

Social Environments and Population Health Predoctoral Training Program

The training program, funded by a T32 grant from the National Institutes of Health, provides multidisciplinary in-class training in population health issues for predoctoral students. It also provides mentored research and numerous professionalization activities, including colloquia, workshops, and support to attend conferences. These are described in detail below.

General Training Activities

Mentored Research

One of the linchpins of the training program is mentored research. Each trainee is assigned a mentor and works with that mentor on research projects with the goal of publishing research in high-impact journals. This hands-on research training is based on the model of learning by doing. The resulting publications not only represent new contributions to science, but they also provided opportunities for socialization in the profession, networking, and building a scholarly record and reputation. Socialization in the profession occurs as trainees learn about expectations for publication, participate in grant writing efforts, and communicate their research in person and in writing. Among these activities, every year the demography training program holds a mini conference prior to the annual Population Association of America meeting where graduate students present their papers or posters to obtain feedback from faculty and fellow trainees. PAA networking occurs when trainees attend conferences to present their research. These mentored research experience also often help students develop their dissertation projects. All doctoral students are required to have a faculty member from another discipline on their dissertation committee.

Brownbag Series

Trainees are expected to attend the frequently offered PRI brownbag seminars, of which there are several every semester. The presenters at these brownbag seminars come from a wide variety of disciplines, including sociology, human development and family studies, public health, anthropology, and economics. The presenters typically come from other academic institutions, though they include Penn State researchers as well. In addition to the PRI brownbag series are department-specific ones that bring in visitors throughout the year.

Workshops and Symposia

In addition to traditional brownbag seminars and department colloquia, trainees are expected to attend a number of substantive and methodological workshops and symposia. They include:

- (1) Demography Graduate Student Methodology Workshop, which is designed to enhance the breadth and depth of training in demographic methods for Dual-Degree Graduate Degree students. Students take responsibility for choosing the topic, inviting the lecturers, and managing the conference.
- (2) Grant writing workshop, organized in cooperation with an NIA-funded T32 training program on Aging, which is targeted to postdoctoral trainees but is also open to all trainees. The workshop is a semester long RO3-writing boot camp that requires a commitment to submit an RO3 application to the NIH at the end of the semester. Trainees submit a draft of their application for faculty review and participate in a mock study section review.
- (3) DeJong Lecture Series in Social Demography, which includes keynote addresses by distinguished social demographers.
- (4) Clifford C. Clogg Memorial Lecture Series, organized by the departments of Statistics and Sociology, brings internationally known scholars in methods and statistics to Penn State for two days of lectures and informal discussions.

- (5) Methodology Center Brown-Bag Series and Workshops, which are designed to disseminate new methods for social, behavioral, and health sciences research.
- (6) Gene-Environment Research Initiative (GERI) Workshops, which focus on gene-environment interplay.

PRI Working Groups

Trainees can also participate in a number of PRI working groups. The multidisciplinary working groups consist of PRI researchers and other faculty across campus who share a common substantive interest and convene regularly to assess the state and trajectory of new science within a specialty area, to provide critical peer reaction to ongoing or planned work, and to spark creative ideas and catalyze the development of collaborative and multidisciplinary research projects.

Attending Conferences

Trainees are expected to attend the annual Population Association of America (PAA) meetings as part of their professional development in demography and to submit an abstract for paper/poster presentation consideration. All trainees are provided funds to attend this conference. The PAA meeting provides an opportunity for professionalization, networking, and communicating one's research to a larger audience. The PAA is multidisciplinary association that features research on a broad array of population science topics, of which population health is one of the most prominent. In addition, the Graduate Program in Demography supported 8 demography graduate students presenting at the last conference of the International Union for the Scientific Study of Population (IUSSP) in South Africa.

Pedagogical Training

The usual support period provided by the training grant is two years. The primary objective of the predoctoral training program is to develop and enhance trainee skills and knowledge of cutting-edge science in social environments and population health. It is, by design, a multidisciplinary program which builds upon and expands our more than 30 years of experience in offering a dual-degree PhD degree in Demography. The program is substantively rich and methodologically rigorous. The two-year period of support is appropriate because all graduate students in the participating programs are guaranteed funding for three to five years, and in practice for at least four years in all. The T32 provides invaluable support because it provides the structure for students to gain specific expertise in Population Health, and allows students to extend their graduate training if needed to complete research projects and publish their work as they pursue academic and research appointments after their training.

Specifically, the predoctoral training program has the following key pedagogic elements in the formal course work component of the training effort:

- 1) A Graduate School awarded dual-PhD in Demography and either Human Development and Family Studies, Sociology, Rural Sociology, Anthropology, or Health Policy and Administration
- 2) Required disciplinary foundational courses in the home departments
- 3) Required methods and statistics courses appropriate to conduct high quality research
- 4) Core dual-PhD courses in demographic theory, demographic methods, and population processes: fertility, health/mortality, immigration/migration, aging, and family processes
- 5) Substantive courses in population health
- 6) Professional development demography colloquium (e.g., grant writing, publication processes, responsible conduct of research, computer skills upgrade, etc.) for all trainees at

least twice during their time in the program (usually in the fall of year 1 of study and spring of year 3)

In sum, trainees are awarded a dual-discipline PhD degree by the Graduate School and acquire multidisciplinary knowledge of population health research. Our efforts to ensure multidisciplinary training are aided by a demography program requirement that all predoctoral students take courses outside of their disciplinary department, and by a Graduate School requirement that all doctoral committees include a member from outside their home department. The usual time period required for completion of course work, examinations, and dissertation research for the dual-PhD program is five years.

The course curriculum

The predoctoral students in the T32 training program will come from Dual Degree Demography program who also are working toward a degree in one of five home departments: Sociology, Human Development and Family Studies, Rural Sociology, Anthropology, and Health Policy and Administration. T32 trainees will be required to: (1) fulfill the PhD course requirements in their respective home programs, (2) complete the course work for the Dual Degree Demography program, and (3) take courses that provide specific expertise in Social Environments and Population Health. Each home program has its own requirements, so we focus on items (2) and (3) below.

The **Dual Degree PhD Program in Demography** provides students with multidisciplinary training in population studies. The requirements for the dual degree consist of the following: Demography major area (8 courses minimum+ 1 professional development seminar):

- One Survey course: Social Demography, Economic Demography, or Anthropological Demography
- Two methods courses: Demographic Techniques (required), plus one of the following: Event History Analysis, Applied Mathematical Demography, or Multilevel Models
- Two Demographic Processes Seminars: choose from fertility, family processes, health/mortality, immigration/migration
- Three demographic elective courses: these include a wide range of courses regularly taught, such as: Infectious Diseases in Human Populations, Social Change in Rural America, Ethnicity and Child Health, Biosocial Perspectives on the Family, Sociology and Demography of Poverty
- Professional Development Demography Colloquium: 1 credit at least twice during the course of the program (usually in years 1 and 3)

Those who will take a minor in the Dual Degree Program need to complete 15 credit hours rather than 24 for the major. A minimum of 3 credits is required in each of the following: disciplinary survey course; Demographic Techniques (Soc 573), seminar in demographic processes, seminars in population studies; enrollment in Demography 590 (1 credit)

Finally, students who participate in, and receive support from, the T32 training grant program in **Social Environments and Population Health will be required to take 3 of the following courses**. Many (though not all) of these courses are offered as electives in the Dual Degree Demography program. As part of the T32 training, **at least one of these three courses must be offered by a department outside of the student's home department**. Courses in Social Environments and Population Health include:

SOC/HPA, 526 Health Disparities

SOC 597E, Education and World Health

HDFS/SOC 537 Biosocial Perspectives on the Family	HDFS 521, Child Maltreatment
HDFS 527, Social Epidemiology	HDFS/NUTR 532, Childhood Obesity
HDFS/NUTR 533, Adult Obesity	HDFS 597, Gene-Environment Transactions
HPA 525, Health & Health Services Across Life Course	HPA 528, Health Data Analysis for Research
BBH 501, Biobehavioral Systems in Health	BBH 551, World Health Promotion
PHYSIO 510, Physiological Adaptations to Stress	SOC532, Global Health and Mortality

Students may petition for courses other than the above to be considered for fulfilling the T32 course requirements.

All Dual Degree Demography predoctoral students are required to write a Master's Thesis paper as a research learning experience and possible professional presentation paper and publication. This thesis typically is accomplished during the second year, and involves the student organizing a committee, preparing a proposal, gaining the committee's approval, conducting the research, and participating in an oral defense of the research. During the third year, students undergo final PhD candidacy evaluation to determine their preparedness for comprehensive exams and dissertation research. At the end of the third year or early in the fourth year when the student has typically completed all course work (and prepared a dissertation research proposal), the student completes a final written and oral comprehensive exam, which must include a section on demography. Following the successful completion of this exam, the student pursues the dissertation research and writes and defends the dissertation which includes a significant demographic component. The dissertation committee (minimum of four members) must be chaired or co-chaired by a faculty member who is on both the department and demography program faculties, include at least two members who are demography faculty, and must include one faculty member from outside the student's home department.

Evaluation

Evaluation of predoctoral trainees' performance and progress is essential to monitor and enhance the quality of the traineeship experience. Progress reports and updated educational and research plans from trainees and mentors are reviewed every six months by the Training Directors (John Iceland and Jenny Van Hook) and the Training Committee. Trainees and their mentors receive written feedback based on these reviews and the Training Directors meet with each trainee individually to discuss their progress. In addition, the Training Directors meet informally with trainees at other times during the semester to obtain feedback on their apprenticeship experiences and any assistance they need to advance their research and scholarly development. The Training Directors and Training Committee actively monitor key indicators of program success, including degree requirement progress for predoctoral trainees, the extent to which all trainees present papers at seminars and professional meetings, submit research papers for publication, and develop research proposals.