

**CNR – Continuing Education New Workshop Information Sheet**

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| **Basic Description** | |
| Course Title: | Painless Reports and Data Presentation in R |
| Short Course Description (1-2 sentences): | This course will cover the basics of advanced plotting using the ggplot2 package and standardized, automated report generation using Rmarkdown. Students will also learn how to easily handle and summarize data in R using the dplyr and tidyr packages. |

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| **Background Information** | |
| Instructor(s): | Peter Euclide and Paul Frater |
| Instructor(s) Bio\*: |  |
| Course coordinator: | Wes Larson |
| Guest Speaker(s)\*\*: |  |
| Guest Speaker(s) Bio\*: |  |
| Proposed Date(s)/time of year: | November 2018 |
| Number of workshop days: | 2 |
| Contact hours for each workshop day: | 6-8? |
| Are you planning multiple offerings for this fiscal year: | No unless there is great interest in further offerings [I would also be interested in conducting multiple workshops if there is interest –peter] |
| Is this workshop a part of a larger program or could it be: | Could easily be part of larger R-series type program if desired [I would also be interested in a longer series, transitioning to R is all about contact time with the program, I could see 3 – 4 part series of 1-2 day workshops being helpful for that transition.] |
| \*Be sure to highlight your qualifications in relation to the workshop’s content. Please also include a photo.  \*\*Please identify their time commitment | |

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| **Audience Information** | |
| Target audience: | DNR biologists and research scientists |
| Target enrollment (minimum and maximum): | Min: 8-10  Max: 24? |
| Organizational affiliations of the target audience: | Wisconsin DNR Possibly UWSP Staff |
| Likely employers of the target audience: | Wisconsin DNR  UWSP |
| Important information regarding the target audience, i.e. best way to communicate, potential road blocks, etc. | Probably not used to automation of tasks  Probably not very tidy with data (in my experience)  Our focus is on facilitating the use of R after the course ends |
| Who would have access to a mailing list: | Wes? |

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| **Facility/Equipment Information** | |
| Desired workshop location: | UWSP computer lab |
| Specific facility needs (AV, computer lab, lab, housing, etc.) | Computer lab w/ monitor |
| Room Set-up (rows of tables, “U”-shape, conference style (square/rectangular, etc.) | N/A |
| Supply needs, quantity, and accessibility\*: | Computer access for people not affiliated with UWSP  Access to copy machine to print handouts [<https://www.rstudio.com/resources/cheatsheets/>]  Folder to give everyone that includes handouts? |
| Travel (expected mileage and time needed): | N/A |
| Instructor travel\*\*: | Peter – 150 miles from Milwaukee – UWSP. |
| Printing needs (number of pages, type of paper, color, special direction, etc.): | **Double-sided color prints of cheat sheets for:**   * [RMarkdown](https://www.rstudio.com/wp-content/uploads/2015/02/rmarkdown-cheatsheet.pdf) * [Ggplot2](https://www.rstudio.com/wp-content/uploads/2015/03/ggplot2-cheatsheet.pdf) * [Data wrangling](https://www.rstudio.com/wp-content/uploads/2015/02/data-wrangling-cheatsheet.pdf) |
| Textbook needs (title): | None |
| Software needs: | R and Rstudio installation on computers  Required R packages:   * ggplot2 * gpubr * Rmarkdown * tidyr * ddply |
| \*Where can we obtain the supplies needed, i.e. personal equipment, stockroom, or purchase  \*\*Will you need a fleet vehicle rental or expecting travel reimbursement? Mileage? | |

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| **Workshop Content** | |
| Pre-requisites: | They must have a basic understanding of R (i.e. know how to read in data and working knowledge of base plotting commands) |
| Learning objectives: | **At the conclusion of this workshop, participants will be able to:**   1. Create a personalized RMarkdown script of ggplot2 graph templates 2. Feel comfortable constructing publication quality plots using ggplot2 3. Manipulate large datasets using tidyr 4. Summarize data using dplyr 5. Construct presentation quality reports using RMarkdown   **Optional objectives:**   1. Create interactive maps using Leaflet and static maps using ggmap 2. Understand the basics and value of RShiny applications and widgets 3. Create presentations using R |
| Course outline (please specify the amount of time spent on each activity): | Rmarkdown – ½ to 2/3 day: How to annotate scripts, basic markdown code, html and PDF document construction.   * Course notes should be written in RNotebook for easy access later.   Learning dplyr and tidyr – ½ day: basics about “split-apply-combine”, why R can be faster than excel, walkthrough of basic commands with example dataframe.  Learning ggplot2 and gpubr – ½ day: Introduction to ggplot2 and gpubr, walkthrough of common fisheries and ecology graphs. (scatter plots, stacked bar charts, line graphs)  shiny ¼ to 1/3 day – Overview of RShiny. How it works and where to find resources on how to learn. <https://shiny.rstudio.com/tutorial/>]  **Optional:**  Mapping – ¼ to 1/3 day: ggmap and leaflet. Plotting xy coordinates on a static graph and creating a basic interactive map with leaflet. (e.g. <https://rstudio.github.io/leaflet/>) |
| Workshop outcomes (certificate of completion, competency certificate, credential, etc.): | Perhaps would be beneficial for these employees if DNR could issue an internal DNR R certification like they do with other pieces of equipment (i.e. machinery/boat use/etc) |

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| **Additional Information** | |
| Any additional information not covered above: |  |