

## UW & SCHOOL OF NURSING RESOURCES

### *LABORATORIES*

The UW School of Nursing Biobehavioral Laboratory is a school-wide shared facility located in the T wing of the UW Health Sciences Center. There is a total of 7,816 square feet of laboratory space comprising this core. Laboratory space is assigned based on function rather than individual investigator, thus laboratory spaces are shared by multiple investigators including predoctoral and postdoctoral fellows. Descriptions of the relevant individual laboratories follow.

#### **Molecular**

A state of the art Molecular Genetics Laboratory is in T658. The existing facilities include: DNA Sequence Detector 9700 (Perkins-Elmer Biosystems), PCR thermal cyclers, refrigerated Jouan centrifuge with rotors for Eppendorf and larger tubes, camera for gel documentation, hybridization incubators for Northern and Southern analysis (Robins Scientific), horizontal and vertical gel electrophoresis units (BioRad), power supplies, and computers for data analysis. Freezers, refrigerators, an autoclave and deionized water are available in the adjoining laboratories. Additionally, the laboratory has access to a tissue culture hood and long-term sample storage at -70 degrees.

#### **Biochemical**

At present, the biochemical laboratory has the capacity to measure neurochemicals (e.g., serotonin, 5-HIAA, norepinephrine, epinephrine, dopamine), neurotransmitter synthesizing and degrading enzymes (e.g., choline acetyltransferase), and hormones (e.g., prolactin, growth hormone, testosterone, estrogen, progesterone, FSH, LH, cortisol, ACTH, melatonin). These assays are performed on various body fluids including urine, blood, and saliva from humans and on fluids and tissues from rodents. The primary biochemical methods used are high performance liquid chromatography, enzyme-linked immunoabsorbance (ELISA), chemiluminescent (Immulite), and radioimmunoassays. In addition, there is a dry chemical lab, autoclave, and 170 cubic feet of -70 degree storage space for samples for both archival and ongoing experimental studies.

#### **Immune**

The Immune Function Laboratory is located in T630, T630A, and T636. In this space, researchers perform assays to determine cytokine production, cell phenotypes, natural killer cell cytotoxicity, and lymphocyte proliferation. Equipment includes a Level 2 biological safety cabinet, tissue culture incubators, refrigerated centrifuge, microfuge, compound microscope, inverted tissue culture microscope, fluorescence microscope, Coulter counter, plate washer, gamma counter (Cobra), -70° freezer, -20° freezer, refrigerators, liquid N<sub>2</sub> storage tank, and a computer terminal for analysis of FACS data. Researchers also use the animal housing unit and surgical suite (T640), as well as the autoclave and deionized water supply.

### *CLINICAL*

The mission of the Clinical Studies Unit at the UW SON is to advance nursing science and to provide research training for School of Nursing students. This is achieved by providing research space for the conduct of human research that can be shared by a number of investigators throughout the School of Nursing.

The Clinical Studies Unit is under the supervision of the Office for Nursing Research. The Associate Dean for Research directs the Clinical Studies Unit. Rooms included in the Clinical Studies Unit are 3 exam/interview rooms and a reception area, 2 group interview/conference rooms, and research project offices. These rooms are supplied with additional equipment including a J&J biofeedback system with feedback modules for 8 channels; 4 Dinamaps for automatic blood pressures; 1 UltraCOM for noninvasive hemodynamics and 10 mini-loggers for 24-hour activity monitoring.

## *HARBORVIEW INJURY RESEARCH AND PREVENTION CENTER*

Founded in 1985, Harborview Injury Research and Prevention Center (HIPRC) is one of ten injury-control centers funded by the Centers for Disease Control and Prevention (CDC) in the US. It is a multi-disciplinary center to understand how and why people suffer injuries, and what can be done to prevent them. The targets of these programs are the groups at greatest risk of injury including older adults. The HIPRC has a strong association with the Level I Regional Adult & Pediatric Trauma Center at Harborview Medical Center, the sole level I facility serving the Northwest States of Washington, Idaho, Montana, and Alaska. The HIPRC represents a collaboration of pediatricians, surgeons, epidemiologists, nurses, psychiatrists, health educators, economists, and others devoted to the academic study of injury and injury prevention. Injury programs draw on the strengths of the Trauma Center, the Schools of Medicine, Public Health, Nursing, and Social Work at the University of Washington, and our various community partners, especially the Center for Health Studies of Group Health Cooperative and the Public Health – Seattle & King County. The HIPRC has great depth in research methodology and its book on injury research is widely used in injury research courses around the country.

Dr. Beth Ebel directs the HIPRC, with a total annual budget exceeding \$5 million. The Center, with its cadre of 27 core investigators from many academic disciplines, has produced over 900 articles in scientific journals and produced seminal work in the areas of road and occupant safety, violence, drowning, biomechanics and trauma care systems research. The HIPRC is organized into four sections: epidemiology and prevention, biomechanics, acute care, and rehabilitation. These active research areas are guided by the commitment to reduce the impact of injury and violence on people's lives through research, education, training and public awareness to more effectively pursue the following goals: 1) Track the type, causes, treatment and consequences of injuries; 2) Use epidemiological tools to identify risk factors for injury; 3) Develop and evaluate new injury-prevention programs, using behavior change, community education, government action, and product- environment modification; 4) Use the principles of biomechanics to study injury causes and treatment; 5) Develop more effective ways to resuscitate and treat injury victims; 6) Improve rehabilitation strategies by identifying injury-related disability and long-term effects; 7) Train new investigators in the field of injury research; 8) Educate health professionals, policy makers, and the public about trauma's magnitude, costs, and prevention.

Dr. Thompson's K12 mentor is a core faculty member of the HIPRC and she is engaged in active collaborative projects with several others. In addition, she attends and presents at HIPRC research seminars.

## *UNIVERSITY OF WASHINGTON TRAUMATIC BRAIN INJURY MODEL SYSTEMS (UW TBIMS)*

The UW TBIMS is one of 17 centers funded around the US by the National Institute on Disability and Rehabilitation Research and is headed by Dr. Kathleen Bell. The goal of the UW TBIMS is to promote the health, wellbeing, and recovery of persons with TBI by applying knowledge gained from cutting edge research into the clinical care of patients with TBI. The UW TBIMS contributes information about brain injury, treatments, costs, and outcomes to the Traumatic Brain Injury National Data Center database. Dr. Thompson has an ongoing collaboration with members of the model systems program: Drs. Temkin and Dikmen to examine the influence of comorbid health conditions on long-term outcomes following TBI in older adults using the UW TBI repository. In addition, Dr. Thompson is coordinating the proposed research with ongoing and proposed TBIMS studies and the TBIMS leadership is supportive of the proposed project.

## *GENERAL CLINICAL RESEARCH CENTER*

The University of Washington's General Clinical Research Center (GCRC) is located on the 7th floor of University Medical Center (UWMC), which is attached to the UW Health Sciences Center, where the School of Nursing is located. The GCRC Informatics Core helps investigators to design methodologies for the capture of research data into computer databases and offers investigators access to electronic data storage facilities as well as secure, shared database services on a secure, administered, local-area network. This core will be accessed by the present proposal to establish and maintain data using a logic-based input system. The GCRC has extensive experience with frequent-blood-sampling protocols which are carried out by the CRC nurses, and provides subject rooms, meals, and supplies for the collection and handling of samples. The CRC contains 10 adult and pediatric beds at UWMC separate from clinical care wards. The CRC provides a communal

resource in the form of a controlled environment for high quality and ethical research on humans in an inpatient and outpatient setting. Faculty and doctoral students have conducted studies at the CRC.

#### *K12 CLINICAL RESEARCH TRAINING DEVELOPMENT PROGRAM*

*Biostatistical Collaboration Unit:* Drs. Thomas Fleming (Professor, Department of Biostatistics) and Patrick Heagerty (Associate Professor of Biostatistics) work closely with masters-level statisticians, including Tessa Rue, MS, who provide day-to-day collaborative and consultative expertise to K12 scholars. *Research Coordinator Training and Support Unit:* Experienced research assistants and coordinators are available on a short-term basis to assist with studies and to train staff to recruit subjects, obtain informed consent, collect clinical data, review medical records, perform interviews, administer questionnaires, and maintain high-quality records. *Mentorship:* formal mentorship is provided to Dr. Thompson by her identified K12 mentors, Drs. Frederick Rivara (Professor, Pediatrics; Adjunct Professor Epidemiology) and Wayne McCormick (Professor, Geriatrics).

#### *DE TORNYAY CENTER*

The UW School of Nursing's de Tornyay Center on Healthy Aging was established in 1996 to honor Dr. Rheba de Tornyay, Dean Emeritus of the University of Washington School of Nursing. Its goal is to serve as a catalyst for promoting healthy aging through education, clinical services and research. The de Tornyay Center addresses issues and priorities for aging with particular emphasis on the large and growing population over age 65. The increased challenges to health and independent living, the need for new models for organization and delivery of health care services for older adults, the need for education and research, and the increasing emphasis on self and community responsibility combine as driving forces in the work of the de Tornyay Center. Dr. Thompson actively participates in activities of the DeTornyay Center.

#### *RAND/HARTFORD CENTER FOR INTERDISCIPLINARY GERIATRIC RESEARCH*

Established in 2006, The Center for Interdisciplinary Geriatric Research (CIGR) promotes interdisciplinary collaboration in the development, testing, and dissemination of health-enhancing interventions for older adults. The center goals are to promote interdisciplinary linkages and cross-disciplinary collaborations; to train and mentor junior faculty to conduct interdisciplinary geriatric research; and to create and foster a center identity to enhance sustainability. Dr. Thompson serves as program faculty within the CIGR and is actively collaborating with several CIGR nurse and physician colleagues.

#### *GENDER AND WOMEN'S HEALTH RESEARCH CENTER*

The Center's Biobehavioral Laboratory Core was established to develop and maintain the overall quality of measures important to understanding biological basis of gender-based differences across the lifespan and women's unique responses to health conditions. This core has enabled Center investigators to integrate biological indicators with behavioral and experiential responses to address questions unique to women's health (e.g. ovarian hormones and symptom experience across the lifespan) and to begin studies focused on sex differences and gender disparities in health outcomes. The Center's Gender Disparities Core was established to contribute to the reduction or elimination of gender disparities in health by supporting research that addresses the interplay of genetic and other biologic influences with socio-cultural determinants of women's health. Dr. Voss has ongoing and active collaborations within the Gender and Women's Health Research Center focusing on these issues.

#### **COMPUTER RESOURCES**

All computing resources at the University of Washington (UW) are accessible through the University's ubiquitous digital communications network. These resources include, in aggregate, thousands of clustered server computers at the central UW computing site, and at other sites campus-wide. These servers support administrative, bibliographic, and research-oriented information resources. Additionally, Unix-based computational resources and internet-oriented services, such as Electronic Mail and extensive Wide World

Web development and hosting, are provided both locally and via the UW network central resources. A combination of central and departmental staff provides an extensive range of support services for computing and networking at the University.

Within the School of Nursing (SoN) are more than 500 personal computer workstations on a managed Microsoft Windows network in approximately 6 locations throughout the University, University District and North Seattle. The majority of these are modern PCs using recent versions of the Windows operating system and are secured by implementing the integrated firewall capacity if available, the latest in antivirus software, and a combination of anti-spyware tools – all of which are set to autoupdate to maintain a high level of computing security and reliability. Virtually all of these PCs are attached to the campus network and local area network, either by high-capacity wired or wireless connections, and through it, to the internet. In addition to electronic mail and web browsers, standard office applications software such as word processing, spreadsheets, presentation graphics are available on all PCs in the School. Secure file sharing and database services as well as statistical analysis software are provided by SoN administered servers to authenticated School workstations. The School of Nursing manages and collocates its servers within a controlled access, high quality, high capacity server facility maintained by UW campus computing resources. In-house SoN information technology staff maintain and support these servers as well as desktop and laptop PC users throughout the SoN computing environment.

SoN Faculty and staff PC workstations can easily and securely access both UW centrally supported, and SoN administered, research-oriented facilities which include statistical analysis and data management packages, such as SPSS, SAS, STATA, LISREL, S-PLUS, COHEN, AXUM, and EGRET.