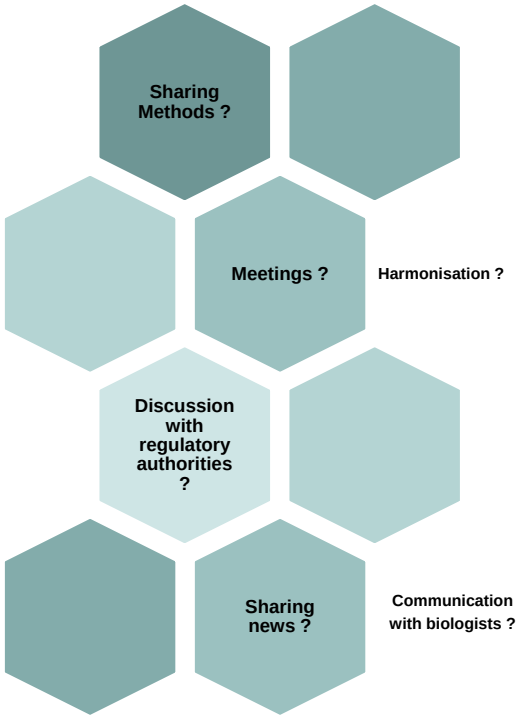
DISCUSSION FORUM
Non-clinical statistical groups in Europe
Need for a network ?



- Cartography of the non-clinical statistical groups in Europe

Let us know if you are aware of ongoing projects, networks, working parties, statistician leaders, mailing list etc …

- Is there a need for a non-clinical network ?

Give us your expectations during the NCS conference…!

C. Hessler , L. Maïofiss, K. Florin , NCS conference - Postsdam 2012

The approach

- Find out non-clinical activity within "European Federation of Statisticians in the Pharmaceutical Industry"

- Contact of the 10 European groups' representatives to get some non-clinical groups references

Country	Group	Statisticians *(approx)*
Belgium	SBS/BVS	144
Denmark	DSBS	135
Finland	SSL	50
France	SFdS	569
Germany	APF	300
Italy	BIAS	100
Netherlands	PSDM	100
Sweden	FMS	220
Switzerland	BBS	100
United Kingdom	PSI	1150

➔ Within PSI: **SIG**
Specific **I**nterest **G**roups

- Send the following form to get some information

General form to get information from groups

- General presentation
- Organizational aspects
- Objectives
  - Work in common?
  - External / internal communication?
- Main topics
  - Previous, ongoing, considered
- Difficulties and positive aspects
- Expectations from an inter groups collaboration

Results: the responses

- SFdS (France)
  - BPS (Good Statistical Pratices in Preclinical field)
  - Statistics in Genomics
- PSI (UK)
  - Toxicology SIG
  - Biomarkers SIG
- FMS (Sweden)
  - *« There's a handful of statisticians at AstraZeneca Sweden who work in pharma non-clinical. Very few, if any, others will be working mainly in this field «*

BPS “Good statistical practices in pre-clinical field “

within the French Statistical Society SFdS (EFSPI)

- General presentation
  - French group (Paris, Lyon, Toulouse, Montpellier)
  - Exists for nearly 20 years
  - Constituted by 4-15 statisticians from the pharmaceutical industry or CROs working in the preclinical field , working mainly in pharmacology
  - Contact : Lisa Maïofiss (lisa.maiofiss@fr.netgrs.com)
- Organizational aspects
  - One day face to face meeting every 2 months (≅ 5-6 per year)
- Main topics
  - Previous: interim analyses, mixed models and repeated measurements with associated sample size issues
  - Ongoing: potential interest of more heterogeneous experimental designs to improve reproducibility of experiments (translational aspects)
  - Planned: bayesian methods ?…

- External communication
  - Publications

- ‘How much for a star’ SFdS - Groupe Biopharmacie et Santé – ‘Good Preclinical Statistical Practices’ working party, Trends in pharmacological sciences (2002) 23, 5, 221-225,
- ’On the efficiency of interim analyses applied to non clinical studies’ SFdS - Groupe Biopharmacie et Santé - "Good Preclinical Statistical Practices" working party”, DIJ (2007), 41, 4, 517-526

  - Presentations

- ’On the efficiency of interim analyses applied to non clinical studies’ DIA International workshop on Statistical methodology in non-clinical R&D (Dublin, 2004)
- ‘Mixed models using the SAS® PROC MIXED procedure:A simulation based approach to assess sample size and resolve a daily biostatistician’s dilemma for preclinical trials…’ NCS (Leuven, 2008)
- ‘Towards more heterogeneity in non-clinical field’ – B&S SFdS Scientific day (Paris, nov 2011)
- ‘More heterogeneous … more reproducible ? When statisticians want more variability !) AFSTAL (laboratory animal congress) (Marseille, june 2012)

  - within companies’ sensitization (sanofi, servier, sanofi pasteur, CIT …)

Toxicology Special Interest Group (SIG)

within Statisticians in the Pharmaceutical Industry (PSI) (EFSPI)

- General presentation
  - Locations all over Europe (mainly UK).
  - 43 affiliates (41 from industry, 2 from academia) since 2007
  - Activity : All areas of Toxicology
  - Contact : Jim Saul (Jim.Saul@covance.com)
- Organizational aspects
  - Steering Team TC's every 2 months, Face-to-face workshops every 18 months.
- Main topics
  - Previous: Tumor Analysis, Reproductive Toxicology, Micronucleus, Analysis of Organ Weights, Telemetry Analysis in Safety Pharmacology, Comet Assay in Genetic Toxicology, Behavioral/Censored Data, Pre-Clinical to Clinical Translation, Statistics in Pathology
  - Ongoing: none
  - Planned: Use of covariates, Ethovision, Cardiomyocytes, Micro sampling, Combining safety pharmacology endpoints into Tox studies, Historical Control Data
- External communication
  - Occasional external presentations, mainly PSI and NCS. Three approved publications so far about best statistical practice in Toxicology

Statistics in genomics

within the French Statistical Society SFdS (EFSPI)

- General presentation
  - French group
  - 30 affiliates (50% from industry, 50% from academia) since 2009
  - Activity : relative to Omics (essentially genomics, transcriptomics)
  - Contact : Laura Xuereb (laura.xuereb@fr.netgrs.com)
- Organizational aspects
  - 1 face-to-face meeting per year in Paris
- Main topics
  - Previous: Normalization of expression data, experimental designs, memory concerns for huge data sets, supervised methods in omics, integration of several data sources (genomics, transcriptomics, proteomics , …)
  - Ongoing: none
  - Considered: Link between transcriptomic and clinical data (survival …)

Biomarkers Special Interest Group (SIG)

within Statisticians in the Pharmaceutical Industry (PSI/EFSPI)

- General presentation
  - Locations all over Europe (mainly UK) since 2007.
  - ~150 affiliates
  - Activity : statistical issues in the development and application of biomarkers (including “omics”), both from a clinical and non-clinical perspective.
  - Contact : Martin Jenkins (Martin.Jenkins@astrazeneca.com)
- Organizational aspects
  - Organising committee of 10 have monthly TCs. Larger community involved for particular activities or to attend the face to face meetings.
  - One/two day meeting a year (particular scientific topic)
  - Mailing list and Information (in the Resources section on the psiweb site)
- External communication
  - PSI conference , parallel sessions (2009, 2011)
  - ‘A statistician’s perspective on biomarkers in drug development’ Jenkins M. et al, on behalf of the PSI Biomarkers SIG -Pharmaceutical statistics (2011) (DOI:10.1002/pst.532)

- Main topics
  - Previous: Review paper of statistical issues in biomarker-based drug development.
    - Translation of biomarkers from pre-clinical in-vivo and in-vitro models
    - Early development use of clinical biomarkers
    - The use of ‘omics (genomics, proteomics, metabonomics etc) as a means for identifying potential biomarkers
    - Biomarkers in full late development inc personalised medicine approaches
    - Surrogate endpoints and the validation and "approval" of biomarkers
    - Practical case studies
    - Biomarker-based clinical trial designs;
    - High-dimensional, multivariate and composite biomarkers;
  - Ongoing: Meeting in October on biomarker validation in various scenarios
  - Planned: Considering options for a training course

Objectives

BPS | **Toxicology** | **Genomics** | **Biomarkers**

Share know how to solve specific issues

Develop knowledge and opinions

Exchange information (conferences, publications, new methods, etc …)

Challenge new methods in non clinical field

Harmonize methods

Anticipate new **regulatory** issues

Sensitize biologists to statistical issues and needs

Provide a **forum for discussion**

Difficulties and positive impact

BPS

- Positive impact:

Considerable progress in establishing best statistical practice

- Main concern:

Need for new motivated members !

Toxicology

- Positive impact:

- Main concern:

A possible lack of future hot topics

Genomics

- Positive impact:

Succeed in sharing experience

- Main concern:

Difficulty to create a core of people working on the same issues and platforms.

↳ Theme meetings

Different level of experience

Rapid evolution of the field.

Biomarkers

- Positive impact:

Wide participation within statistical community to raise awareness, share experiences and suggest advice

- Main concern:

Rely on volunteers having the time available to contribute …

Expectations from an european network

BPS	Toxicology	Genomics	Biomarkers
Compensate a lack of non-clinical stat visibility and/or recognition (with regulatory authorities and biologists)			**Increase the representation of non-clinical statisticians** in the group and aid cross-development-stage discussions.
Share expertise according to topics already treated	**No obvious candidate topics** for sharing expertise between other groups.	**Share expertise** adapted to each specific platform	
Share information about non-clinical stats		**Suggest new subjects**	**Share experiences** with a wider audience on suitable pre-clinical biomarker topics, best practice…
Find new members	Decrease of non-clinical stat in France	**Find new members**	

Representatives at the NCS conference

- BPS: Catherine Hessler (sanofi pasteur), Lisa Maïofiss (Servier), Lionel Cousseins & Karine Florin (Sanofi)
- Toxicology SIG: Mike Aylott (GSK), Luc Esserméant (Sanofi)
- Biomarkers SIG: David Wille (GSK)
- Statistics in genomic: Lisa Maïofiss (Servier)

- Others?