schwartz J, Dominici F, Kioumourtzoglou MA. (In press). Short term exposure to fine particulate matter and cardiovascular hospitalizations among low income and disabled Americans, *Epidemiology*

Parks RM*, Thalheimer L*. (2020). The hidden burden of pandemics, climate change and migration on mental health, https://environment.iomdev.org/blogs/hidden-burden-pandemics-climate-change-and-migration-mental-health *UN International Organization for Migration (IOM) thematic series on health*

Kontis V, Bennett JE, **Parks RM**, Rashid T, Pearson-Stuttard J, Asaria P, Guillot M, Blangiardo M, Ezzati M. (2020). Age- and sex-specific total mortality impacts of the early weeks of the Covid-19 pandemic in England and Wales: Application of a Bayesian model ensemble to mortality statistics, https://www.medrxiv.org/content/10.1101/2020.05.20.20107680v1, *MedrXiv*

Parks RM, Bennett JE, Tamura-Wicks H, 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*

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*

2019

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 Papers*

2018

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*

2016

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

2015

Parks RM. (2015). Pet Hates: is your cat costing the earth? https://bit.ly/2FE08nX *VICE Magazine*

* Contributed equally to this work

Teaching experience

SHARP Training: Workshop on Analyzing Mixtures in Environmental Health Studies   **August 2020**
- Teaching assistant on 2-day course led by Prof. Marianthi-Anna Kioumourtzoglou
- Topics included Bayesian Kernel Machine Regression (BKMR), variable selection and tree-based methods

Using LaTeX to make a CV, Columbia University   **April 2020**
- 1 hour guest lecture as part of graduate course at Mailman School on using LaTeX in academia

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

Presentations

Parks RM, Anderson GB, Nethery RC, Navas-Acien A, Dominici F, Kioumourtzoglou MA (2020). Tropical cyclones and multiple hospitalization outcomes in the United States, *ISEE Virtual Conference*

Parks RM (2020). WE ACT Climate Justice Group knowledge exchange, *WE ACT, New York, United States*

Parks RM (2020). Spatio-temporal modelling to estimate the impact of air pollution, anomalous temperature and coastal storms on mortality and morbidity in the United States, *IRI, New York, United States*

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*

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*

Conference session chairing

Parks RM, Baldwin JW, Kioumourtzoglou MA (2020). Exploring the 'Hidden Burden' of Climate Change and Pollution on Mental Health and Conflict, *AGU, San Francisco, United States*

Public engagement

Environmental Justice and Health Townhall, Columbia University (https://bit.ly/3bsdZZ3)   **April 2020**
- Panellist along with Joan Casy, Manuela Orjuela-Grimm and Sonal Jessel
- Discussing social justice, climate and the environment on 50th anniversary of Earth Day

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/2HjBxFi)   **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

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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Other activities

Climate Cares Steering Group   **2020 - present**
- Working with scientists and policymakers around the world to steer program at Imperial College London

Climate Justice Working Group member for WE ACT   **2020 - present**
- Discussing different action plans for the Climate Justice Working Group in New York City

DEI Working Group member for Earth Institute, Columbia University   **2019 - present**
- Helping to draft and edit the first DEI survey

Sound artist   **2015 - present**
- robbiemparks.bandcamp.com

Musician and songwriter, Glitches   **2008 - present**
- Secured funding from British Arts Council to record album
- Orchestrated songs, as well as writing and performing
- Debut album, 'Lost Language', released 11th November 2017 on Spotify and all other good suppliers

Co-chair, Westminster Refugee Welcome   **2017 - 2019**
- Concerned with bringing Syrian refugees to Westminster under Community Sponsorship and Syrian Vulnerable Persons Resettlement Scheme (VPRS)
- Obtained public commitment from Westminster Council to approve requests for Community Sponsorship schemes
- Actively negotiating with Westminster Council to bring newcomer families to Westminster, London

Marathon runner   **2004 - present**
- Marathon best: 3h15, London Marathon 2014
- Half-marathon best: 1h24, Royal Parks Half Marathon, London 2016

Press coverage

COVID-19/Coronavirus, temperature and air pollution

Environmental Racism and COVID-19 Are a Deadly Combination, **Bitch Media**	**August 2020**
Mention of results from England and Wales COVID-19 paper in UK parliament, **UK Parliament**	**June 2020**
Pod of the Planet: Ep.5 Look After Yourself, **Pod of the Planet**	**April 2020**
Air pollution plummeting worldwide, **Accuweather**	**April 2020**
Aural Vignettes to Help Keep Me Together, **KnowScience**	**April 2020**

Rising temperatures and heat deaths

Climate casualties rising with temperatures, **The Center for Public Integrity**	**June 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**
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 reviews

Paper reviews for Scientific Reports, International Journal of Biometeorology, Climate Services, BMC Public Health.

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

Computing

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

References

Prof. Marianthi-Anna Kioumourtzoglou	Fellowship mentor	mk3961@cumc.columbia.edu
Prof. Majid Ezzati	PhD supervisor	majid.ezzati@imperial.ac.uk
Prof. Francesca Dominici	Harvard collaborator	fdominic@hsph.harvard.edu
Prof. Jacqueline Klopp	Earth Institute collaborator	jk2002@columbia.edu
Dr. Joy Shumake-Guillemot	WMO supervisor	jshumake-guillemot@wmo.int