



Innovative Medicines Initiative

IMI Info Session: funding opportunities with the Innovative Medicines Initiative
Satellite event of MIHealth Forum

Research for pain relief – the Europain project

Experience of Neuroscience Technologies

Friday 28th, June 2013

Jordi Serra

CSO

Neuroscience Technologies

Barcelona - London



Quantifying Pain

We are on *pain!*



- Chronic pain: 1 out of 5 Europeans suffers from it
- We suffer different types of pain: acute pain, arthritis pain, post-surgical pain, neuropathic pain....
- Neuropathic pain: 5% of the population
- Low quality of life and high burden on patients and society
- Huge unmet need: only 1/3 of chronic pain patients obtain adequate pain relief



Why is pain so important?



Who wants to suffer?

NOBODY !

EUROPAIN aims at understanding pain mechanisms and improving the development of new treatments for chronic pain.



So many patients So many etiologies...



Diabetic neuropathy



Postherpetic neuralgia

So complicated!



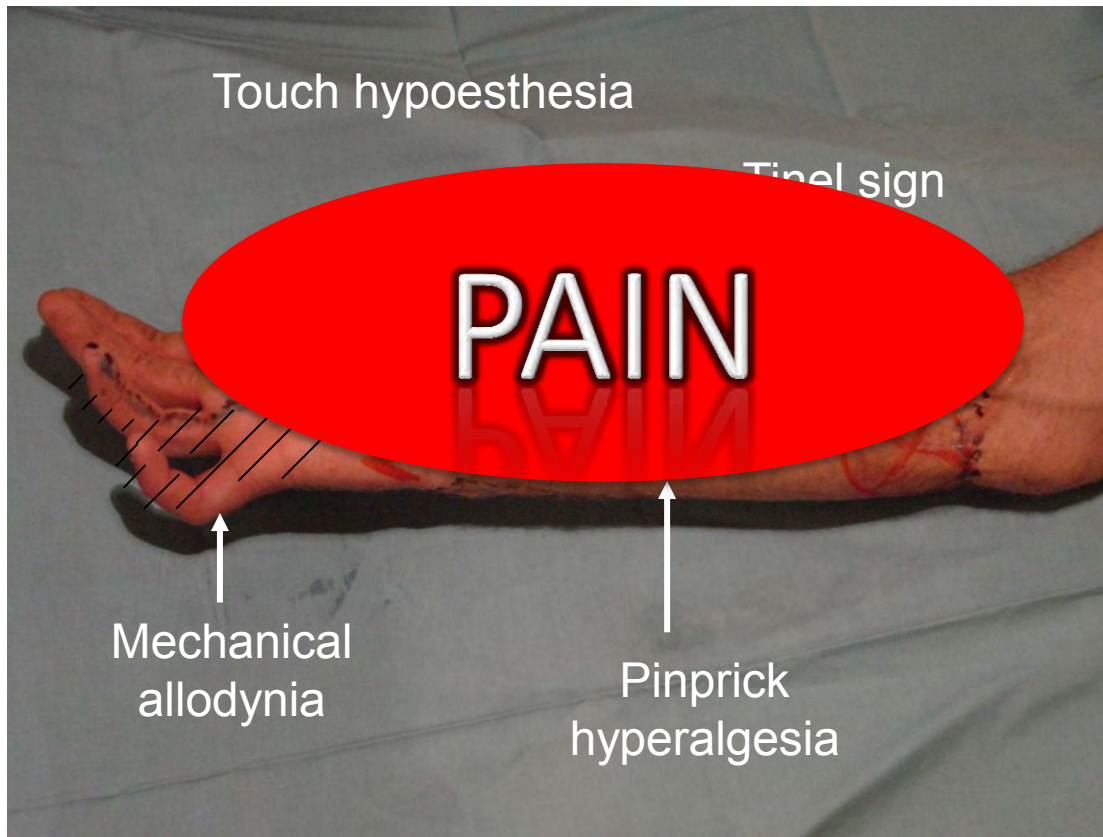
Focal nerve injury



Radiculopathy



Neuropathic pain: so many symptoms, so many mechanisms!



Key research challenges



Why we do not have yet a really **GOOD** drug for
Neuropathic Pain?

- No predictive biomarkers for spontaneous pain
- Limited knowledge of *critical* pain mechanisms
- Huge attrition rate during clinical development



EFPIA

- AstraZeneca
- BoehringerIngelheimGmbH
- Pfizer Limited
- Eli Lilly and Company Ltd
- Esteve S.A.
- UCB Pharma
- Sanofi-Aventis R&D
- Grünenthal GmbH
- Astellas
- AbbVie

Financing

- IMI funding: 6 MEUR
- EFPIA in kind contribution: 12.5 M €
- Total project cost: 18.5 M €

Academia

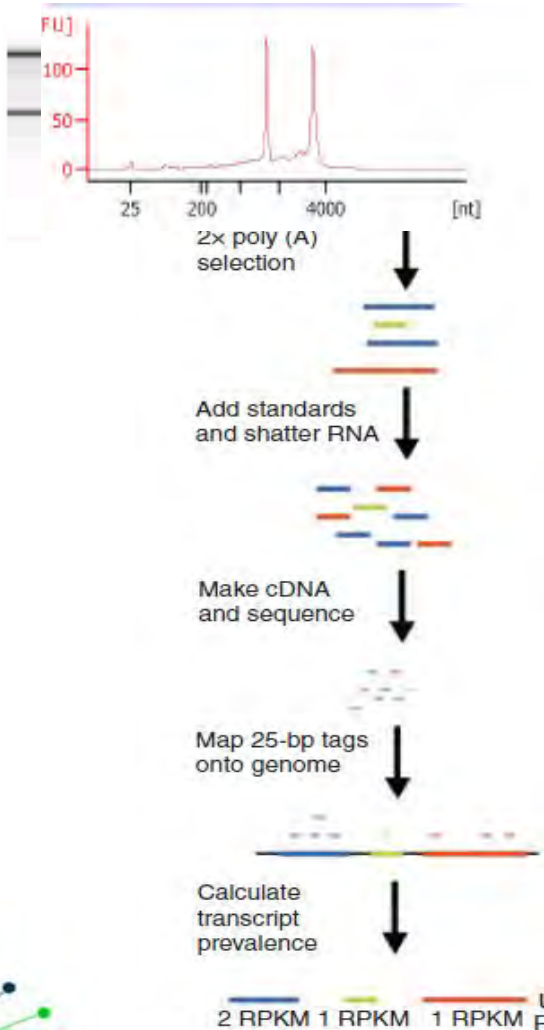
- King's College London
- University College London
- University of Oxford
- Imperial College London
- Christian-Albrechts-Universität zu Kiel
- Ruprecht-Karls Universität Heidelberg
- Technische Universität München
- BG Universitätsklinikum Bergmannsheil GmbH
- Klinikum der Johann Wolfgang Goethe-Universität
- Aarhus University Hospital
- Region Hovedstaden
- University of Southern Denmark

SME

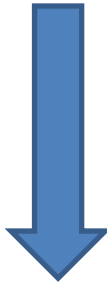
- Neurosciences Technologies S.L.



Headline achievements: Genomics, proteomics



INPUT:
Total RNA

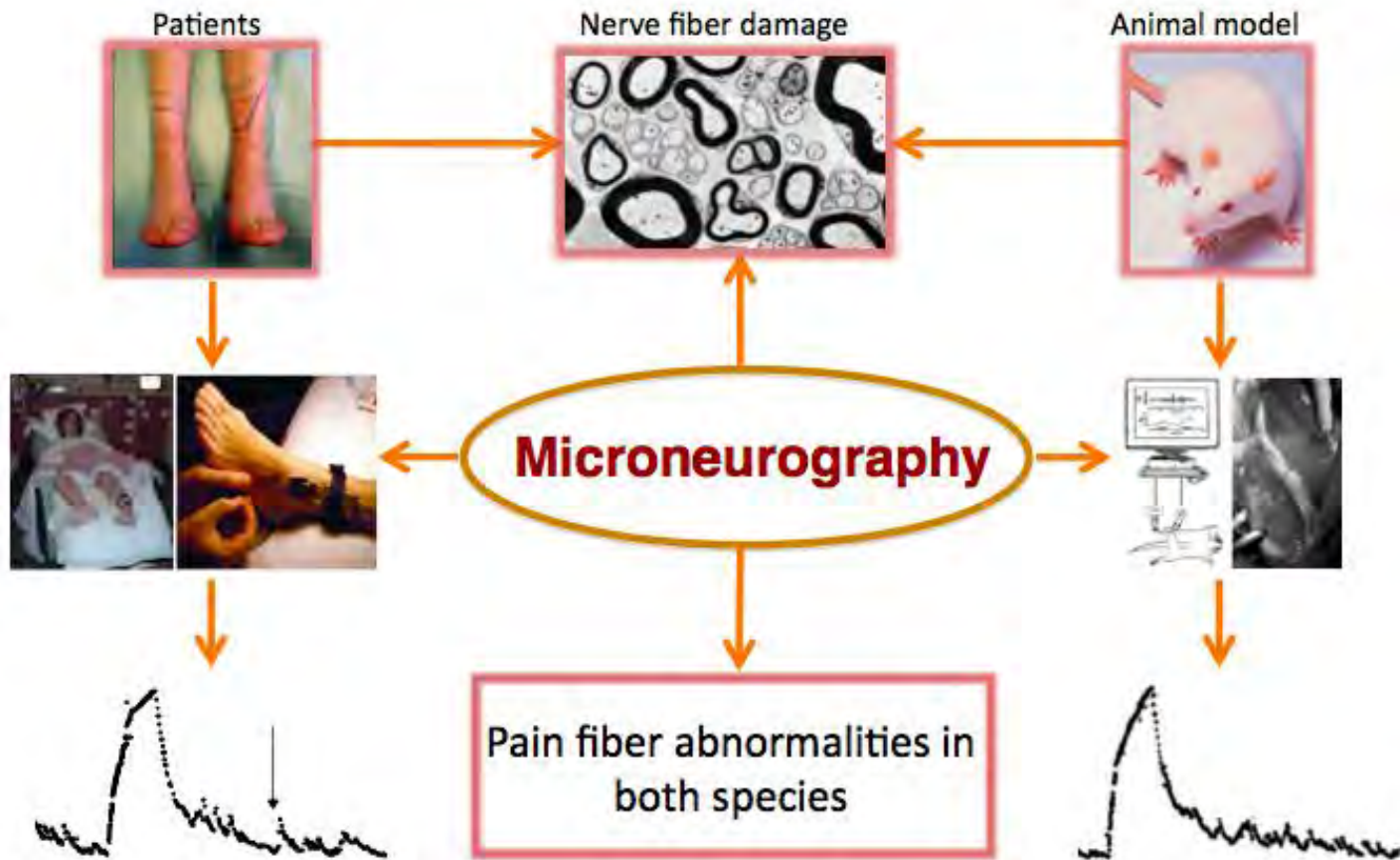


OUTPUT

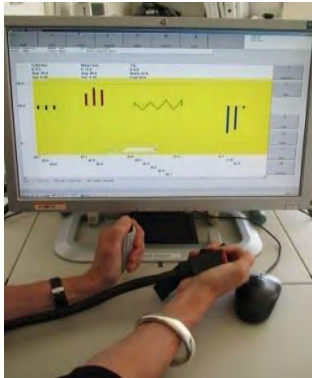
- ABSOLUTE QUANTIFICATION OF GENE EXPRESSION
- EXON AND SPLICE JUNCTION READS
- NOVEL EXONS/SPLICE VARIANTS
- NOVEL GENES



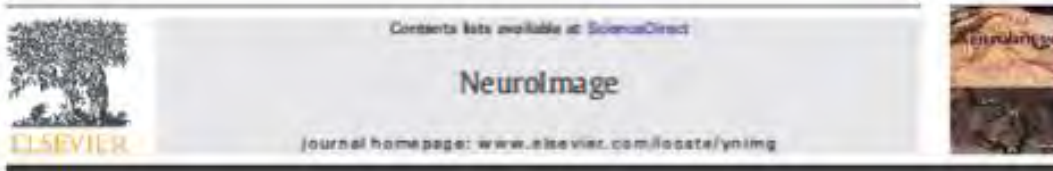
Headline achievements: Electrophysiology



Headline achievements: Patient profiling

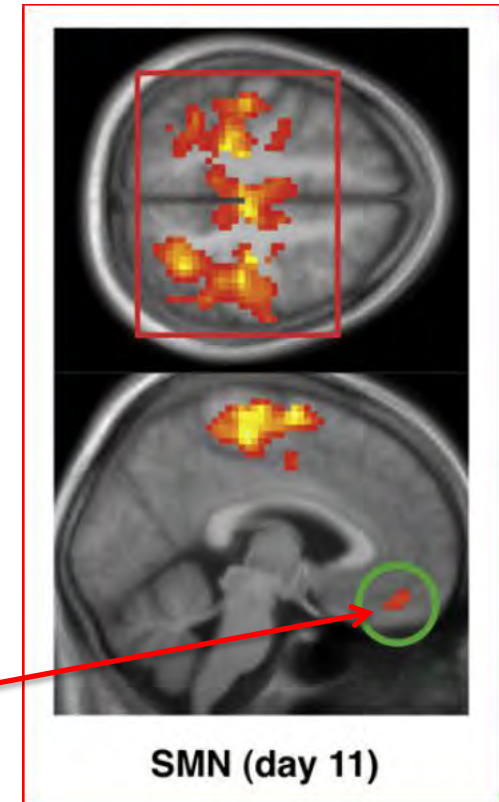
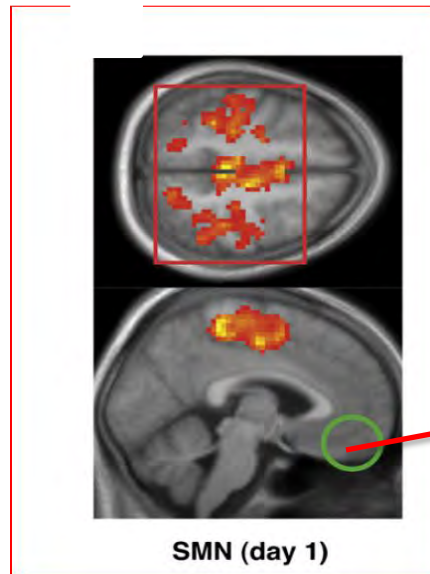


Headline achievements: Neuroimaging



Repeated pain induces adaptations of intrinsic brain activity to reflect past and predict future pain

Valentin Riedl^{a,c,*}, Michael Valet^a, Andreas Wöller^b, Christian Sorg^b, Dominik Vogel^a, Till Sprenger^d, Henning Boecker^e, Afra M. Wohlschläger^f, Thomas R. Tölle^a



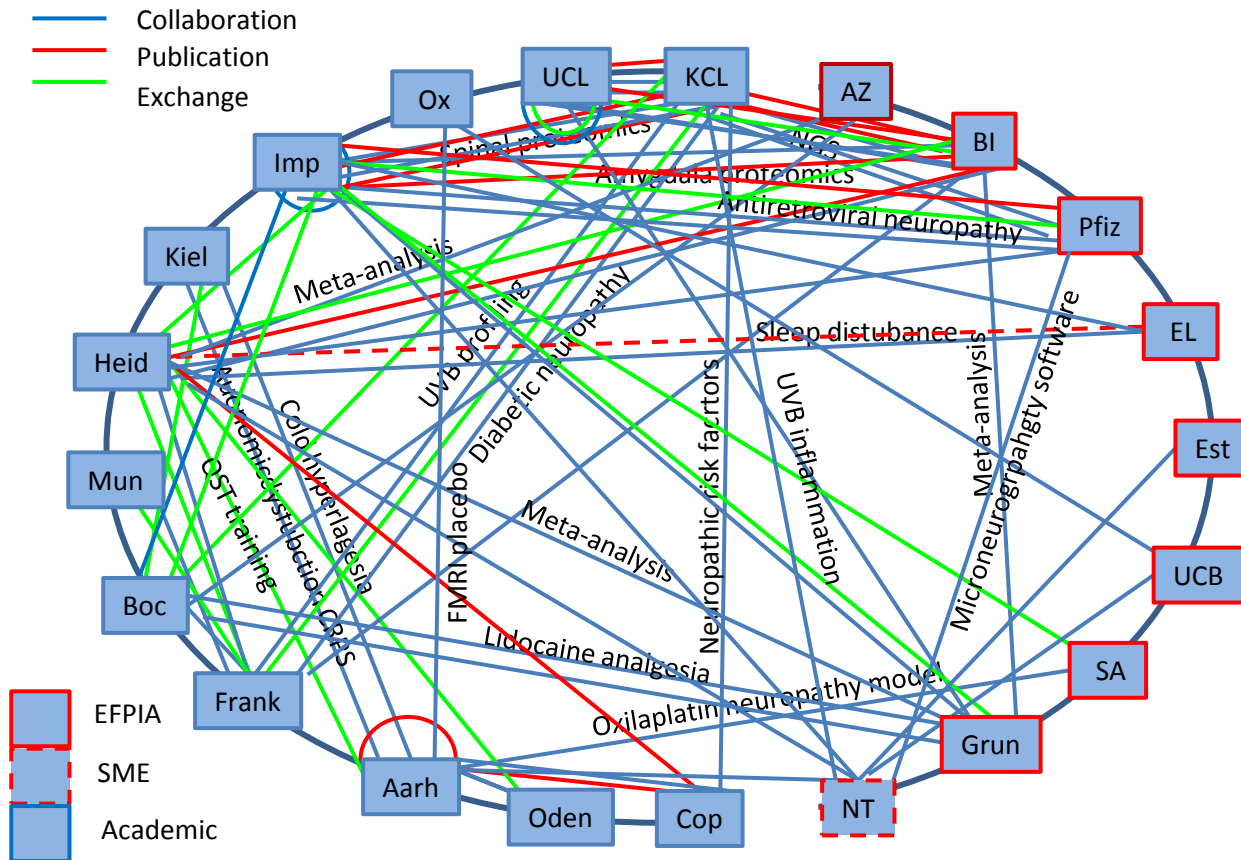
Headline achievements: Delivering added value



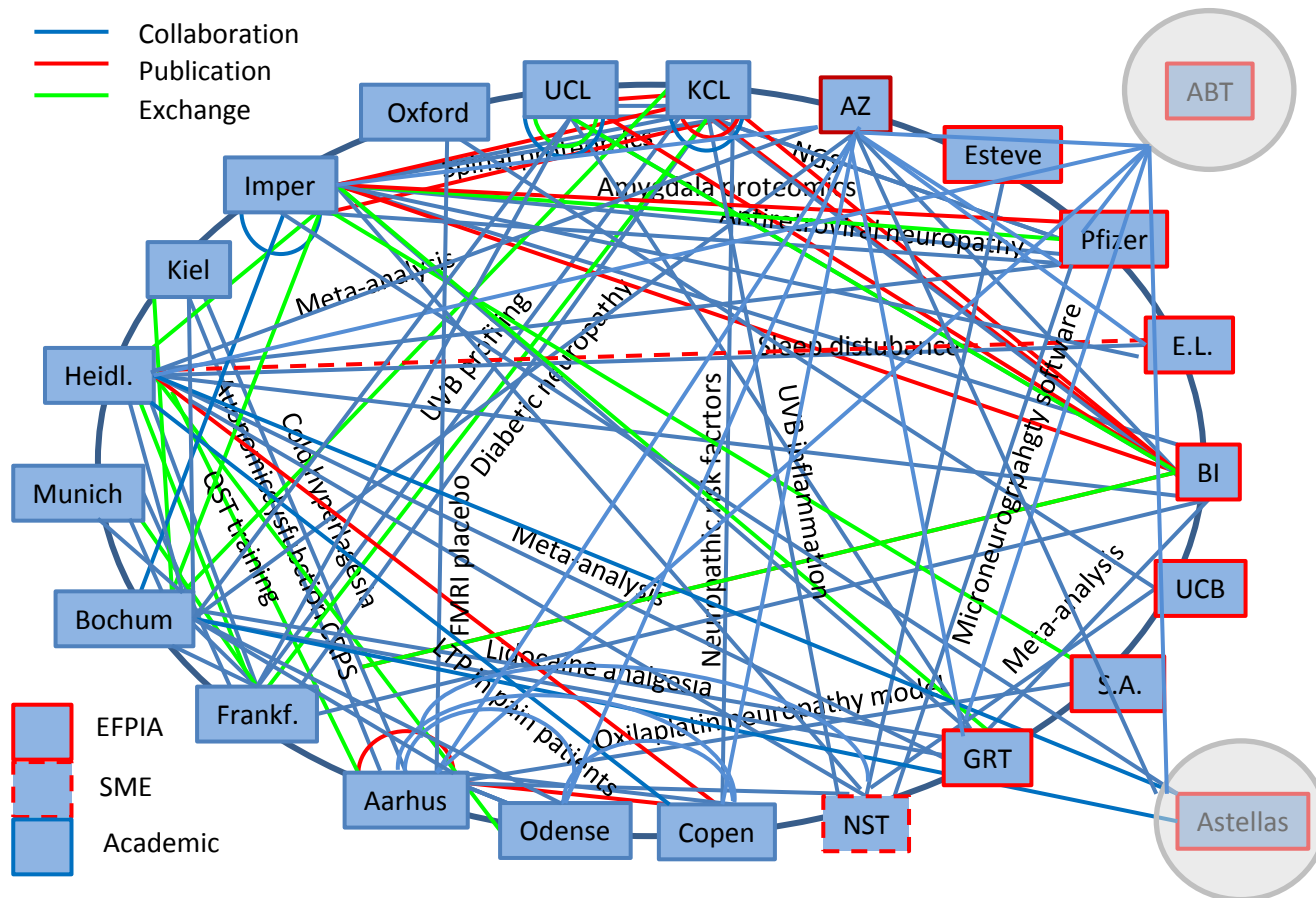
- We have done intensive research & published extensively (>120)
- We are having international consensus meetings: for ex., how to conduct preclinical trials
- We are conducting clinical trials to improve patient stratification
- We are developing tools to predict which patients will respond to treatments
- We are understanding placebo effect to reduce clinical trial failures
- We have initiated EMA interactions to frame regulatory landscape



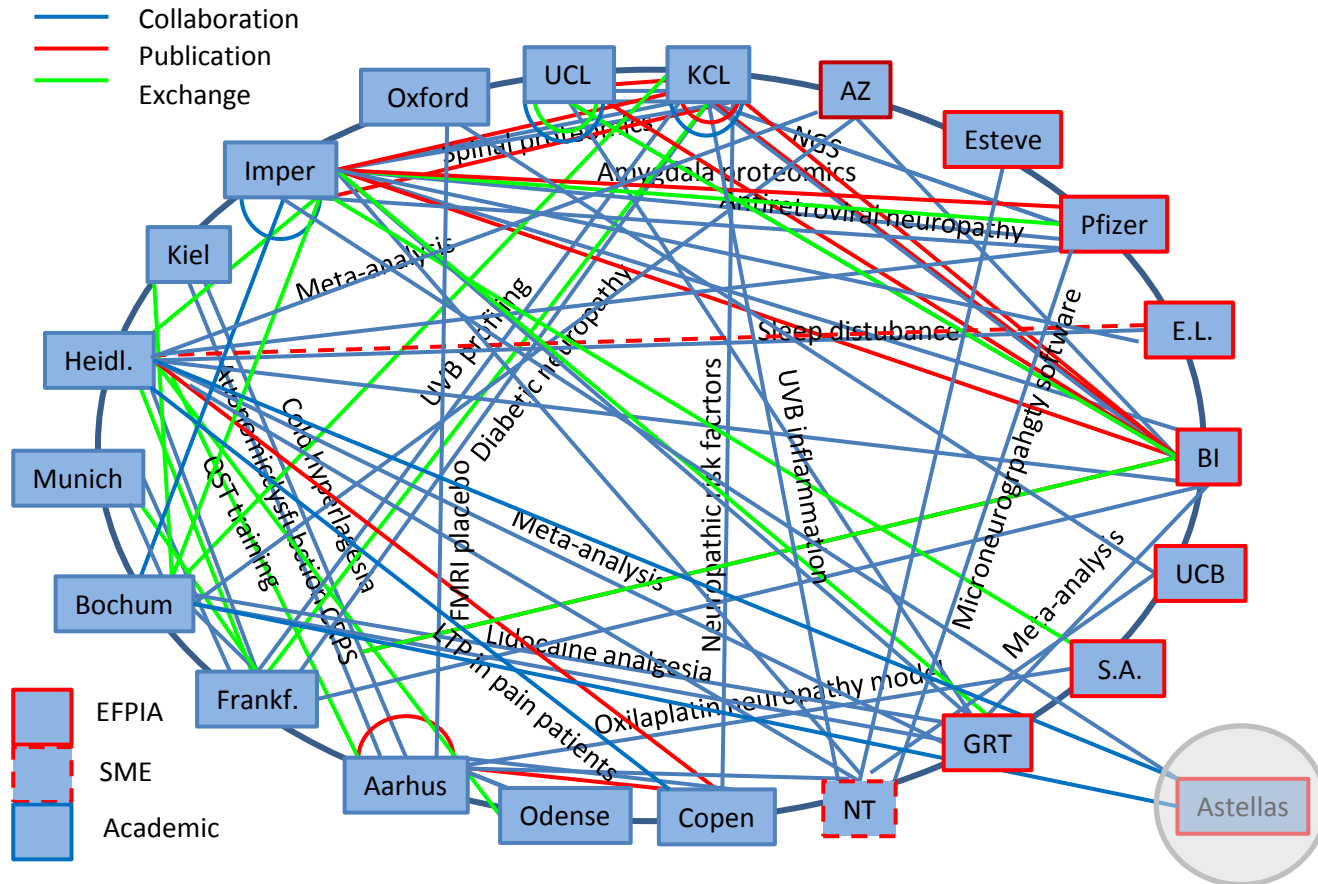
Headline achievements: Coordination - Collaboration



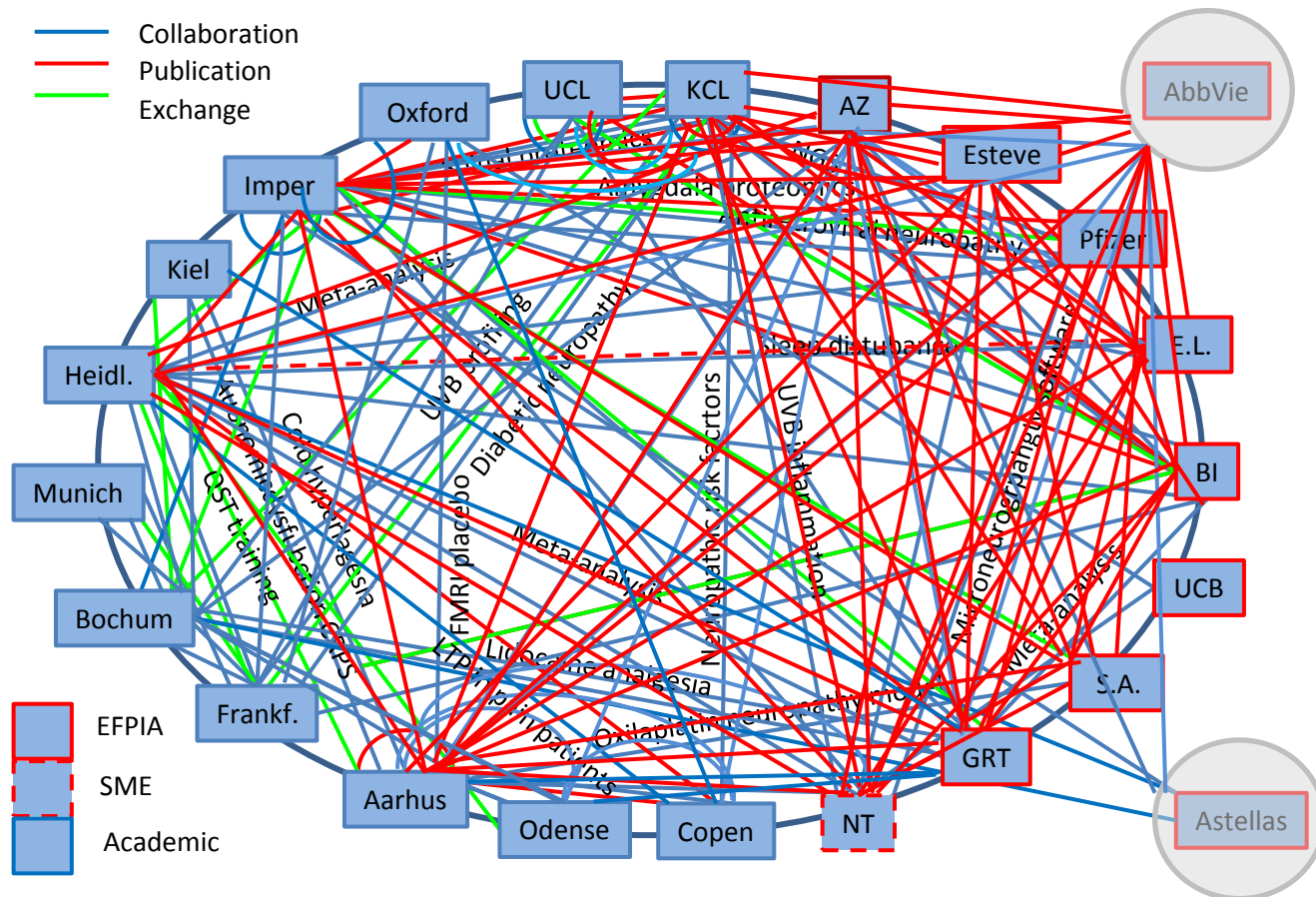
Headline achievements: Coordination - Collaboration



Headline achievements: Coordination - Collaboration



Headline achievements: Coordination - Collaboration



Remaining challenges



Operational

- Integration of data
- Continuity of initiated efforts

Scientific

- Finding true biomarkers of spontaneous pain
- Developing potent, effective pain killers





Neuroscience Technologies

Quantifying Pain



Neuroscience Technologies is a biomedical company with expertise in **pain neurophysiology**.

We help the pharmaceutical and biotech industries to assess the effects of new compounds on the peripheral nervous system.

We participate both at early **preclinical** stages and in **clinical** proof of concept studies.

This **translational approach** reduces time and cost in the drug development process.





NT Profile

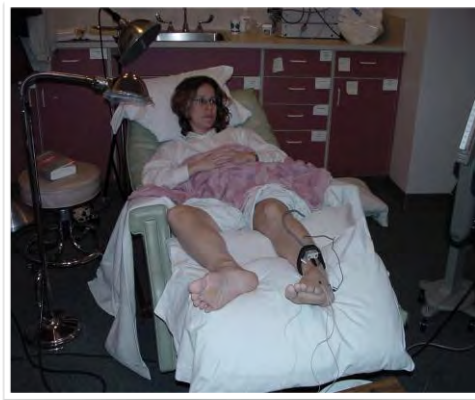


- Incorporated in 2005 in Spain: Science Park of Barcelona.
- UK subsidiary in 2010: Wolfson CARD, KCL.
- Clinical and preclinical studies at both sites.
- BoD and SAB, both international.
- Company fully owned by partners.
- **Contract Research Services:** Some clients:
 - Pharma (Pfizer, Abbott, Astra Zeneca, Esteve)
 - Biotech (BCN Peptides, Bionure)
 - Universities (Cambridge)
- **Medical Services:** Dept. of Neurology at MC Mutual (1200 pts/year)





Our signature technique: Microneurography

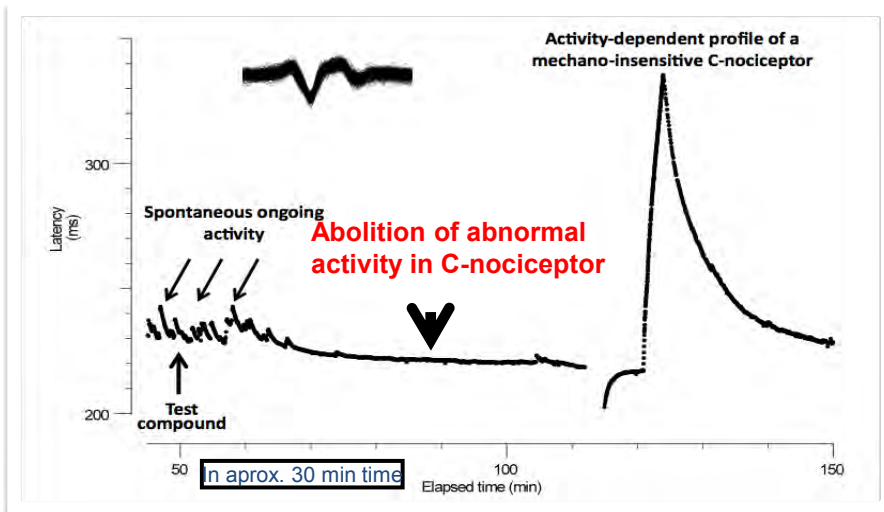


Clinical study currently ongoing in the UK (finalized).

Quantification of abnormal activity in pain fibers

Objective Assessment of *Spontaneous Pain*

Objective Assessment of *Analgesic Efficacy*





Our participation in EuroPain



- Trying to organise and coordinate a proposal for IMI 1st call, we contacted international colleagues. We were invited instead to take part of the consortium they were already organising.

NETWORKING

- NT is the only SME, we contribute electrophysiology knowledge.

“NICHE” CONTRIBUTION

- We are the only consortium member that has received 3 FTE directly from EFPIA for the 5-year project. No contribution from EC.

RISK SITUATION





Difficulties of IMI



- Working with most of our potential clients for 5 years **without economical return**.
- Difficulty in identifying the **“in-kind” contribution** of EFPIA partners.
- Difficulty to directly obtain **“in-cash” contribution** from EFPIA partners (initially forbidden by the rules).
- Disagreement regarding the intellectual property of the **Foreground** of the FTE financed by EFPIA that work at the SME (unfair compared to the FTEs financed by EC).





Benefits of IMI



- Better position in the market: more **visibility**, improved networking.
- Customers automatically **trust** your company more.
- **Multicultural environment**. You quickly become one of them.
- **Highly educated community** (easy to hire, but also lose good researchers).
- **Closer** to competitors (academia!), but also to possible partners.





Summary



- Need to ensure the survival of SMEs along 5 year projects (4 EFPIA companies closed their research lines in this time): capability to invoice partners as customers.
- Need to ensure the intellectual property of SMEs: FTEs financed by EFPIA not to be allowed to be claimed as EFPIA's foreground.
- EFPIA companies participate in many projects. The share per company/year is comparatively low.
- A better financed project would give more opportunities to the public consortium. The impact of the results of the research would be greater.



Thank you



Europain

www.imieuropain.org

Project coordinator: Märta Segerdahl, Grünenthal
Maerta.SegerdahlStorck@grunenthal.com

Manager IMI beneficiaries: Stephen McMahon, Kings College London
Stephen.mcmahon@kcl.ac.uk

Personal contact details:

Jordi Serra

jserra@nsc-tec.com

Neuroscience Technologies

www.nsc-tec.com

