

Li-Wei **Chao** (M.D., Medicine, Chicago, 1991; Ph.D., Economics, Penn, 2002) is a Research Associate of the Population Studies Center and a Visiting Professor in the School of Medicine, University of Cape Town, South Africa. He was formerly Assistant Professor of Anesthesia & Critical Care Medicine and Assistant Professor of Health Care Systems.

**Scientific Accomplishment.** Chao's research examines the interrelationships between health and economics focusing on issues related to AIDS, Aging, and Africa. His paper in *Health Affairs* (with **Pauly**), based on 2 NIH/Fogarty awards (one to **Pauly**, PI, the other a K01, Chao, PI), investigates the connections between the health of the owner of a micro- and small enterprise and the business's growth, survival, or exit in Durban, South Africa. The results show that poor baseline health and declines in health over time are both significantly associated with subsequent business closure, and that these businesses were not replaced by new ones. This suggests that there could be an economic case for investing resources in the prevention and treatment of disease in the lower-income informal sector in developing countries. Prevention of poor health would help avoid the closure of businesses, and treatment would enable the sick to continue running their businesses. In another paper, in *AIDS and Behav* (with **Pauly**), it is found that South African teachers assume HIV prevalence and risk to be even higher than in the high-prevalence population in which they dwell; and that after training on HIV/AIDS, estimates of prevalence and perceived risk increase further still. In a paper in *Sex Transm Infect*, with former PSC trainee S. Bignami and current NICHD T32 (**Smith**, PI) trainee P. Anglewicz, the validity of self reports of HIV infection are assessed in Malawi. Subjects were reasonably good in assessing their own seroprevalence, but errors were almost universally in the direction of assuming infection when no such infection existed. Data were from the Malawi projects supported by 4 NICHD R01s (PIs **Watkins**, **Behrman**, and **Kohler**). With a dissertation on contraceptive choice, Chao has continued to study family planning and HIV prevention. Published in *AIDS and Behav*, his study finds that although women with HIV in rural Eastern Cape, South Africa, had significantly lower fertility desires, they were not more likely to use contraception than women without HIV with higher fertility desires. This pinpoints the lack of effective family planning as part of HIV prevention in South Africa. Chao's paper in *Medical Decision Making* (with **Soldo** and **Pagan**, funded by NIA P30 Supplement, **Soldo**, PI), using data from two experimental modules in the U.S. Health and Retirement Study, shows that although elderly and near elderly adults would recommend foregoing costly end-of-life treatment when the costs of the treatment would deplete savings, they would recommend opting for treatment, when costs are covered by Medicare even with low probability of survival. This study highlights the difficulties of making treatment decisions when probabilities of treatment success are in conflict with sources of financing.

**Present and Future.** Chao has several papers in progress based on his work in Africa. In a working paper in the PARC series (NIA P30, **Soldo**, PI), with **Pauly**, the study examines the determinants of time preference. Although theories in both evolutionary biology and economics predict that one's health and longevity should be associated with one's time preference, no prior empirical study has been done to support or refute such predictions. Detailed measures of health, subjective discount rate, and expected survival were collected on a sample of individuals in townships around Durban, South Africa. Preliminary findings show that both physical health and expectations of survival have a U-shaped relationship with the person's subjective discount rate. Because subjective discount rate is related to investment decisions, the study examines the impact of health on economic development, not from the commonly asserted productivity-gain argument, but from a much broader investment-for-the-future argument. This pilot study is the source of a pending NIA R21 application on which Chao is the PI. In another PARC series working paper (with **Kohler**, funded by NIA P30 Supplement, **Soldo**, PI), Chao examines motives underlying monetary transfers between spouses, kin, neighbors, and strangers, using behavioral economics games in rural Malawi. While social distance does impact transfers in these games, the roles of health and HIV and HIV-stigma are also examined. Chao is also the co-investigator on an NICHD funded R01 (**Pauly**, PI and **Behrman**, Co-Investigator) that follows from the published work on health and small businesses in South Africa, exploring the direct effect of illness on both employment and revenue growth and the indirect effect on the owner or manager's future orientedness.

**PSC and Research.** Chao is the PI of an NIH/Fogarty K01 (**Pauly**, Mentor; also **Behrman**, **Kohler**) and an Investigator on an NICHD R01 (**Kohler**, PI). He is the PI on 2 pending applications, and a co-investigator on an NICHD R01. Chao is the only Penn-based program associate without an academic appointment at Penn outside of the PSC. He took an extended leave of absence and subsequently resigned from his faculty appointment in the School of Medicine to do fulltime field research in population studies in Africa, under the auspices of the PSC.