## Wednesday 8 October

**15.30 -16.00  Registration and welcome**
**16.00-16.30** Diagnosis and prognosis. Learning clinical reasoning. Breakout-sessions. (D. Conte- C. Gluud)
**16.30-17.00** Diagnosis: an operative definition. What is diagnosis? Nosography and clinical decision. Clinical reasoning. (A. Colli)
**17.00-17.45** Facing C. Difficile. (D. Conte)
**17.45-18.15** Prognosis: diagnosing the future. The temporal dimension of diagnosis. Predictive models. (G. D'Amico)
**18.15-18.45** Discussion (PG. Duca)
**18.45-19.15** The Cochrane Hepato-Biliary Group
 (D. Nikolova )

## Thursday 9 October

### Assessment of diagnostic accuracy

**9.00-9.15** The cross sectional design study.  Population and pre-test. Probability (participants). Index test target condition (disease) reference standard. (M. Fraquelli)

**9.15-9.45  Small groups work**. To define the participants, the index test, the target condition, the reference standard, and the research/clinical question.

**9.45-10.15  Feedback from the small groups**.
Interactive discussion: the main objectives are defining the question that the diagnostic studies aim to answer and discussing the assumption that the reference standard test is able to exactly identify the target disease,  i.e., the problem of 'imperfect' reference standard (M. Fraquelli)

**10.15-10.40** Definition of diagnostic accuracy. The two by two tables. True and false results. (G. Casazza)
**10.40-11.00   Coffee break**

**11.00-11.20** Definition of sensitivity (true positive ratio). (G. Filippini)
**11.20-11.50 Small groups work.** To retrieve data for the 2x2 tables and sensitivity estimates from published papers. (A. Colli)
**11.50-13.00  Feedback from the small group**.
Interactive discussion: the retrieved estimates of

sensitivity; variation of severity of the target condition; diagnostic yield; detection rate. (A. Colli)
**13.00-14.30   Lunch**
**14.20-14.40** Definition of specificity (true negative ratio). (G. D'Amico)
**14.40-15.00  Small groups work**
To retrieve data for 2x2 tables and the specificity estimate from published papers.
**15.00-15.30  Feedback from the small groups**.
Interactive discussion: the retrieved estimates of specifi - city; variation of non-affected participants. (G. D'Amico)
**15.30-16.00** Likelihood ratios (positive and negative). (G. Casazza)
**16.00-16.30  Small groups work**. To retrieve the likelihood ratio estimates from the 2x2 tables from published papers.
**16.30-17.00  Feedback from the small groups**.
Interactive discussion: the retrieved estimates of positive and likelihood ratios (LR). (G. Filippini).
**17.00-17.30** Characteristic of the index test: repeatability and reproducibility, sensitivity/specificity, global diagnostic accuracy and diagnostic odds ratio.(PG. Duca)
**17.30-18.00  Lessons learned**. (C. Gluud)

## Friday 10 October

### The Bayesian rule; pre-test and post-test probability; cut-off value; the ROC-curve

**8.45-9.00** Introduction.
**9.00-9.30  Small groups work** . What do you think if the example test is positive o negative? What is the clinical meaning of sensitivity/specificity or LR?
**9.30-10.00 Feedback from the small groups**. Interactive discussion. (PG. Duca)
**10.00-10.30** What do you talk about when you talk about probabilities? The Bayesian rule. (PG. Duca)
**10.30-11.00   Coffee break**
**11.00-11.30**  The pre- test and post-test probability (the positive and negative predictive values). (A. Colli)
**11.30-12.00  Small groups work**.  To estimate pre-test and post-test probability. When the (post-test) probability is enough to decide?

**12.00-13.00  Feedback from the small groups**.
Interactive discussion. Spectrum bias/spectrum variation; the subjectivity of estimates; the assumption of indepen- dence of sensitivity/specificity from the prevalence of the target condition; the decisional thresholds. (M. Fraquelli)
**13.00-14.30   Lunch**
**14.30-15.00** Continuous index test results: positivity and negativity criteria. Cut- off value. (M. Fraquelli)
**15.00-15.30  Small groups work**. To retrieve the defined cut-offs.
**15.30-16.00  Feedback from the small groups**.
Interactive discussion. Explicit and implicit cut-offs. Multiple cut-offs. To rule in, to rule out. (G. Casazza)
**16.00-16.30** The receiver operating characteristic (ROC) curve. (G. Casazza)
**16.30-17.00  Coffee break**
**17.00-17.30**  The area under the curve (AUC),  the comparison of test accuracy. (PG. Duca)

**17.30-18.00  Lessons learned**.  (C. Gluud)

**20.30  Farewell dinner**

## Saturday 11 October

### The architecture of diagnostic  studies and the systematic reviews and meta-analysis

**9.00-9.40** The architecture of diagnostic studies. (M. Fraquelli)
**9.40-10.15** The architecture of prognostic studies: differences and similarities.(G. D'Amico - G. Filippini)
**10.15-10.30  Discussion** (C. Gluud)
**10.30-10.50  Coffee break**
**10.50-11.40** Systematic reviews and meta-analysis of diagnostic studies. (G. Casazza - D. Nikolova - C. Gluud)
**11.40-13.00** Examination of the participants.
Tests: 11.40-12.40. Tests evaluations: 12.40-13.00.
**13.00-13.30** Conclusions and perspectives. Course evaluation. (D. Conte – C. Gluud)

**13.30-14.30  Lunch**

## Organizing secretary and course information:

*Sara **Comparetti**,*
Centro "Thomas C. Chalmers and Alessandro Liberati", Dipartimento di Fisiopatologia Medico-Chirurgica e dei Trapianti, Università degli Studi di Milano, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, via F. Sforza, 35 20122 Milano, Italy E-mail chalmers@unimi.it

**Early application date**: 30 May 2014
**Late application date:** 20 September 2014

All sessions will be run in English. Selection will be based on the applicant's curriculum vitae. The course cannot be run if less than 20 people sign up by May 30. Applicants will receive a further notice about it shortly after the early registration deadline, May 30.

**Payment** (by bank transfer)
Early registration fee:
**750,00 € (until 30 May 2014)**
Late registration fee:
**850,00 € (after 20 Sept 2014)**
**Please indicate "Centro Chalmers – EBM Course" as the reason for the transfer**.

Make drafts payable to:
Università degli Studi di Milano, Banca Intesa BCI, Via Verdi, 8 Milan, Italy C/C 4639/71, ABI 03069, CAB 09400, Codice CIN G, IBAN IT97 G030 6909 4000 0000 0463 971, Swift Code BCITIT33100 If payment is made for more than one person, or by a company, or

institution, the names of the applicants must be indicated.
The workshop fee covers tuition, refreshments, meals, and accommodation (double rooms).
Copy of the bank transfer must be received by **20 September 2014** to ensure participation.

## Faculty

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*Agostino **Colli*** Ospedale A. Manzoni, Lecco, Italy
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# DIAGNOSIS AND PROGNOSIS CLINICAL AND RESEARCH PROBLEMS
**Basic Residential Course**

October 8-11, 2014 - Palazzo Feltrinelli Gargnano, Lago di Garda, Italy

Centro Interuniversitario
**"THOMAS C. CHALMERS and ALESSANDRO LIBERATI"**, Italy

**Università degli Studi di Milano**
Facoltà di Medicina e Chirurgia
Cattedra di Gastroenterologia
**Fondazione IRCCS "Ca' Granda - Ospedale Maggiore Policlinico"**
U.O.C. di Gastroenterologia ed Endoscopia
Milano - Italy

**The Cochrane Multiple Sclerosis Group**
Fondazione Istituto Nazionale Neurologico
Besta – Milano - Italy

**The Copenhagen Trial Unit (CTU)**,
Centre for Clinical Intervention Research,
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