

# Draft Plan for Introducing Bayesian Computing(IBC) Project

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## **ROLE OF IBC**

As a part of the Continuing Education (CE) project led by Tebeb, IBC will be integrated into CE's schedule. However, considering the workload of CE (Tebeb has a long list of topics you can not finish within 5 years! Kidding.), IBC could serve as an independent program in our department, which may facilitate further / deeper discussions of Bayesian methods in various areas such as hierarchical modeling, survival analysis, clinical trial design, factor analysis, spatial analysis, nonparametric/semiparametric regression, disease mapping, etc. The role of IBC is to give hands-on exposure for the audience and ourselves, from which they can consider Bayesian analysis as a practical option in their daily work.

## **ORGANIZATION OF IBC**

IBC consists of biostatisticians who are willing to learn and willing to distribute the state-of-the-art Bayesian computing technology to our department. The IBC members will meet on irregular basis upon demand. Each topic needs the members' *a priori* approval.

## **CONTRIBUTIONS TO IBC**

All IBC members are expected to contribute considerable work to IBC constantly including literature review, self learning of Bayesian theories, programming, etc. However, anyone who is willing to contribute to IBC is warmly welcome. During IBC talk series, some faculty members will be invited to talk on specific topics of their favorite.

## **METHODS OF DISTRIBUTION**

All the materials used in IBC discussions will be distributed to participants. The following three methods are listed.

1. Prepare necessary amount of paper copies to participants at each IBC talk;
2. Keep notes in a folder placed in the main office library;
3. Post materials online at the department CE webpage:

<http://biostat.mc.vanderbilt.edu/twiki/bin/view/Main/CE>

## OUTLINE OF EACH TOPIC

The reports of IBC series will be binded together as a booklet (I hope it is not too large.), from which readers can have immediate help on their models. So the organization of each IBC topic will be concise and directly to the point. As several IBC members agreed, the outline of each topic will cover these items:

1. A concrete example with data publicly available
2. Mathematical model formulae statisticians are familiar with
3. Brief Bayesian theory if necessary
4. Programs ready to run
5. Interpretation of modeling results
6. References for further investigation

The first topic, *Are you ready for Bayesian computing?*, will guide the audience to download necessary software, WinBUGS & OpenBUGS, and run a normal / normal hierarchical model, the easiest Bayesian model, on both WinBUGS and R. Then we will cover one Bayesian statistical model at each of the following talks.