

Summer Institute in Clinical Dental Research Methods

June 29 – August 7, 2015 · University of Washington · Seattle, USA

The University of Washington School of Dentistry will offer a research training institute in the summer of 2015 for dental school faculty and other oral health professionals interested in clinical research in dentistry.

Institute courses include biostatistics, clinical epidemiology/study design, personal computing applications, clinical trials, behavioral research in dentistry, grantsmanship, case studies in data analysis, as well as an elective in Molecular Biology and Oral Health Applications. The fee is \$1,000, which includes 129 CDE credits, but not academic credit (which can be arranged through the University of Washington Summer Quarter Office and requires payment of additional academic tuition).

The summer institute is designed to offer training in research methods to which dentists (and other oral health professionals) may not have been adequately exposed during clinical training.



For those currently in or seeking academic or other positions which involve clinical dental research, the summer institute offers an opportunity to learn research methods which will enhance one's ability to perform good clinical research. The program lasts a full six weeks and is not available in modular form for shorter periods.

COURSES

- Biostatistics
- Clinical Epidemiology
- Computing Applications and Data Analysis
- Behavioral Research in Dentistry
- Fundamentals of Randomized Clinical Trials
- Molecular Biology and Oral Health Applications
- Seminar on Grantsmanship

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Courses

Biostatistics — 8:00–9:30 MWF · Spiekerman

This is equivalent to the introductory course taught for graduate students throughout the health sciences. Topics covered include descriptive statistics, elementary probability, comparison of two-sample means and proportions, simple linear regression and correlation. Parametric and non-parametric methods are discussed. More advanced methods (multiple regression, analysis of variance, logistic regression) are briefly described but not covered in detail. Applications and examples in dentistry are stressed throughout.

Clinical Epidemiology & Study Design in Dentistry — 8:00–9:30 TTh · Hujoel

The main goal of this course is to provide an overview of the scientific principles in clinical research. In the first part of the course, principles underlying all research designs are introduced. Topics covered include biological plausibility, the importance of comparison and temporality in establishing causality, data torturing, the formulation of a research question, refutation, placebo effects, and scientific conflicts of interest. In the second part of this course, three specific research designs are introduced: the case-control design, the cohort design, and the randomized controlled trial.

Computing Applications & Data Analysis — 10:00–12:00 TTh · Kaiyala

In this course, students learn how to use a variety of computer software packages for research applications. Instruction is given in e-mail, web resources, design of web pages, PowerPoint presentations, data analysis using Excel and SPSS, sample size calculations, and other topics as time permits. Practical aspects of data analysis are discussed, and students receive hands-on experience in analyzing data sets from oral health research studies. The course is designed to reinforce the theoretical principles covered in other Summer Institute courses such as “Biostatistics” and “Clinical Epidemiology and Study Design in Dentistry.” Classes are held in a computer lab where students have access to PCs.

Behavioral Research in Dentistry — 10:00–11:30 MWF · Weinstein, Milgrom, Coldwell, Coolidge, Grembowski, Heaton, Pickrell, Ramsay

The University of Washington has an unusually large number of behavioral scientists engaged in research in dentistry. This course is designed to introduce participants to some of the most commonly used methods and study designs in behavioral dental research, as well as to the areas in which research is conducted at the University of Washington. Applications to studies of dental fear, pain, neurosensory assessment, temporomandibular disorders, dental services utilization, outcomes of major dental procedures, orthodontic treatment, and pediatric and geriatric health are included.

Molecular Biology & Oral Health Applications — 1:30–2:20 TTh · Presland, Roberts

This course is designed as an introduction to molecular biology and recombinant DNA techniques, and its applications. It will discuss both basic concepts of molecular biology such as nucleic acid structure and function, RNA and protein synthesis, and applications that are relevant to oral health and dentistry as well as biological sciences in general. This course should provide a broad understanding of molecular biology and genetics, and how these disciplines are revolutionizing all aspects of biology and health care.

Fundamentals of Randomized Clinical Trials — 2:00–4:00 M · DeRouen

Fundamentals and special issues in randomized clinical trials will be discussed. Topics to be addressed include: what constitutes a clinical trial; reasons why clinical trials are used; characteristics of good trials; ethical issues; special topics in clinical trials including recruitment, compliance, and limitations of results.

Seminar on Grantsmanship — 2:00–4:00 W · Faculty: DeRouen, Cunha-Cruz, Dickstein, McKinney

Introduction to the grant review process; types of grants; criteria used in evaluating grants; elements of strong grant applications; human subjects and other ethical issues. Participants will be divided into teams and go through the process of developing an interdisciplinary grant proposal.

Faculty

TIMOTHY DeROUEN, Ph.D., is Director of the Summer Institute. He is Professor of Biostatistics, Oral Health Sciences, and Global Health, and Director of the Center for Global Oral Health. He has over forty years experience consulting and teaching in biomedical applications of statistics, especially in clinical medicine and dentistry, and has particular interests in the design and analysis of studies of periodontal disease.

SUSAN E. COLDWELL, Ph.D., is Professor in Oral Health Sciences and Associate Dean of Student Life and Admissions. Her research interests include developmental and physiological influences on taste preference and perception. She also works in the area of cognitive influences on pain perception in children. General interests include issues in psychophysical measurement of pain, anxiety, and taste.

TRILBY COOLIDGE, Ph.D., is Clinical Assistant Professor in the Department of Oral Health Sciences. Her research interests are psychometrics, dental fear, and psychological treatment of dental fear.

JOANA CUNHA-CRUZ, D.D.S., M.P.H., Ph.D., is Research Assistant Professor in the Department of Oral Health Sciences. Her research interests are oral epidemiology, social epidemiology, and evidence-based dental care.

DEBORAH DICKSTEIN, is the administrator of an ethics review committee in the Human Subjects Division of the University of Washington. She previously has served as a member of an ethics review committee for ten years, including chairing it for two years.

DAVID GREMBOWSKI, Ph.D., is Professor of Health Services and of Oral Health Sciences. His interests include prevention, access to care, dental insurance, cost containment, quality of care, dental decision-making, program evaluation, survey research, and dental health services research.

LISA HEATON, Ph.D., is Clinical Assistant Professor in Oral Health Sciences and a clinical psychologist in the Dental Fears Research Clinic. Her research interests are in oral health disparities and dental fear.

PHILIPPE HUJOEL, D.D.S., M.S.D., M.S., Ph.D., is Professor in the Department of Oral Health Sciences. His research interest is focused on the etiology and treatment of oral and craniofacial diseases.

KARL KAIYALA, Ph.D., Research Associate Professor in Oral Health Sciences, investigates physiological regulation, primarily using a rodent total calorimetry and temperature model. An area of particular interest concerns the systems-level biobehavioral adaptations elicited during acute and chronic drug administration. Dr. Kaiyala's work combines rigorous empirical methodologies with highly quantitative mathematical tools including control theory and biostatistics.

CHRISTY McKINNEY, Ph.D., is Clinical Assistant Professor in the Department of Oral Health Sciences. Her research interests include oral and craniofacial epidemiology, the safety of dental materials, oral clefts, maternal and child nutrition, and global health.

PETER MILGROM, D.D.S., is Professor of Oral Health Sciences and Director of the Northwest/Alaska Center to Reduce Oral Health Disparities. His research interests include the effects of xylitol on dental caries, and the behavioral and pharmacological management of fearful and phobic dental patients. He conducts research related to access to care for children from low income families.

JACQUELINE E. PICKRELL, Ph.D., is a Lecturer in the Departments of Oral Health Sciences and Psychology. Her research interests include the design and development of educational materials and motivational techniques for children, parents, fearful adults, and educators working in the areas of early childhood caries, and dental fear.

RICHARD PRESLAND, Ph.D., is Associate Professor of Oral Health Sciences in the School of Dentistry and Adjunct Associate Professor in the Division of Dermatology of the Department of Medicine. His research interests are in the molecular and cellular biology of epithelial differentiation, and in particular the role of the cytoskeleton and proteases in this process. He is also interested in genetic disorders that affect the development and function of the epidermis and oral cavity.

DOUGLAS RAMSAY, D.M.D., Ph.D., M.S.D., is Professor and Chair of Oral Health Sciences, Professor of Orthodontics and Pediatric Dentistry, and Director of the Regional Clinical Dental Research Center. His primary research interests are in the areas of experimental psychology and clinical dental research. His ongoing research projects include the study of tolerance development to nitrous oxide as well as methods to improve patient adherence with therapeutic regimens.

FRANK ROBERTS, D.D.S., Ph.D., is an Associate Professor of Periodontics at the University of Washington and the Staff Periodontist at the Seattle Veteran's Administration Hospital. His practical and research interests focus on regulation of inflammation in human adult periodontitis and other chronic inflammatory states, bacterial pathogenesis of inflammatory diseases, and biology and imaging of the dental implant.

CHARLES SPIEKERMAN, Ph.D., is a research scientist in the Department of Oral Health Sciences. His research interests are in statistical methods useful for handling correlated failure time data.

PHILIP WEINSTEIN, Ph.D., is Professor of Oral Health Sciences. His research interests include control and treatment of dental fear and anxiety in adults and children, early childhood caries, taste, and oral self care.

The School of Dentistry

The University of Washington School of Dentistry has 80 full-time faculty, 300 clinical faculty, 236 pre-doctoral dental students, and 92 graduate and specialty dental students, residents and postdoctoral fellows. It is at the forefront of dental research, as exemplified by the School's ranking among the top dental schools nationally with regard to research and research training support awarded by the National Institute for Dental and Craniofacial Research. Key elements in NIDCR support include a Center to Reduce Oral Health Disparities.

Staying in Seattle

The summer weather is mild, temperatures averaging about 75 degrees during the day with less than an inch of rain each month. Seattle is surrounded by splendid scenes of snow-capped mountains, evergreen forests and sparkling water. The city is encompassed by the Cascade Mountains and Lake Washington on the east and the Olympic Mountains and Puget Sound on the west.

you can stay in the dormitory for a few days while you check out the housing situation.



Housing

There are a number of options for housing:

- 1) Campus dormitory space is available to visitors. Call the Conference Housing Office at 206.616.1031, or fax at 206.543.4094. The Conference Housing Office will need to know the name of your departmental sponsor.

Please check their website for updated information:
www.hfs.washington.edu

- 2) The Visiting Faculty Housing Service has a listing service for short and long-term rentals. One of our staff will go to the Visiting Faculty Office to look for appropriate sublets and rentals.

In addition, several conveniently located hotels offer excellent rates for extended stays. Overall, the cost of staying in Seattle for the six-week program will range from \$2100 to \$3500 depending on the type of accommodation and meals you want. If you have trouble finding a place

Application

Applicants for the Summer Institute should send a complete curriculum vitae, along with a letter of application explaining why the Summer Institute is of interest and would be beneficial to them. Also, a letter should be sent from the applicant's supervisor (department chair or dean) indicating if the employing institution is supportive of the applicant's participation, and describing any benefits the institution will derive. Applications will be accepted starting January 1, 2015, and should be submitted prior to March 31, 2015, to ensure full consideration.

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