

From: [Hudes, Estie](#)
Subject: FW: May 11th CAPS/PRC Town Hall & Methods Core present: Steve Gregorich, PhD -- Simplified power analyses for clustered sampling designs...Sample size ratios (SSR)
Date: Monday, May 3, 2021 11:48:38 AM
Attachments: [image002.png](#)

Dear CAPS Methods Core seminar participants,
Please consider attending this third and final talk in the series of seminars that Steve Gregorich at presenting before his retirement later this year.
Hope to see you next week,
--Estie

From: Blanco, Rochelle Hartwig <Rochelle.Blanco@ucsf.edu>
Sent: Friday, April 30, 2021 1:53 PM
Subject: May 11th CAPS/PRC Town Hall & Methods Core present: Steve Gregorich, PhD -- Simplified power analyses for clustered sampling designs...Sample size ratios (SSR)

CAPS Town Hall & CAPS Methods Core present:
Steve Gregorich, PhD



**Simplified power analyses for clustered sampling designs
with compound symmetric covariance structure of x and y : A
survey of sample size ratios (SSR)**

Tues., May 11th, 2021

11:00am – 12:30pm

This talk covers simplified sample size and power calculations supporting study designs where the data will have a 2- or 3-level clustered structure and it is reasonable to assume compound symmetric correlation structure of both x and y variables. In this context, power analyses are eased by preliminary calculation of *sample size ratios* (SSR), which take the study design and the correlation structure of x and y variables into account and allow use of standard power calculation software. The talk begins by reviewing commonly known SSRs that apply to 2-level nested data structures, e.g., the design effect (Deff). Next, concepts

governing whether x can have between-cluster, within-cluster, or both types of effects on y are discussed. SSRs appropriate for each type of x effect are introduced with consideration of the planned regression modeling framework, i.e., generalized linear mixed models (GLMM) or generalized estimating equations (GEE) versus survey sampling (SS) modeling framework. A power advantage of GLMM/GEE over the SS modeling framework is noted. Models of continuous and binary outcomes are considered, and simulation results are included.

[Register Here](#)

This talk is Part 3 in a 3-part series offered by CAPS Methods Core faculty member, Dr. Steve Gregorich, prior to his retirement later this year. The three recorded sessions were/are/will be as follows:

- 3/2**, 11-12:30 1. Introduction to exploratory factor analysis (EFA)*
- 4/13**, 11-12:30 2. Introduction to SAS PROC VARCLUS: A (mostly) superior alternative to EFA *
- 5/11**, 11-12:30 3. Simplified power analyses for clustered sampling designs with compound symmetric covariance structure of x and y: A survey of sample size ratios (SSR).

* Co-Sponsored by the CAPS Visiting Professors Program

Dr. Steve Gregorich is a Professor and statistician in the UCSF Department of Medicine. His research focuses on preventive health behaviors in diverse populations via clinic- and community-based randomized trials, quasi-experiments, and longitudinal observation studies. He has been investigator, principal statistician, and/or statistical/methodological mentor of over 80, largely federally funded, centers, projects, and career development awards.



Rochelle Blanco

Academic Program Management Officer

Traineeships in AIDS Prevention Studies (TAPS) Program

CAPS Developmental Core and CAPS Interventions and Implementation Science Core

(pronouns: she/her/hers) : <https://lgbt.ucsf.edu/pronounsmatter>

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UCSF Box 0886 | 550 16th Street, 3rd Floor | San Francisco, California 94143 (for FedEx use 94158)

Phone: 415-502-1000 ext. 17133 (vm generates instant email notice)

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