

# Statistical Analysis of Method Comparison Studies

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[www.biostat.ku.dk/~bxc/MethComp/Cph.2011](http://www.biostat.ku.dk/~bxc/MethComp/Cph.2011)

## 1 Program

The program will be structured with one hour lecture and 2 hours practicals (approx.) every morning and afternoon and 1 hours lunch break; so the three days are structured as:

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| 09:00 – 10:00 | Lecture 1    |
| 10:00 – 10:30 | Morning Tea  |
| 10:30 – 12:00 | Practical 1  |
| 12:00 – 13:00 | Lunch        |
| 13:00 – 14:00 | Lecture 2    |
| 14:00 – 14:30 | Coffee break |
| 14:30 – 16:00 | Practical 2  |

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### Tueseday 8 February 2011

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| 09:15 – 10:30 | <b>Lecture 1:</b><br>Welcome and introduction.<br>Simple comparisons of measurement methods.<br>Correlation.<br>Introduction to computing.  |
| 10:30 – 11:00 | <b>Morning Tea</b>  |
| 11:00 – 12:00 | <b>Practical 1:</b><br>Limits of agreement, Bland-Altman-plots: <ul style="list-style-type: none"><li>• Milk</li><li>• Plasma volume.</li></ul>   |
| 12:00 – 13:00 | <b>Lunch</b>  |
| 13:00 – 14:00 | <b>Lecture 2:</b><br>Setting up (your own) data. <code>Meth</code> objects.<br>Non-constant difference between methods<br>Designs with replicate measurements — allocation of sources of variation. |
| 14:00 – 14:30 | Coffee break  |
| 14:00 – 16:00 | <b>Practical 2:</b><br>Data with replicate measurements by each method: <ul style="list-style-type: none"><li>• Fat.</li><li>• Systolic blood pressure.</li><li>• HbA<sub>1c</sub></li></ul>        |

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### Wednesday 9 February 2011

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| 09:00 – 09:15 | Recap of Tuesday.  |
| 09:15 – 10:15 | <b>Lecture 3:</b><br>A general model for method comparisons.<br>Repeatability and reproducibility  |
| 10:15 – 10:45 | <b>Morning Tea</b>   |
| 10:45 – 12:00 | <b>Practical 3:</b> <ul style="list-style-type: none"><li>• Oximetry data.</li></ul>   |
| 12:00 – 13:00 | <b>Lunch</b>   |
| 13:00 – 14:00 | <b>Lecture 4:</b><br>Linear relationship between methods.<br>Converting between methods.<br>Variance components.<br>Transformations.     |
| 14:00 – 14:30 | <b>Afternoon Tea</b>   |
| 14:30 – 16:00 | <b>Practical 4:</b> <ul style="list-style-type: none"><li>• Oximetry data — transformation.</li><li>• Analyzing your own data.</li></ul> |

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### Thursday 10 February 2011

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| 09:00 – 09:15 | Recap of Wednesday.  |
| 09:15 – 10:00 | <b>Lecture 5:</b><br>Implementation in BUGS: Using the <code>MCmcmc</code> function.   |
| 10:00 – 10:30 | <b>Morning Tea</b>   |
| 10:30 – 12:00 | <b>Practical 5:</b> <ul style="list-style-type: none"><li>• SBP-data: Three methods with replicate measurements.</li></ul>                       |
| 12:00 – 13:00 | <b>Lunch</b>   |
| 13:00 – 14:00 | <b>Lecture 6:</b><br>More elaborate designs, variance component models.<br>Summary and overview.   |
| 14:00 – 14:30 | <b>Afternoon Tea</b>   |
| 14:30 – 16:00 | <b>Practical 6:</b> <ul style="list-style-type: none"><li>• Recap of practicals; tidying your code.</li><li>• Analysing your own data.</li></ul> |

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