The Center for Environmental Genetics (CEG) is an NIH/NIEHS-supported center dedicated to promoting integrative research among basic and applied scientists, epidemiologists, and clinicians, in order to obtain better understanding of gene-environment interactions. We seek to improve human health through clinical practice and public health initiatives that prevent illness and decrease mortality from diseases associated with environmental exposures and adverse epigenetic effects. The CEG Career Development Program (CDP) contributes toward this goal by supporting biomedical, clinical, and environmental health investigators (research and tenure track) and promoting cross-training in environmental health sciences research.

The CEG supports Next Generation Biomedical Investigators (NGBI) with financial awards and mentoring activities in support of one’s transition from early career investigator to established, funded investigator.

Eligibility Requirements

- A junior-level investigator defined as appointed to an entry-level full time faculty (research or tenure track) academic position within the past 5 years (appointment no earlier than April 2011).
- The candidate must have an MD, PhD, or other equivalent degree.
- Evidence of scholarship, such as peer-reviewed publication record.
- Preference is given to U.S. citizens or those with a permanent residence visa.
- Mentor or mentoring committee.

Types of financial support include salary (with matching departmental funds), research supplies, travel to meetings or workshops, and CEG Core use. Applicants must provide a detailed budget with budget justification. Awards are generally from $2,000-$15,000 depending on the request and availability of resources. This award may be higher with strong justification.

The goal is to help launch as many NGBIs as possible in the area of environmental health science. A CEG career development award can enrich the investigator’s CV as grant support from an NIH-funded center. Ideally proposals will focus on genetics and epigenetics and have a high relevance to the mission of the CEG. ‘Environment’ is broadly defined and includes nutrition, infectious agents, xenobiotics, and psycho-social issues. As indicated on page 2, applications are due by 5:00 PM January 29, 2016.

Resources and Benefits

Early career investigators often begin their careers with scant resources and limited understanding of the requirements for a successful academic career. The CDP helps to rectify this situation by providing individualized mentorship and career-building support. Suggested funding includes

- **Funds** for laboratory and other research supplies, or **CEG core use** (see cores, below).
- **Travel** for attendance at national meetings, summer internships at NIH (especially NIEHS), and/or other career development workshops and experiences such as those offered by The Jackson Laboratory, Cold Spring Harbor Laboratory, and Harvard School of Public Health.
- **Mentorship** with preparation of grant proposals and admittance to the Design and Management course provided by Drs. Haynes and Ryan.
- Certification as an NIEHS Center for Environmental Genetics Next Generation Biomedical Investigator (NGBI) award recipient.
- NGBIs are eligible to apply for a Pilot Program Project award from the CEG for up to $30,000 in the limited competition Mentor-Mentee category.

Access and subsidies for CEG core services include

**Bioinformatics Core:** NGBIs have priority use of this core, which assists investigators in converting genomic and protein data into meaningful information through the use of appropriate statistical methods and computational tools.

**Integrative Health Sciences Facility Core:** NGBIs receive assistance to develop expertise in the use of exposure biomarkers in human studies, including selection, collection, processing and storage, data interpretation, and communication of results. This Core provides expert consultants as a resource to address design and methodological questions in studies of gene-environment interactions. The Core has informatics and biospecimen resources for research purposes, including the Fernald Community Cohort Biorepository.

**Integrative Technologies Support Core:** Awardees can receive assistance in experimental design using technologies that might be new to the investigator and include the following facilities:
- Genomics, Epigenomics and Sequencing Core
- Transgenic and Knockout Mice
- Microscopy
- Genotyping Facility
- Proteomics and Metabolomics Analyses
- High-Field Magnetic Resonance Imaging and Spectroscopy
- Flow Cytometry Facility
- Analytical Services and Mass Spectrometry (large and small molecules & heavy metals)

**Nomination Process**

An NIH format Face Page and biographical sketch of the nominee, and a 3 page (maximum) application packet that includes

1. A 2 to 3 page summary of specific research interests, including gene-environment interactions, i.e. the role of molecular, epigenetic, or genetic variation and environmental exposures on health (or how the funded work will lead to research in this area). This summary should include an overview of the research concept or career development activities for which funding is requested and the potential synergy of the research with the CEG. Also describe special interests and plans for cross-training in one or multiple basic, translational, or clinical environmental health areas;

2. A budget that outlines the activities that will be supported by these funds, the resources requested, and how this award will benefit the career development of the applicant. No F&As or indirects will be provided.

3. Documentation of IACUC or IRB approval, including expiration dates, must be provided for proposals involving human subjects or animal studies. If institutional review is pending / in process at time of submission, applicants should note that IRB and/or IACUC approval documentation MUST be provided prior to release of any funds. Delays in IRB / IACUC documentation will cause delays in award release.

Letter from a senior faculty member/mentor. This letter should state why the nominee is an excellent candidate and summarize the following:
1. Brief description of the mentoring plan that the senior faculty member will provide to assist the NGBI.

2. Career goals and scientific merit of the candidate’s ongoing and potential research, and why the candidate is considered promising.

3. The applicant’s alignment with the CEG’s mission and how participation with the CEG will contribute to the applicant’s scientific development.

4. Facilities and research opportunities available to the candidate in his or her home department.

A letter of recommendation from the division or department chair that outlines specific commitment to the candidate’s career development, including protected time and resources such as space, equipment, and funding.

Selection will be made by a CEG committee co-chaired by the Core directors, Dr. Grace LeMasters and Dr. Daniel Woo. NGBIs can apply for a 2nd year of support, assuming adequate progress the 1st year in the form of publications, acquisition of promising pilot data, and/or submission of a grant proposal either as PI or co-investigator. Applications are due by 5:00 PM January 29, 2016.

Materials should be addressed to Drs. LeMasters & Woo and submitted in c/o Teresa Donovan: donovata@ucmail.uc.edu. For scientific questions contact Grace.Lemasters@uc.edu or Daniel.Woo@uc.edu.

All CEG-NGBI awardees agree to

- Acknowledge Center for Environmental Genetics support (NIEHS award P30 ES006096) on publications or other products resulting from these funds;

- Comply with NIH Public Access Policy: http://publicaccess.nih.gov/ NIH public access policy requires scientists to submit final peer-reviewed journal manuscripts that arise from NIH funds to PubMed Central immediately upon acceptance for publication. Published works also must acknowledge the CEG’s NIEHS award P30 ES006096. Additional instructions at http://www.ncbi.nlm.nih.gov/books/NBK53595/.

- Present research progress at the conclusion of funding by a seminar presentation;

- Prepare a one page report on how CEG support was used to meet the goals of the awardee and CEG;

- Meet with Core directors Dr. LeMasters and Dr. Woo as requested;

- Attend 2 – 3 career development workshops provided by the CDP.