Introduction
Using SAAM II Basic

SAAM II is a very powerful software tool for model development and testing using multicompartmental models. Mathematically, these models translate into systems of ordinary linear or non-linear differential equations. A flexible, graphical user interface (GUI) makes the power of SAAM II easily available to researchers with diverse backgrounds.

The purpose of the "Using SAAM II" tutorials is to amplify the information in the User Guide, and answer questions on how to use SAAM II. The philosophy behind the tutorials is to illustrate how different components of the SAAM II work using hands-on examples.

Using SAAM II Basic illustrates SAAM II's most commonly used features, features that almost everyone will use at some time during the modeling exercises. The purpose of these tutorials is explained below.

Using SAAM II Advanced tutorials illustrate SAAM II's more sophisticated features that are needed to model more complex experimental protocols than is usually the case.

Using SAAM II Basic

The first two **Using SAAM II Basic** tutorials, **Getting Started with Compartmental** and **Getting Started with Numerical**, are designed to get you started quickly using SAAM II Compartmental and SAAM II Numerical. If you follow these tutorials, in less than an hour, you will be able to use SAAM II on most of your modeling problems! The remaining tutorials will help you learn how to use the basic features of SAAM II.

- **Working with Data** deals primarily with how to enter data into you SAAM II study file, and how to assign weights to your data. Data can be entered directly, from a text document or from a spreadsheet. One of the most powerful features of SAAM II is how weights (uncertainties) can be assigned to your data. How this is done can affect the FIT of your model to your data. The different options are explained in this tutorial.

- **Using Experimental Inputs (Basic)** explains how you specify your experimental input into your compartmental model. SAAM II requires that you separate your model building mode from your experiment mode. This helps you in your keeping track of your experiment. The basic inputs are the bolus (single and multiple), constant infusion (single or multiple) and primed infusion.

- **Using Parameters (Basic)** explains the different features of the Parameters dialog box. It also explains how to input different values for your parameters, and how to hand-fit your model to your data.

- **Using the Sample Tool** explains how the Sample Tool is used to recreate on hour model how you collected your experimental samples. Use of the Sample Tool is essential as it provides the link between the differential equations represented by your compartmental model and your data. That is, it helps you keep the units of your data consistent with your model solution. This linkage can also be managed in the Data window as you have the option of changing units in this window also.

- **Using Plots** explains some of the plotting capabilities in SAAM II. Line plots is a method by which you can connect sequential data by a straight line; it can help in providing insights into the information content of your data (e.g. how many compartmental may be needed in your model). It also show you have to change plot variables, the scale of your plot and the label you can associate with your plot. SAAM II's plotting capabilities are not as sophisticated as pure plotting packages. If you use the Tables option (see another tutorial), you can output the results to, for example, a spreadsheet which can be post-processed by another software tool.

- **Report writing** explains how you can keep track of your modeling session. There are two ways. One is to use the Notes window. This window, which creates a text file, can be used to cut and paste results from your modeling work into this file. The other option is to use SAAM II's ability to automatically create text files; information is automatically written into these files following a successful SOLVE or FIT.

- **Using Tables** explains how to create tabular output following a successful SOLVE or FIT which can be exported to other software tools.

