



Insights from the Centre for Social Data Analytics – December 2017

CSDA's research and analytics tools are used by local and international agencies to support smart policy and sound decision-making in areas including health and social welfare. This issue: CSDA co-director named as MSD's Chief Economist, Marsden funding for ethics framework, greater accuracy from revised family screening tool and our CSDA team profile: research fellow Bénédicte Rouland.

CSDA News & Appointments

CSDA Co-Director appointed MSD Chief Economist

CSDA Co-Director Tim Maloney has been [appointed Chief Economist at the Ministry of Social Development](#). This newly created role reflects the Ministry's desire to bring a strong economics focus to its work. Tim's work at MSD is part-time and he continues in his AUT roles.

Marsden Funding for predictive analytics ethics framework

A research team including CSDA's Professor Rhema Vaithianathan (as Associate Investigator) has been awarded Marsden Funding for a three-year project: "An Ethical Framework for Social Policy Applications of Predictive Analytics". Other researchers on the project are Associate Professor Tim Dare from University of Auckland (PI) and Dr Barry Smith (Lakes District Health Board).

US researcher Matt Walsh joins CSDA

Matt Walsh from the Wisconsin Department of Children and Families, USA, has joined the CSDA team as a senior research fellow. His work will focus on New Zealand research projects and new uses of the Integrated Data Infrastructure, New Zealand's research dataset of microdata about individuals and households.

CSDA research fellow in research collaboration with Carnegie Mellon

Research fellow Diana Benavides Prado will spend four months from January-April 2018, at Carnegie Mellon University's Heinz College in Pittsburgh, USA, where she will join a research collaboration on the use of predictive analytics in child abuse and fairness in algorithmic decision-making. At CMU Diana will work closely with CSDA research affiliate Alexandra Chouldechova.

Meet research fellow Bénédicte Rouland

CSDA research fellow Bénédicte Rouland is focused on extracting meaningful answers about child welfare from the swathes of information held in New Zealand's Integrated Data Infrastructure (IDI).

Working with other researchers at CSDA and AUT, Bénédicte is using data from the IDI to carry out several studies looking at aspects of child welfare and the repercussions of maltreatment. One study aims to provide answers about the cumulative lifetime prevalence of child protection involvement in New Zealand.

“Early indications from our findings show there is an opportunity to make significant reductions in the rates of injury and mortality, if the right prevention services and supports are put in place for children and families at high risk of substantiated maltreatment.”



[Read the full article on CSDA research fellow Bénédicte Rouland](#)

Research Insights

New methodologies for Allegheny Family Screening Tool go live soon

A new version of the Allegheny Family Screening Tool (AFST) will be implemented in the next few months, reflecting CSDA's commitment to ongoing evaluation and improvement of our screening tools. The first AFST was based on logistic regression while the latest version uses alternative model building strategies: SVM, XGBoost and Random Forest, which offer improved accuracy. Development of the latest AFST version was informed by valuable feedback from the Allegheny team who, as part of the review process, also revised policy around use of the tool.

CSDA model predicting risk of chronic homelessness

A prototype predictive model that can accurately identify individuals at high risk of chronic homelessness, using a range of information in the Allegheny County Data Warehouse, has been successfully developed by CSDA. Development of the Allegheny Homelessness Predictive Risk Model involved an extensive process of 'trial and error'. The next phase will see Allegheny County determine whether or not to work towards implementing the model.

Researchers seeking factors that help at-risk children and families 'beat the odds'

CSDA senior research fellow Matt Walsh and research fellow Sophie Joyce are making use of the Growing Up in New Zealand (GUINZ) longitudinal data set, to search for factors that allow families at-risk to 'beat the odds' of poor outcomes.

“Adverse Childhood Experiences (ACEs) is a term given to an internationally well-studied set of childhood traumatic experiences. Using the GUINZ data we've been able to ascertain the number of ACEs for each child in the study and we can see ACEs appear to have a significant impact on primary school readiness,” says researcher Matt Walsh.

“Another key strength of the GUINZ study is the thorough collection of potential protective factors and environmental attributes that might explain why some at-risk children do not experience ACEs. Ongoing work to identify these factors could inform preventative policies and strategies to mitigate the negative outcomes of ACEs.”

Pilot survey launched to assess wellbeing of junior doctors

Our 'Junior Doctors' Wellbeing' project has begun with the [completion of the pilot MyDay survey](#). MyDay is an internet-based survey tool to study experiential wellbeing during the working day. The workforce chosen for the pilot was a sample of junior doctors in Wessex, England - 550 participants were invited to take part. The project is being carried out in partnership with Health Education England and it's hoped the findings will help inform future improvements in job satisfaction and wellbeing.

Spreading the word on data analytics

Our team believes increasing awareness and understanding of data analytics is extremely important. Here are some recent links featuring our experts and their work:

- [Privacy and profiling fears over secret ACC software, NZ Herald, September 2017](#) - CSDA Co-Director Rhema Vaithianathan on the need for transparency in data analytics.
- [What is your data used for? Gaining trust with a Data Dial, IT Brief, October 2017](#) - CSDA Co-Director Rhema Vaithianathan on the importance of transparency and advice from Data Futures Partnership on the questions organisations should ask and answer if they're employing data analytics.

Recent publications from the CSDA team

Our researchers have forthcoming publications in the *American Journal of Public Health* (re: cumulative prevalence of maltreatment among New Zealand children), and *Pediatrics* (re: injury and mortality among New Zealand children identified as being at high risk of maltreatment).

Recent reports and MSD working papers now available online:

- [A Path to Social Licence: Guidelines for Trusted Data Use](#) (August 2017) – CSDA Co-Director Rhema Vaithianathan led development of these guidelines in her capacity as a Data Futures Working Group member.
- [Family Start Impact Study: Selected Extensions](#) (April 2017)
- [Developing Predictive Risk Models to Support Child Maltreatment Hotline Screening Decisions](#) (March 2017)
- [Impact of school-based support on educational outcomes of teen-mothers](#): Evidence from New Zealand's "Teen Parent Units" (February 2017)

Events and outreach

To help advance the understanding and effectiveness of social data analytics, our researchers continue to share and exchange knowledge with local and international colleagues and agencies.

- CSDA Co-Director Rhema Vaithianathan recently spoke in a panel discussion "Fairness-Aware Predictive Analytics in Child Protective Services: Development, Validation and Implementation", **Bloomberg Data for Good Exchange, NYC**.
- In Hong Kong Rhema Vaithianathan spoke on "The evolution of predictive risk modelling for social good" at the **39th International Conference of Data Protection and Privacy Commissioners**.
- CSDA recently attended "Current and future directions: predictive analytics in youth and family services", a meeting of US experts about the future of predictive analytics, hosted by **National Academies of Science, Engineering and Medicine** and Annie E Casey Foundation, Washington DC.
- In October CSDA hosted Abigail Payne, Director of **Melbourne's Institute of Applied Economic and Social Research**.
- In November CSDA hosted **leading Danish social investment researcher Michael Rosholm** (TrygFonden's Centre for Child Research, Aarhus University) and colleagues including heads of regional Children and Families Departments on a [study tour and site visit of our projects in Pittsburgh \(PA\) and Los Angeles](#).
- In November, Rhema Vaithianathan presented to the **Developing Excellence in Medical Education Conference (DMEC) in Manchester, UK** on the [MyDay project](#).
- In December Rhema Vaithianathan presented "Predictive Analytics for Child Welfare: Fundamental Principles" at the **MetroLab Annual Summit, Atlanta, USA**.
- **COMING UP** On 15 & 16 February 2018 CSDA will host its third annual workshop "**Applied Economics Papers on Child and Youth Outcomes**" at AUT in Auckland. The workshop includes 13 research presentations from

New Zealand and Australian researchers and a keynote lecture from Associate Professor Heather Royer (University of California, Santa Barbara). Read the [event programme](#) for more information, including registration details.

- **COMING UP** On 22 February 2018 CSDA will host a roundtable on **“Measuring Childhood Risk and Resilience for Policy Impact”** at The Boat Shed in Wellington. This event will discuss how we can use data to understand the impact of poverty and other risk factors on the lives of children, and to identify protective factors. Further details will be made available in January.

We have sent you CSDA eNews because you have previously shown interest in our work. If you would prefer not to receive this newsletter, please let us know.

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