Curriculum Vitae – **Fengqing Chao** June 2020

Contact

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Education

2017 PhD in Biostatistics. Saw Swee Hock School of Public Health, National University of Singapore (NUS)

- Dissertation: Bayesian Methods for Estimating Global Health Indicators. handle:10635/137381.
- Advisors: A/P Leontine Alkema (UMass, Amherst), A/P Alex Cook (NUS)

2012 BSc (Hons) majoring in Statistics. NUS

Research interests

Statistical demography; Bayesian modeling; Global health; Sex ratio at birth; Child mortality; Time series analysis

Professional activities

Associate Editor for: Foundation of Data Science (AIMS).

Reviewed for (verified by Publons): Annals of Applied Statistics. BMC Public Health. BMJ Global Health. Demographic Research. Global Health Research and Policy. Lancet Global Health.

Research grant

Sep 2019–Sep 2021: Long Term Agreement for Services (LTAS) for the UNICEF. LTAS-42107038. PI: **Fengqing Chao** (Awarded to KAUST with faculty mentor Hernando Ombao)

Peer-reviewed publications

7. Guilmoto, Christophe Z., **Fengqing Chao**, and Purushottam M. Kulkarni. "On the estimation of female births missing due to prenatal sex selection." *Population Studies* (2020). doi:10.1080/00324728.2020.1762912
6. Brown, Peter, **RELISH Consortium**, Yaoqi Zhou. "Large expert-curated database for benchmarking document similarity detection in biomedical literature search." *Database* 2019 (2019): 1-66. doi:10.1093/database/baz085
5. **Chao, Fengqing**, and Ajit Kumar Yadav. "Levels and trends in the sex ratio at birth and missing female births for 29 states and union territories in India 1990–2016: A Bayesian modeling study." *Foundations of Data Science* 1, no. 2 (2019): 177-196. doi:10.3934/fods.2019008
4. **Chao, Fengqing**, Patrick Gerland, Alex R. Cook, and Leontine Alkema. "Systematic assessment of the sex ratio at birth for all countries and estimation of national imbalances and regional reference levels." *Proceedings of the National Academy of Sciences* 116, no. 19 (2019): 9303-9311. doi:10.1073/pnas.18125931160
3. **Chao, Fengqing**, Danzhen You, Jon Pedersen, Lucia Hug, and Leontine Alkema. "National and regional under-5 mortality rate by economic status for low-income and middle-income countries: a systematic assessment." *The Lancet Global Health* 6, no. 5 (2018): e535-e547. doi:10.1016/S2214-109X(18)30059-7
2. **Chao, Fengqing**, and Leontine Alkema. "How informative are vital registration data for estimating maternal mortality? A Bayesian analysis of WHO adjustment data and parameters." *Statistics and Public Policy* 1, no. 1 (2014): 6-18. doi:10.1080/2330443X.2013.856148

1. Alkema, Leontine, **Fengqing Chao**, Danzhen You, Jon Pedersen, and Cheryl C. Sawyer. "National, regional, and global sex ratios of infant, child, and under-5 mortality and identification of countries with outlying ratios: a systematic assessment." *The Lancet Global Health* 2, no. 9 (2014): e521-e530. doi:10.1016/S2214-109X(14)70280-3

Book

1. Christopher, Gee, Arivalgan Yvonne, and **Fengqing Chao**, eds. *Singapore Perspectives 2018: Together*. World Scientific, 2018. doi:10.1142/11155

Manuscripts under Peer-Review/Revision

2. **Chao, Fengqing**, Christophe Z. Guilmoto, Samir K.C., and Hernando Ombao. "Probabilistic Projection of the Sex Ratio at Birth and Missing Female Births by State and Union Territory in India." *arXiv preprint arXiv:2004.02228* (2020).

1. **Chao, Fengqing**, et al., "Scenario-based Bayesian probabilistic projections of the sex ratio at birth and missing female births for all countries and country-level imbalances".

Manuscripts in preparation

1. **Chao, Fengqing**, et al., "A systematic assessment of national under-5 mortality rate by place of residence for 109 countries".

Technical Reports

1. Gee, Christopher, Yvonne Arivalagan, and **Fengqing Chao**. *Singapore Perspectives 2018 Conference Background Paper.* Institute of Policy Studies, LKY School of Public Policy, NUS (2018). (PDF available)

Collaborators

Alkema, Leontine	Department of Biostatistics and Epidemiology, UMass, Amherst, MA, USA
Cook, Alex R.	SSHSPH, NUS, Singapore
Gerland, Patrick	UN Population Division, DESA, NYC, NY, USA
Guilmoto, Christophe Z	CEPED/IRD, Université de Paris, Paris, France
Hug, Lucia	Division of Data, Research, and Policy, UNICEF HQ, NYC, NY, USA
KC, Samir	Asian Demographic Research Institute, Shanghai University, Shanghai, China
Ombao, Hernando	Biostatistics Research Group, Statistics Program, CEMSE, KAUST, Thuwal, Saudi Arabia
Pedersen, Jon	FAFO Institute of Applied International Studies, Norway
Sawyer, Cheryl	UN Population Division, DESA, NYC, NY USA
You, Danzhen	Division of Data, Research, and Policy, UNICEF HQ, NYC, NY, USA

Honors and Awards

NUS Dean's List: AY 2010/2011 Semester 2.

NUS Undergraduate Scholarship (full scholarship): 2008–2012.

XXVII IUSSP International Population Conference Best Poster Award: Aug 2013.

Work Experience

Jul 2019– Postdoctoral Fellow; Biostatistics Research Group, Computer, Electrical and Mathematical Sciences and Engineering Division, King Abdullah University of Science and Technology

Jan 2019–Jul 2019 Research Fellow; Institute of Policy Studies, Lee Kuan Yew School of Public Policy, National University of Singapore

Dec 2017–Dec 2018 Postdoctoral Fellow; Institute of Policy Studies, Lee Kuan Yew School of Public Policy, National University of Singapore

Aug 2017–Nov 2017 Research Assistant; Institute of Policy Studies, Lee Kuan Yew School of Public Policy, National University of Singapore

Aug 2015–Jul 2017 Research Assistant; Saw Swee Hock School of Public Health, National University of Singapore

Apr 2016 Visiting Scholar; Department of Biostatistics and Epidemiology, University of Massachusetts, Amherst, USA

May 2015–Jul 2015 Consultant; Data and Analytics Section, Division of Data, Research and Policy, UNICEF headquarters, New York City, NY, USA

May 2013–Aug 2015 Research Assistant; Department of Statistics & Applied Probability, National University of Singapore

Jul 2012–Apr 2013 Research Assistant; Saw Swee Hock School of Public Health, National University of Singapore

Teaching Experience

Fall 2012 teaching assistant; Quantitative Epidemiological Methods (CO5103), Saw Swee Hock School of Public Health, National University of Singapore

Invited presentations at scholarly meetings/workshops

26. May 3rd, 2020: "Bayesian Methods for Estimating Global Health Indicators", Biostatistics Group Seminar, KAUST, Thuwal, Saudi Arabia. (virtual meeting)
25. Apr 23rd, 2020: "A Systematic Assessment of National Under-5 Mortality Rate by Place of Residence for 109 Countries", Annual Meeting, Population Association of America, Washington, DC, USA. (virtual meeting; Paper doi:10.6084/m9.figshare.12403088, Slides doi:10.6084/m9.figshare.12403931)
24. Apr 6th, 2020: "Lessons learned from the B3 development and application to model time trends in differentials", United Nations virtual Expert Group Meeting for the World Population Prospects 2021 and Beyond, UNPD, New York City, NY, USA. (virtual meeting; Slides doi:10.6084/m9.figshare.12403901)
23. Jan 21st, 2020: "Probabilistic Projection of the Sex Ratio at Birth by States and Union Territories in India", Statistics department seminar, University of Massachusetts, Amherst, USA.
22. Jan 15th, 2020: "Under-five mortality estimation by residence", UN Inter-Agency Group on Mortality Estimation Technical Advisory Group Meeting, Tarrytown, USA.
21. Jan 14th, 2020: "Methods to generate mortality beyond age 14 by sex", UN Inter-Agency Group on Mortality Estimation Technical Advisory Group Meeting, Tarrytown, USA.
20. Dec 20th, 2019: "A Systematic Assessment of National Under-5 Mortality Rate by Place of Residence for 109 Countries", Professional Update, Saw Swee Hock School of Public Health, National University of Singapore, Singapore.
19. Sep 30th, 2019: "Under-5 Mortality Rate Estimation by Place of Residence", Biostatistics Group Seminar, KAUST, Thuwal, Saudi Arabia.
18. Nov 6th, 2018: "A Systematic Assessment of National, Regional and Global Levels and Trends in the Sex Ratio at Birth and Identification of Countries with Outlying Levels", ISI Young Statisticians Regional Workshop – Session 1, 2018 Statistics Week Taiwan, Taipei, Taiwan.
17. Oct 31st, 2018: "Research sharing – SRB estimation and Projection & Estimating Under-5 Mortality Rate by Household Economic Status", ADRI Department Seminar, Shanghai University, Shanghai, China.
16. Sep 17th, 2018: "Estimate Under-5 Mortality Rate by Residence", UN Inter-Agency Group on Mortality Estimation Technical Advisory Group Meeting, New York City, NY, USA.
15. Jul 26th, 2018: "Decomposing the impact of increased educational attainment on demographic dividend in Singapore, 1970–2010", 12th Global Meeting of the NTA Network, Mexico City, Mexico.
14. Jul 24th, 2018: "Contribution of in-migration to the first demographic dividend in Singapore, 1970–2010", 12th Global Meeting of the NTA Network, Mexico City, Mexico.
13. May 17th, 2018: "Estimating Under-5 Mortality Rate by Household Economic Status", Professional Update, Saw Swee Hock School of Public Health, National University of Singapore, Singapore. (Slides doi:10.6084/m9.figshare.12403868)
12. May 10th, 2018: "Singapore perspective 2018 survey: an in-depth analysis", Department Research Seminar, Institute of Policy Studies, LKY School of Public Policy, National University of Singapore, Singapore.

11. Apr 26th, 2018: "A Systematic Assessment of National, Regional and Global Levels and Trends in the Sex Ratio at Birth and Identification of Countries with Outlying Levels", Annual Meeting, Population Association of America, Denver, CO, USA. (Paper doi:10.6084/m9.figshare.12403061, Slides doi:10.6084/m9.figshare.12403532)
10. May 1st, 2017: "Estimate Under-5 Mortality Rate by Household Economic Status", UN Inter-Agency Group on Mortality Estimation Technical Advisory Group Meeting, New York City, NY, USA.
9. Apr 24th, 2017: "Estimate Under-5 Mortality Rate by Household Economic Status", Biomedical Science, Engineering and Computing Group joint seminar, Oak Ridge National Lab, Knoxville, USA.
8. Apr 13th, 2017: "Estimate Under-5 Mortality Rate by Household Economic Status", Statistics department seminar, University of Massachusetts, Amherst, USA.
7. Oct 18th, 2016: "A systematic assessment of national, and regional under-five mortality by wealth quintiles and identification of countries with outlying levels using a Bayesian hierarchical time series model", UN Inter-Agency Group on Mortality Estimation Technical Advisory Group Meeting, New York City, NY, USA.
6. Sep 30th, 2016: "A Systematic Assessment of National, Regional and Global Levels and Trends in the Sex Ratio at Birth and Identification of Countries with Outlying Levels", 2nd Singapore International Public Health Conference and 11th Singapore Public Health & Occupational Medicine Conference, Singapore.
5. Apr 22nd, 2016: "A Systematic Assessment of National, Regional and Global Levels and Trends in the Sex Ratio at Birth and Identification of Countries with Outlying Levels", Statistics Working Group, University of Massachusetts Amherst, USA.
4. Mar 31st, 2016: "A Systematic Assessment of National, Regional and Global Levels and Trends in the Sex Ratio at Birth and Identification of Countries with Outlying Levels", Annual Meeting, Population Association of America, Washington, DC, USA. (Paper doi:10.6084/m9.figshare.12401654, Slides doi:10.6084/m9.figshare.12403457)
3. Jul 29th, 2015: "A Systematic Assessment of National, Regional and Global Levels and Trends in the Sex Ratio at Birth and Identification of Countries with Outlying Levels", Third International Conference of Asian Population Association, Kuala Lumpur, Malaysia.
2. Dec 18th, 2014: "Sex Ratio at Birth", UN Inter-Agency Group on Mortality Estimation Technical Advisory Group Meeting, New York City, NY, USA.
1. Aug 30th, 2013: "Sex Differences in U5MR: Estimation and identification of countries with outlying levels or trends", XXVII IUSSP International Population Conference, Busan, Korea. (Paper doi:10.6084/m9.figshare.12401468)

Poster Presentations

5. Apr 23rd, 2020: "Probabilistic Projection of the Sex Ratio at Birth and Missing Female Births by States and Union Territories in India", Annual Meeting, Population Association of America, Washington, DC, USA. (virtual meeting; Poster doi:10.6084/m9.figshare.12401462)
4. Nov 20th, 2019: "A Systematic Assessment of National Under-5 Mortality Rate by Place of Residence for 109 Countries using a Bayesian Time Series Model", Statistics and Data Science Workshop, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia. (Poster doi:10.6084/m9.figshare.12401381)
3. Apr 27th, 2017: "A Systematic Assessment of National, and Regional Under-Five Mortality Rate By Wealth Quintiles and Identification of Countries with Outlying Levels Using a Bayesian Hierarchical Time Series Model", Annual Meeting, Population Association of America, Chicago, USA. (Paper doi:10.6084/m9.figshare.12403028, Poster doi:10.6084/m9.figshare.12401297)
2. Jun 13th, 2016: "Sex Rate at Birth: Estimation and Projection using Bayesian Hierarchical Time Series Model", World Meeting of International Society for Bayesian Analysis, Sardinia, Italy. (Poster doi:10.6084/m9.figshare.12401288)
1. Aug 27th, 2013: "How informative are vital registration data for estimating maternal mortality? A Bayesian analysis of WHO adjustment data and parameters", XXVII IUSSP International Population Conference, Busan, Korea. (Paper doi:10.6084/m9.figshare.12401495, Poster doi:10.6084/m9.figshare.12400973)

Miscellaneous Research Items

Conference Papers

7. **Chao, Fengqing**, Danzhen You, Lucia Hug, Jon Pedersen, Hernando Ombao, and Leontine Alkema. 2020. "A Systematic Assessment of National Under-5 Mortality Rate by Place of Residence for 109 Countries". *figshare*. doi:10.6084/m9.figshare.12403088.
6. **Chao, Fengqing**, Patrick Gerland, Alex R. Cook, and Leontine Alkema. 2018. "A Systematic Assessment of National, Regional and Global Levels and Trends in the Sex Ratio at Birth and Identification of Countries with Outlying Levels". *figshare*. doi:10.6084/m9.figshare.12403061.
5. **Chao, Fengqing**, Danzhen You, Jon Pedersen, and Leontine Alkema. 2017. "A Systematic Assessment of National, and Regional Under-five Mortality Rate by Wealth Quintiles and Identification of Countries with Outlying Levels Using a Bayesian Hierarchical Time Series Model". *figshare*. doi:10.6084/m9.figshare.12403028.
4. **Chao, Fengqing**, Leontine Alkema, and Patrick Gerland. 2016. "A Systematic Assessment of National, Regional and Global Levels and Trends in the Sex Ratio at Birth and Identification of Countries with Outlying Levels". *figshare*. doi:10.6084/m9.figshare.12401654.
3. Alkema, Leontine, **Fengqing Chao**, and Cheryl C. Sawyer. 2014. "Gender Differences in Infant and Child Mortality: Estimation of Sex-specific Mortality and an Assessment of Excess Female Deaths". *figshare*. doi:10.6084/m9.figshare.12401627.
2. **Chao, Fengqing**, and Leontine Alkema. 2013. "How Informative Are Vital Registration Data for Estimating Maternal Mortality? A Bayesian Analysis of WHO Adjustment Data and Parameters". *figshare*. doi:10.6084/m9.figshare.12401495.
1. Alkema, Leontine, **Fengqing Chao**, and Cheryl C. Sawyer. 2013. "Gender Differences in Infant and Child Mortality: Estimation and Identification of Countries with Outlying Levels or Trends". *figshare*. doi:10.6084/m9.figshare.12401468.

Conference Posters

5. **Chao, Fengqing**, Christophe Z. Guilmoto, Samir K.C., and Hernando Ombao. 2020. "Probabilistic Projection of the Sex Ratio at Birth and Missing Female Births by State and Union Territory in India (poster for PAA 2020)". *figshare*. doi:10.6084/m9.figshare.12401462.
4. **Chao, Fengqing**, Danzhen You, Lucia Hug, Jon Pedersen, Hernando Ombao, and Leontine Alkema. 2019. "Under-5 Mortality Rate Estimation by Residence Using Bayesian Model (poster for SDSW 2019)". *figshare*. doi:10.6084/m9.figshare.12401381.
3. **Chao, Fengqing**, Danzhen You, Jon Pedersen, Lucia Hug, and Leontine Alkema. 2017. "Estimation of Under-5 Mortality by Wealth Quintile (poster for PAA 2017)". *figshare*. doi:10.6084/m9.figshare.12401297.
2. **Chao, Fengqing**, Leontine Alkema, and Patrick Gerland. 2016. "Sex Ratio at Birth: Estimation and Projection Using Bayesian Hierarchical Time Series Model (poster for ISBA 2016)". *figshare*. doi:10.6084/m9.figshare.12401288.
1. **Chao, Fengqing**, and Leontine Alkema. 2013. "How Informative Are Vital Registration Data for Estimating Maternal Mortality? A Bayesian Analysis of WHO Adjustment Data and Parameters (poster for IUSSP 2013)". *figshare*. doi:10.6084/m9.figshare.12400973

Conference Slides

5. **Chao, Fengqing**. 2020. "Under-5 Mortality Rate Estimation by Place of Residence (slides for PAA 2020)". *figshare*. doi:10.6084/m9.figshare.12403931.
4. **Chao, Fengqing**. 2020. "Lessons Learned from the B3 Development and Application to Model Time Trends in Differentials (slides for UNEGM 2020)". *figshare*. doi:10.6084/m9.figshare.12403901.
3. **Chao, Fengqing**, Danzhen You, Jon Pedersen, Lucia Hug, and Leontine Alkema. 2018. "Estimate Under-5 Mortality Rate by Household Economic Status (slides for SSHSPH 2018)". *figshare*. doi:10.6084/m9.figshare.12403868.
2. **Chao, Fengqing**, Patrick Gerland, Alex R. Cook, and Leontine Alkema. 2018. "A Systematic Assessment of National, Regional, and Global Levels and Trends in the Sex Ratio at Birth and Scenario-based Projections (slide for PAA 2018)". *figshare*. doi:10.6084/m9.figshare.12403532.

1. **Chao, Fengqing**, Leontine Alkema, and Patrick Gerland. 2016. “A Systematic Assessment of National, Regional, and Global Levels and Trends in the Sex Ratio at Birth and Identification of Countries with Outlying Levels (slides for PAA 2016)”. *figshare*. doi:10.6084/m9.figshare.12403457.