

```
#> 2 Bourke Street Mall (North) <tsibble [1,032 × 4]>
<tibble [145,321 × 2...
#> 3 QV Market-Elizabeth St (West) <tsibble [2,160 × 4]>
<tibble [334,825 × 2...
#> 4 Southern Cross Station <tsibble [2,160 × 4]>
<tibble [334,825 × 2...
```

Conclusion

The **tsibble** R package articulates the time series data pipeline, which shepherds raw temporal data through to time series analysis, and plots. It also lays the fundamental computing infrastructure of a new ecosystem for tidy time series analysis, known as “**tidyverts**”, including time series features (the **feasts** package) and forecasting (the **fable** package).

Note

This is a joint work with [Dianne Cook](#) and [Rob J Hyndman](#). A longer version of the data structure and design principles about the **tsibble** R package can be found at arXiv (<https://arxiv.org/abs/1901.10257>).

References

Wickham, Hadley. 2014. “Tidy Data.” *Journal of Statistical Software* 59 (10). Foundation for Open Access Statistics: 1–23.

Wickham, Hadley, and Garrett Golemund. 2016. *R for Data Science*. O’Reilly Media. <http://r4ds.had.co.nz/>.

Strengthening Analytical Thinking for Observational Studies (STRATOS): Introducing the Study Design Topic Group (TG5)

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on behalf of STRATOS TG5

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Previous issues of the Bulletin introduced the STRATOS Initiative and activities of Topic Groups TG1 (Missing Data), TG2 (Selection of Variables and Functional Forms in Multivariable Analysis), TG3 (Initial Data Analysis), and TG4 (Measurement Error and Misclassification). Future issues will cover TG8 (Survival Analysis) and TG9 (High-dimensional Data). Here we describe the purpose and activities of TG5 (Study Design). Current members of TG5 are Suzanne Cadarette and Mitchell Gail (Joint Chairpersons), Gary Collins, Stephen Evans, Neil Pearce, Peggy Sekula, Neus Valveny, Elizabeth Williamson and Mark Woodward. Doug Altman, who died in June 2018 (see Matthews et al., 2018), was an inspirational leader in TG5, and his contributions continue to influence our thinking.

The aim of TG5 is to provide accessible guidance for the design of observational studies. The emphasis is on help for planning observational studies. This includes defining clear study objectives and then

choosing an observational design that meets those objectives, acknowledges practical constraints, and minimizes threats to validity. In addition to providing guidance on the use of classical observational designs, TG5 also aims to investigate new designs for special problems that might arise in collaboration with researchers in other Topic Groups.

TG5 has submitted an introductory level paper on how to select an appropriate observational design for detecting an association of an exposure with disease incidence. This paper defines cohort, nested case-control, case-cohort, population-based case-control and hospital-based case-control studies. The paper then discusses the strengths and weaknesses of the various designs and how to choose an appropriate design from among them, in view of study objectives. Several follow-on papers are being considered to cover how real-world constraints and practicalities affect choice of design; what steps can be taken to minimize threats to validity, such as measurement error and missing data; and what might be done to enhance the generalizability of a planned study. Another topic under consideration is challenges for inference from routinely collected data (such as administrative records) and what design features can ameliorate such challenges. A paper on designing studies of the associations of prescription medicines with osteoporotic fractures is underway.

In addition to writing expository papers accessible to a wide research readership,

TG5 members are collaborating with researchers in other Topic Groups to develop or apply more efficient designs for problems that arise in specific applications. Some projects include: validation studies to gather accurate data that can be used to improve analyses based on electronic health records (with TG4); and steps that promote real time quality control of assay and questionnaire data (with TG3). Other potential projects include: comparing survey calibration with multiple imputation as methods to increase efficiency of 2-phase designs (with TG1), and planning studies of prognostic factors (with TG6). Many of these collaborations were solidified through preliminary discussions during the STRATOS Workshop entitled “Toward a Comprehensive, Integrated Framework for Advanced Statistical Analyses” at the Banff International Research Station in Alberta, Canada, June 2-7, 2019 (<http://www.birs.ca/events/2019/5-day-workshops/19w5198>).

Several TG5 members have made presentations on behalf of STRATOS TG5. Doug Altman spoke on “Issues in popular designs for observational studies” and Peggy Sekula spoke on “Prognostic studies and the need for guidance” at the Joint Conference on Biometrics & Biopharmaceutical Statistics, August 28-September 1, 2017, Vienna, Austria. Peggy Sekula spoke on “Design of observational studies and the need for guidance – prognostic studies as an example” at the German Association for Medical Informatics, Biometry and Epidemiology (GMDS), September 17-21, 2017,

Oldenburg, Germany. Mitchell Gail spoke on “Potential collaborations between Design Topic Group 5 and other STRATOS Topic Groups” (<http://www.birs.ca/events/2019/5-day-workshops/19w5198/videos/watch/201906031032-Gail.html>) at the STRATOS Workshop in Banff, Canada, June 2-7, 2019.

References

Region News

Australasian Region (AR)

<http://www.biometricsociety.org.au/about.html>

Remembering Jeff Wood

It is with great sadness that we report Jeff Wood passed away on 22 April 2019. Jeff was our longest standing member, having joined in 1968, and is sorely missed. In 2013 Jeff received our region’s most prestigious honour, the E.A. (ALF) Cornish award. The citation that accompanied this award is reproduced below.

“Jeff Wood has worked as an applied statistician for nearly 50 years and has been a member of IBS for almost as long. He started at the National Vegetable Research Station in the U.K. in 1966 originally under John Nelder and then under Geoff Freeman, both former presidents of IBS. He moved to Australia in 1973 and worked for the CSIRO for 28 years. Since 2001 he has been working at the Australian National University. His applied work has been in a wide variety of areas, but mostly in ecology, agriculture and horticulture. It has led to many co-authorships and he has published over 120 papers.

He has served the IBS in many capacities, as Council Member from 1986-1993, as member or chair of the Finance Committee from 1987-1998, as Treasurer from 1999-2006, and as a member of the Awards and Education Committee from 1982-1984. More locally he was President of the Australasian Region from 1982-1983.

He has also been involved with other statistical societies. He was on the Committee of the Birmingham Local Group of the Royal Statistical Society from 1969-1973. He was Treasurer of the Canberra branch of the Statistical Society of Australia Inc. from 1987-1988 and President from 1991-1992. He was the national Treasurer from 1989-1992.”

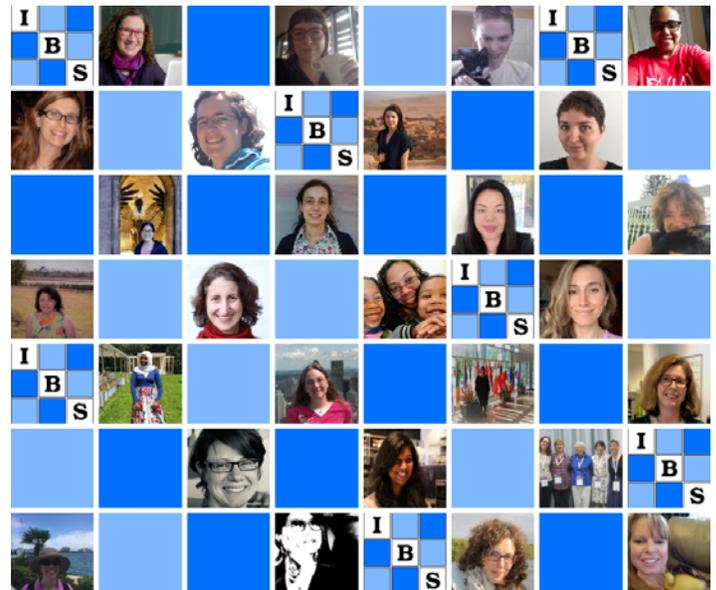


Jeff Wood (right) pictured with Peter Clarke at the 2013 IBS-AR conference in Mandurah.

Matthews, R., Chalmers I., Rothwell P. (2018). Douglas G Altman: statistician, researcher, and driving force behind global initiatives to improve the reliability of health research. *BMJ* 361:k2588

Emi Tanaka, Social Media Coordinator

IBS-AR member, Emi Tanaka (@statsgen), has taken up the role of Social Media Coordinator. She will be, with the help of regional social media liaisons, better connecting members and increasing the visibility of the society to the general public. A recent activity, during the lead up to International Women’s Day on May 12th, saw IBS female members featured on Twitter and Facebook. Find these and more by searching for hashtag #IBSWomen on [twitter](#) or [facebook](#)! If your region has yet to nominate a social media liaison or you have any comments or suggestions, please send them to Emi at dr.emi.tanaka@gmail.com.



Biometrics by the Botanic Gardens Regional Conference, Adelaide, 1-6 December 2019

Make a note in your diary and book the first week in December for coming to Adelaide, South Australia. [Short courses and workshops](#) on a range of topics will be given on Sunday 1st Dec and Monday 2nd Dec, with the main conference running from Tuesday 3rd - Friday 6th Dec. Attuned to the interests of the regional membership, the conference will look at statistics research and applications in medicine and public health, agriculture and environment, genetics, natural sciences and education. Invited [speakers](#) include international and Australasian statisticians at various stages of their careers: Marti Anderson, Daniela Bustos-Korts, James Carpenter, Claudia Czado, Joanne De Faveri, Max Moldovan, Blair Robertson and Christopher Wikle.

Early bird registration closes: 19th September 2019.

More information is available on the conference website, www.ausbiometric2019.org.