



Gregg E. Dinse, Sc.D.

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Education:

Sc.D., Biostatistics, 1981, Harvard University

M.S., Statistical Science, 1978, State University of New York at Buffalo

B.S., Mathematics, 1976, Bucknell University

Research Summary:

Most of my research focuses on developing improved methods for analyzing data from animal carcinogenicity studies. A few of my recent projects include:

1. Distinguishing treatment effects on the number of induced tumors from treatment effects on the tumor detection times in cancer chemoprevention experiments.
2. Incorporating explanatory variables, historical data, and expert judgements when analyzing tumor incidence in survival/sacrifice studies.
3. Developing simple yet flexible tumor incidence estimators for studies with limited sacrifice data and no information on cause of death or tumor lethality.
4. Making simultaneous inferences about tumors at multiple sites, while accounting for informative censoring and within-animal correlations among the tumor onset times.
5. Adapting order-restricted inference techniques to develop an improved alternative to a conventional survival-adjusted quantal response test.
6. Extending this new survival-adjusted quantal response test so that it incorporates data from historical control animals.
7. Using Bayesian methods to improve the efficiency of inferences about age-specific hazard rates subject to shape constraints.
8. Jointly modeling animal growth and tumor onset to separate the direct effect of treatment on tumor incidence from its indirect effect via changes in body weight.

Recent Publications:

Dunson, DB and Dinse, GE: Distinguishing effects on tumor multiplicity and growth rate in chemoprevention experiments. *Biometrics* 56: 1068-1075, 2000.

Dunson, DB and Dinse, GE: Bayesian incidence analysis of animal tumorigenicity data. Journal of the Royal Statistical Society, Series C 50: 125-141, 2001.

Parise, H, Dinse, GE, and Ryan, LM: Flexible estimates of tumor incidence for intermediately lethal tumors in a typical long-term animal bioassay. Journal of the Royal Statistical Society, Series C 50: 171-185, 2001.

Dunson, DB and Dinse, GE: Bayesian models for multivariate current status data with informative censoring. Biometrics 58: 79-88, 2002.

Peddada, SD, Dinse, GE, and Haseman, JK: A survival-adjusted quantal response test for comparing tumor incidence rates. Journal of the Royal Statistical Society, Series C (in press).

Peddada, SD, Dinse, GE, and Kissling, G: Use of historical controls in survival-adjusted quantal response tests for comparing tumor incidence rates (in preparation).

Dunson, DB and Dinse, GE: Bayesian analysis of constrained hazard functions (in preparation).

Dinse, GE and Dunson, DB: Causal inferences in carcinogenicity studies (in preparation).

Biostatistics Branch,
Environmental Diseases and Medicine Program,
Division of Intramural Research,
National Institute of Environmental Health Sciences,
National Institutes of Health,
Department of Health and Human Services.

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