Transdisciplinary Training Program in Functional Foods, Bioactive Food Components & Human Health

Announcing the Kannapolis Scholars Program

Through a $1,000,000 grant from the U.S. Department of Agriculture – Agriculture & Food Research Initiative (USDA-AFRI), an exciting new effort is being implemented. The Transdisciplinary Graduate Training Program is recruiting exceptional graduate students from multiple disciplines who will be provided the opportunity to immerse themselves in transdisciplinary, integrated research to solve complex problems within the broad domain of functional foods, bioactive food components and human health. These graduate students will be known as *Kannapolis Scholars.*

Summer Rotations at the NCRC

Kannapolis Scholars will initially take part in a 10 week immersion training session *(*May 31 to August 6 for 2010) on the North Carolina Research Campus (NCRC), spend fall and spring semesters on their home campus base, then return to NCRC in the next summer for a follow up 10 week program. During the summer training sessions, the Scholars will engage in transdisciplinary research projects with faculty mentors, participate in weekly summer seminars and journal club, and finally present results at a Research Symposium at the end of the summer session.

Transdisciplinary Faculty Mentors

A group of 30 faculty members from eight universities in North Carolina (described below) will serve as mentors for the *Kannapolis Scholars*. The mentors represent multiple disciplines of food science, nutritional science, plant science, animal science, microbiology, biochemistry and metabolomics. Thirteen faculty are resident on the NCRC campus while 18 faculty are located on the eight associated base-university campuses.

Financial support:

Total package - $37,300/scholar

15-month stipend of $22,000/yr

$5,800 tuition allowance

$4,000 summer housing allowance

Who should apply?

Potential *Kannapolis Scholars* are nominated after they have been admitted into a graduate program at one of the base-university campuses.

Nominations are accepted for both M.S. and Ph.D. programs, within their first year of study.

Students from underrepresented groups are especially encouraged to apply.

This program is only open to US citizens and permanent residents.

Deadlines & dates:

Deadline for nominations is March 1, 2010

The first summer rotation at the NCRC spans from May 31 to August 6, 2010.

Learn More:

Direct questions and requests for application materials to:

Dr. Jack Odle
Director, Transdisciplinary Training Grant Program &
WNR Professor of Nutritional Biochemistry
NC State University, Department of Animal Science
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Eight Collaborating NC Universities

Duke University	UNC Chapel Hill	North Carolina State University	UNC Greensboro	UNC Charlotte	Appalachian State University	North Carolina A & T University	North Carolina Central University

The Program will provide these research opportunities for the *Kannapolis Scholars*:

Appalachian State University (ASU) – *Human Performance Laboratory*. The mission of the ASU/NCRC Human Performance Laboratory is to investigate the influence of unique plant molecules such as flavonoids on age-related loss of muscle mass, muscle mitochondrial biogenesis and exercise-induced changes in immune function, oxidative stress and inflammation. The laboratory is fully equipped with 10 treadmills, 10 cycle ergometers, five metabolic devices, and supporting instruments to measure human metabolic responses to varying exercise workloads under specified nutritional conditions. http://www.hles.appstate.edu/areas/ncrc/

Duke University – Duke University's *Translational Medicine Institute* focuses on speeding the movement of new therapies from the research laboratory to patients who need them most. The Institute strives to streamline the process for getting diagnostic technologies, prevention efforts and therapies into the hands of physicians and other healthcare providers. As part of this focus, the University is leading the $35,000,000 M.U.R.D.O.C.K. Study, which has the potential to revolutionize healthcare by finding ways to match treatment to a patient's genetic profile. http://www.dtmi.duke.edu/dtri/murdock

NC A&T State University – NC A&T State University's *Center of Excellence for Post Harvest Technologies* (CEPHT) conducts cutting-edge research in post harvest technologies and food science. Post harvest technologies focus on improving the quality and safety of food after it has left the farm. CEPHT's goal is to develop multidisciplinary programs focused on post harvest technologies including research pertaining to processing, preservation, consumer research, recovery of health promoting food components, food safety issues, storage stability and quality, and value-added product development for food and non-food uses. http://www.ag.ncat.edu

NC Central University – North Carolina Central University's Nutrition Research Program conducts groundbreaking work on Zebrafish and rodent cancer models to advance knowledge of human nutrition at the cellular and genetic level. This program complements and strengthens the metabolomics and genomics focus of the other NCRC partners. http://ariel.acc.nccu.edu/Academics/BBRI

NC State University (NCSU) – The NCSU *Plants for Human Health Institute* is part of an integrated effort across NCRC to utilize emerging technologies for plant improvement and human health benefits. Staffed by the NCSU College of Agriculture and Life Sciences, the role of the Institute is to develop a new generation of fruits and vegetables which are pharmacologically active at dietary levels of intake, and to investigate medicinal plant resources from sources around the globe which may have a place in the future American marketplace. Researchers use advanced scientific tools to gain new insight into cellular processes, and then translate these breakthroughs through genomics and plant breeding into plants with desired traits. http://www.ncsu.edu/phhi/

UNC Chapel Hill – Using advanced genomic and metabolomic biotechnology, the *Nutrition Research Institute* works to develop innovative approaches to understanding the role of diet and activity in brain development, cancer prevention, and prevention and treatment of obesity. The Institute studies individual metabolic variations to develop nutrition solutions that are targeted to an individual, allowing healthcare professionals to provide patient-specific treatment. http://nri.unc.edu/

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UNC Charlotte – UNC Charlotte's *Bioinformatics Research Center* (BRC) defines bioinformatics as the "discovery, development, and application of novel computational technologies to help solve important biological problems." At NCRC, the Center provides specialized computer systems and software, data management solutions, and analysis for academic researchers and biotechnology companies. In this role, BRC offers sophisticated computational support in the design and development of new research and technologies. http://www.bioinformatics.uncc.edu/

UNC-Greensboro – The UNC Greensboro (UNCG) *Center for Research Excellence in Bioactive Food Components* at NCRC is a satellite to the UNCG Department of Nutrition, School of Human Environmental Sciences on the UNCG main campus. The focus of the Center's research is to understand cellular and molecular mechanisms of action in bioactive food components and the molecular targets for these dietary components. The Center also focuses on expanding the fundamental understanding of these components and their benefits to human health and wellness, healthy aging and prevention of diseases such as cancer. http://www.uncg.edu/ntr/ncrc/

NC Research Campus and David H. Murdock Research Institute

The North Carolina Research Campus (NCRC) is a private-public venture created to foster collaboration and further knowledge in biotechnology, nutrition, agriculture and health. The campus is committed to fostering transdisciplinary research among the eight constituent universities and a growing list of industry partners. http://www.ncresearchcampus.net/about-ncrc/

The vision and funding behind NCRC originated from Mr. David H. Murdock, owner of Dole Foods Company, Inc. The vision for NCRC is to create a world-class research hub where collaborative science will lead the charge for great discoveries in nutrition, health and biotechnology research. The mission of NCRC is to improve the health, well-being and longevity of citizens of North Carolina and the world through improved human nutrition, improved plants, better understanding of bioactive food components and personalized medicine.

Efforts are anchored by the *David H. Murdock Research Institute (DHMRI)*, a nonprofit foundation located in the core laboratory building that houses over $150 million of state-of-the-art scientific equipment for genomics, metabolomics, proteomics, NMR, microscopy, histochemistry, cell culture and transgenics research, including an on-site vivarium.