Research Interests

My research interest seeks to contribute to our understanding of evolutionary processes underlying the genetic/genomic diversity at the population and species levels, and the species diversity at the community level. My work is generally involved in the studies in evolutionary biology, population and quantitative genetics, population and statistical genomics, evolutionary ecology, community ecology, and the application of the theories to natural resources management. Both theoretical (statistical) and empirical approaches are accentuated.

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Selected Publications

- **Hu, X.S.**, Yeh, F.C., He, F.L. 2007. Sex-ratio distortion driven by migration loads. ***Theoretical Population Biology*** (DOI: 10.1016/j.tpb.2007.08.002)
- **Hu, X.S.**, He, F.L., Hubbell, S.P. 2007 Species diversity in neutral local communities. ***The American Naturalist*** (DOI: 10.1086/522935)
- **Hu, X.S.** 2007 A general framework for marker-assisted selection. ***Theoretical Population Biology*** 71: 524-542.
- **Hu, X.S.**, Li, B.L. 2006 Additive genetic variation and the distribution of QTN effects among sites. ***Journal of Theoretical Biology*** 243: 76-85.
- **Hu, X.S.** 2006 Migration load in males and females. ***Theoretical Population Biology*** 70: 183-200.
- **Hu, X.S.**, He, F.L., Hubbell, S.P. 2006 Neutral theory in macroecology and population genetics. ***Oikos*** 113: 548-556.
- **Hu, X.S.**, He, F.L. 2006 Seed and pollen flow in expanding a species' range. ***Journal of Theoretical Biology*** 240: 662-672.
- Yeh, F.C., **Hu, X.S**. 2005 Population structure and migration from mainland to island populations in *Abies procera* Rehd. ***Genome*** 48: 461-473.

- **Hu, X.S.** 2005 Tension versus ecological zones in a two-locus system. ***Theoretical Population Biology*** 68: 119-131.

- **Hu, X.S.**, He, F.L. 2005 Background selection and population differentiation. ***Journal of Theoretical Biology*** 235: 207-219.

- He, F.L., **Hu, X.S.** 2005 Hubbell's fundamental species diversity and Simpson's index. ***Ecology Letters*** 8 : 386-390.

- **Hu, X. S.** 2004 Estimating the correlation of pairwise relatedness along chromosomes. ***Heredity*** 94: 338-346.

- **Hu, X.S.**, Goodwillie, C., Ritland, K. 2004 Joining linkage maps using a joint likelihood function. ***Theoretical and Applied Genetics*** 109:996-1004.

- **Hu, X.S.**, Zeng, W., Li, B.L. 2003 Impacts of one-way gene flow on genetic variance components in a natural population. ***Silvae Genetica*** 52 (1): 18-24.

- **Hu, X.S.**, Li, B.L. 2003 On migration load of seeds and pollen grains in a local population. ***Heredity*** 90: 162-168.

- **Hu, X.S.**, Li, B.L. 2002 Linking evolutionary quantitative genetics to the conservation of genetic resources in natural forest populations. ***Silvae Genetica*** 51(5-6): 177-183.

- **Hu, X.S.**, Li, B.L. 2002 Seed and pollen flow and cline discordance among genes with different modes of inheritance. ***Heredity*** 88: 212-217.

- **Hu, X.S.**, Li, B.L. 2001 Assessment of the ratio of pollen to seed flow in a cline for genetic variation in a quantitative trait. ***Heredity*** 87: 400-409.

- **Hu, X.S.**, Ennos, R. A. 2001 Population structure and genetic relationships of taxa in the *Larix gmelinii* complex in China. ***Forest Genetics*** 8: 225-232.

- Wu, R.L., **Hu, X.S.**, Han, Y.F. 2000 Molecular genetics and developmental physiology: implications for designing better forest crops. ***Critical Review in Plant Sciences*** 19: 377-393.

- **Hu, X.S.**, Ennos, R.A. 1999 Impacts of seed and pollen flow on population differentiation for plant genomes with three contrasting modes of inheritance. ***Genetics*** 152: 441-450.

- **Hu, X.S.**, Ennos, R.A., Wang, X.S. 1999 On the evolutionary relationships among three *Larix* in China: *L. gmelinii* (Rupr.) Rupr., *L. olgensis* Henry and *L. principis-rupprechtii* Mayr. ***Scientia Silvae Sinicae*** 35(3): 84-96.

- **Hu, X.S.**, Ennos, R.A. 1999 Scoring the mating systems of natural populations of three *Larix* taxa in China: *L. gmelinii* (Rupr.) Rupr., *L. olgensis* Henry and *L. principis-rupprechtii* Mayr. ***Scientia Silvae Sinicae*** 35(1): 21-31.

- **Hu, X.S.**, Ennos, R.A. 1997. On estimation of the ratio of pollen to seed flow among plant populations. ***Heredity*** 79: 541-552.