

# For Lab 7

2023-10-24

## Learning goals

- Using R's built-in loop functions: `apply`, `lapply` and contrasting them with `for` loops
- Investigate sampling error; see that larger samples have less sampling error.
- Visualize confidence intervals.
- Adding error bars to plots
- Conditional statements
- Functions

## Sources

- Materials from last year (this applies to all of these topics)
- For CIs, there are some good ideas here: [https://whitlockschluter3e.zoology.ubc.ca/RLabs/R\\_tutorial\\_Describing\\_data.html#confidence\\_intervals\\_of\\_the\\_mean](https://whitlockschluter3e.zoology.ubc.ca/RLabs/R_tutorial_Describing_data.html#confidence_intervals_of_the_mean) and here [https://whitlockschluter3e.zoology.ubc.ca/RExamples/Rcode\\_Chapter\\_4.html#approximate\\_confidence\\_intervals](https://whitlockschluter3e.zoology.ubc.ca/RExamples/Rcode_Chapter_4.html#approximate_confidence_intervals)
- For SEM, there are some good ideas here: [https://whitlockschluter3e.zoology.ubc.ca/RExamples/Rcode\\_Chapter\\_4.html#standard\\_error\\_of\\_the\\_mean](https://whitlockschluter3e.zoology.ubc.ca/RExamples/Rcode_Chapter_4.html#standard_error_of_the_mean) and lab6 from last year;
- Error bars: [https://whitlockschluter3e.zoology.ubc.ca/RExamples/Rcode\\_Chapter\\_4.html#error\\_bars\\_fig\\_44-1](https://whitlockschluter3e.zoology.ubc.ca/RExamples/Rcode_Chapter_4.html#error_bars_fig_44-1)
- Writing functions: lab6 last year;