Journal of Statistics Education

CALL FOR SUBMISSIONS:
Computing in the Statistics and Data Science Curriculum

Venn diagram from Nolan and Temple Lang (TAS, 2010)

In the diagram: Computational Statistics, Visualization, Advanced Computing, Statistical Computing, Web Technologies, Information Technologies, Integrated Development Environments; representation of numbers, linear algebra decompositions, numerical algorithms, EM, optimization, RNG, MCMC, Bayesian computation, modeling language, efficiency, parallel computing, distributed computing, OOP, compiled languages, programming scope, symbolic math, R packages, debugging, data structures, color, perception, interactivity, composition, animation, raster/vector graphics, grammar of graphics, lattice, grid, event programming, maps, GUIs, SVG, KML, Flash, HTTP, SOAP, XML, I/O, text processing, regular expressions, data bases, reproducible computation, shell tools, text editors, version control, authoring tools, file system concepts, portability

In 2020 it will have been 10 years since Nolan and Temple Lang's paper "Computing in the Statistics Curriculum" was published (*The American Statistician* (2010), 64(2):97-107).

In that influential paper Nolan and Temple Lang wrote:

• The nature of statistics is changing significantly with many opportunities to broaden the discipline and its impact on science and policy.

• To realize this potential, our curricula and educational culture must change. While there are opportunities for significant change in many dimensions, we focus more narrowly on computing and call for computing concepts to be integrated into the statistics curricula at all levels.

• Computational literacy and programming are as fundamental to statistical practice and research as mathematics.

• We advocate that our field needs to define statistical computing more broadly to include advancements in modern computing, beyond traditional numerical algorithms.

• Information technologies are increasingly important and should be added to the curriculum, as should the ability to reason about computational resources, work with large datasets, and perform computationally intensive tasks.

• We present an approach to teaching these topics in combination with scientific problems and modern statistical methods that focuses on ideas and skills for statistical inquiry and working with data.

• We outline the broad set of computational topics we might want students to encounter and offer ideas on how to teach them.

• We also discuss efforts to share pedagogical resources to help faculty teach this modern material (including supplemental materials).

The Nolan and Temple Lang paper has been highly cited and has prodded the statistics community to embrace computation as a foundation as important as mathematics.

Ten years after publication, what has changed? What still needs to change? What's needed to implement curricular shifts?

To further these discussions the *Journal of Statistics Education* is planning a set of themed papers to coincide with the tenth anniversary of the publication of "Computing in the Statistics Curriculum". We are inviting submissions that address the questions above and related questions.

TIMETABLE:

August 1, 2019
(call for submissions)

October 1, 2019
(request for submission of draft abstracts and working title to the following Google form https://forms.gle/gygMiZV4H4iMjvaw7)

December 1, 2019
(call for reviewers)

December 15, 2019
(deadline for submissions via the Journal of Statistics Education *submission site https://mc.manuscriptcentral.com/ujse, please select the special issue "Computing in the Statistics and Data Science Curriculum")*

March 15, 2020
(working deadline for initial editorial decisions)

July, 2020
(working deadline for final revisions)

November, 2020
(proposed publication date)

Questions?
Please contact the guest editors for the cluster of papers: **Johanna Hardin** (Pomona College) at *Jo.Hardin@pomona.edu* and **Nicholas Horton** (Amherst College) at *nhorton@amherst.edu* or **Jeffrey Witmer** (*JSE* Editor in Chief) at *jeff.witmer@oberlin.edu*