Open to HSC postdocs. If you’re based at UPC or a USC affiliate site, please email [uscpda@usc.edu](mailto:uscpda@usc.edu) for access info.

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“**Cellular, Molecular, and Computational Tools for Insights and Analysis for Stem Cell Research**”

Summary: A discussion-based group that focuses on relevant topics to the research and interests of the center with an applied learning component (programming lab) so that individuals can broaden their understanding and knowledge of intellectual and applied aspects of work discussed. The programming aspect with cover specific tools & analyses every other week. During the “off weeks” (odd numbered weeks) a general introductory to programming series will be held to teach members of the center who desire to gain or strengthen computational skills.

Specific goals:

1. Participants will gain an in-depth understanding on how to read, criticize, and apply knowledge from primary scientific literature.

2. Participants will learn both the intellectual side of the work discussed as well as the applied side through tutorial based lab-sessions.

3. Participants will build and strengthen their computation skills and prowess.

4. To bring the center together for increased scientific discussion and group learning for all faculty, staff, and trainees.

Schedule:

Even Weeks: Wednesdays, 11-12pm (journal club discussion) & 2-4pm (advanced programming lab).

Odd Weeks: Wednesdays 11-12pm (journal club discussion), 2-4pm (intro. programming lab; see below pg. 3).

**Materials needed:**

Note: online versions are free

“Data Visualization with R”, Rob Kabacoff, <https://rkabacoff.github.io/datavis/>

“Hands-On Programming with R”, Garrett Grolemund, <https://rstudio-education.github.io/hopr/>

“R for Data Science”, Hadley Wickham & Garrett Grolemund, <https://r4ds.had.co.nz/>

R <https://www.r-project.org/>

R-Studio <https://rstudio.com/products/rstudio/download/>

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| Date | Week | Topic | Presenter |
| 04/01/2020 | Week 1 | AM: scRNAseq paper  PM: Into programming in R week 1 | AM: Nils Lindstrom  PM: Amanda Meyer |
| 04/08/2020 | Week 2 | AM: Good use of Seurat  PM: Seurat Tutorial (3 hour session) | AM: Nils Lindstrom  PM: Nils Lindstrom |
| 04/15/2020 | Week 3 | AM: Velocity article  PM: Intro to programming in R week 2 | AM: Nils Lindstrom  PM: Nils Lindstrom |
| 04/22/2020 | Week 4 | AM: Good use of velocity  PM: “Velocity of Directed Differentiation” | AM:  PM: Tracy Tran |
| 04/29/2020 | Week 5 | AM: STAR Paper  PM: Intro to programming in R week 3 | AM: Amanda Meyer  AM: Sunghyun Kim  PM: Amanda Meyer |
| 05/06/2020 | Week 6 | AM: Article  PM: Download from NCBI, Alignments (STAR) tutorial | AM:  PM: Amanda Meyer  PM: Sunghyun Kim |
| 05/13/2020 | Week 7 | AM: Cut and Run Paper  PM: Intro to programming in R: week 4 | AM: Vincent  PM: Amanada Meyer |
| 05/20/2020 | Week 8 | AM: Good use of Cut and Run paper  PM: Cut and Run tutorial | AM:  PM: Vincent |
| 05/27/2020 | Week 9 | AM: Integrating multiple techniques paper  PM: Intro to programming in R week 5 | AM:  PM: Amanda Meyer |
| 06/03/2020 | Week 10 | AM: Weighted gene networks paper  PM: Data Vis. With Ggplot2 | AM:  PM: |
| 06/10/2020 | Week 11 | AM: SeqFISH, 10X Spatial  PM: Intro to programming in R week 6 | AM: Nils Lindstrom  PM: Amanda Meyer |
| 06/17/2020 | Week 12 | AM: 10X spatial  PM: “Visualized ‘Spatial Transcriptomics’ for Your Organoids” tutorial | AM:  PM: Nils Lindstrom |
| 06/24/2020 | Week 13 | AM: Article  PM: Intro to programming in R week 7 | AM:  PM: Amanda Meyer |

**Intro to R Sessions**

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| Week | Topic | Text Materials and Problem Sets |
| Week 1 | What is programming? R as a language | “Hands-On Programming with R”, Garrett Grolemund Ch. 2.1-2.7, 3.1-3.4 |
| Week 2 | R Objects | “Hands-On Programming with R”, Garrett Grolemund Ch. 5.1-5.11 |
| Week 3 | R Notation & Modifying Values | “Hands-On Programming with R”, Garrett Grolemund Ch. 6.1-6.5, Ch. 7.01-7.04 |
| Week 4 | R Programs and Loops | “Hands-On Programming with R”, Garrett Grolemund Ch. 9.1-9.6, Ch. 11.1-11.6 |
| Week 5 | R S3, S4, S5 Class Objects | “Hands-On Programming with R”, Garrett Grolemund Ch. 10.1-10.8 |
| Week 6 | R Data Transformation, Tidy, and Factors | “R for Data Science”, Hadley Wickham & Garrett Grolemund Ch. 5.1-5.7, 12.1, 12.2, 12.5, 12.7, 15.1-15.5 |
| Week 7 | R Data Visualization | “R for Data Science”, Hadley Wickham & Garrett Grolemund Ch 3.1-3.10  “Data Visualization with R”, Rob Kabacoff  Ch. 2.1-2.3, 3.1-3.2, 10.1-10.8 |

**Purpose of the Research Continuity group:**

The Dean asked a group of people representing each segment of the Keck School of Medicine community to come together to think about continuity of research during the COVID-19 shut-down period, to strategize how to reassure the Keck research community and to make the shut-down period more productive. The initial meeting focused on discussing concerns in each community, engagement across communities, obtaining and dispersing information, with an overall goal to calm, help enable redirection of research without a loss of momentum, and recommend actions that can have temporary and lasting benefit to research in the Keck School of Medicine, and beyond.

If you have any comments or suggestions as to other seminars, workshops, etc that you would like to see to further develop your research career, please email us at [uscpda@usc.edu](mailto:uscpda@usc.edu).