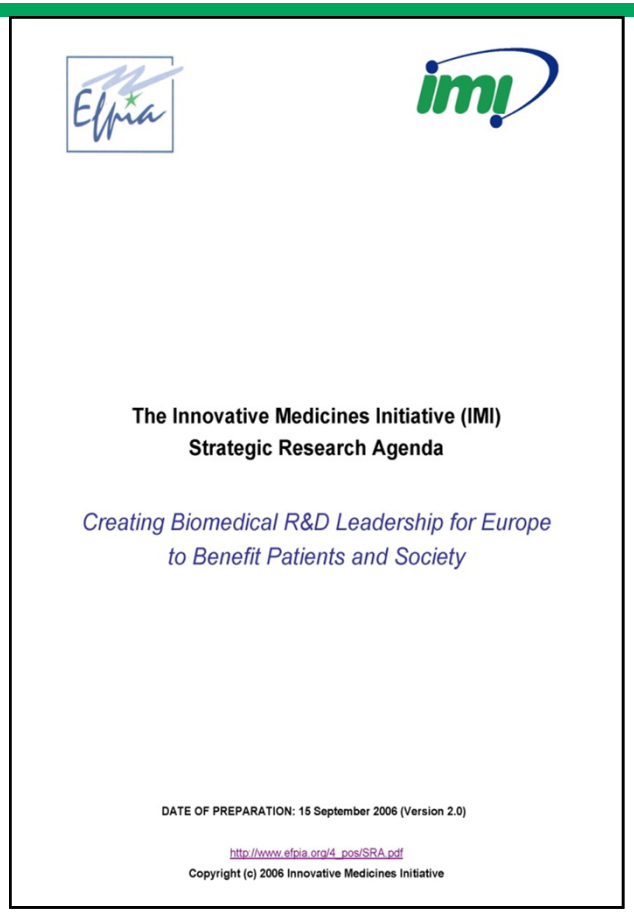
Industry – Academic Partnering
Sophie Dix

Brian Eastwood (Lilly)
Esther Schenker (Servier)
Gary Gilmour (Lilly)
John Talpos (Janssen)
Linda Mulryan (Lilly)
Lynne Rueter (Abbott)
Mark Tricklebank (Lilly)
Niels Plath (Lundbeck)
Theresa Ballard (Roche)
Tim Bussey (UCAM)
Rouba Kozak (Pfizer)
Sophie Billa (Lilly)
Sanna Janhunen (Orion)

The Innovative Medicines Initiative
What is it?

- **Joint initiative between EFPIA (european federation of pharma industry) and European Commission with the intent to facilitate the discovery of new drugs**
- **Research Projects ("calls") are put together by Pharma for Pharma: pharma consortia write project outline/expectations**
  - **EFPIA – Research Directors Group to outline agenda topics; research scientists in pharma (private consortium) to write calls**
  - **Academic and small biotech organizations respond to/apply for call as public consortia**
- **Total budget of 2 billion euros provided by EC and matched by in-kind contributions by EFPIA members**
- **Duration 2008-2017**
- **Strategic Research Agenda: www.imi-europe.org**

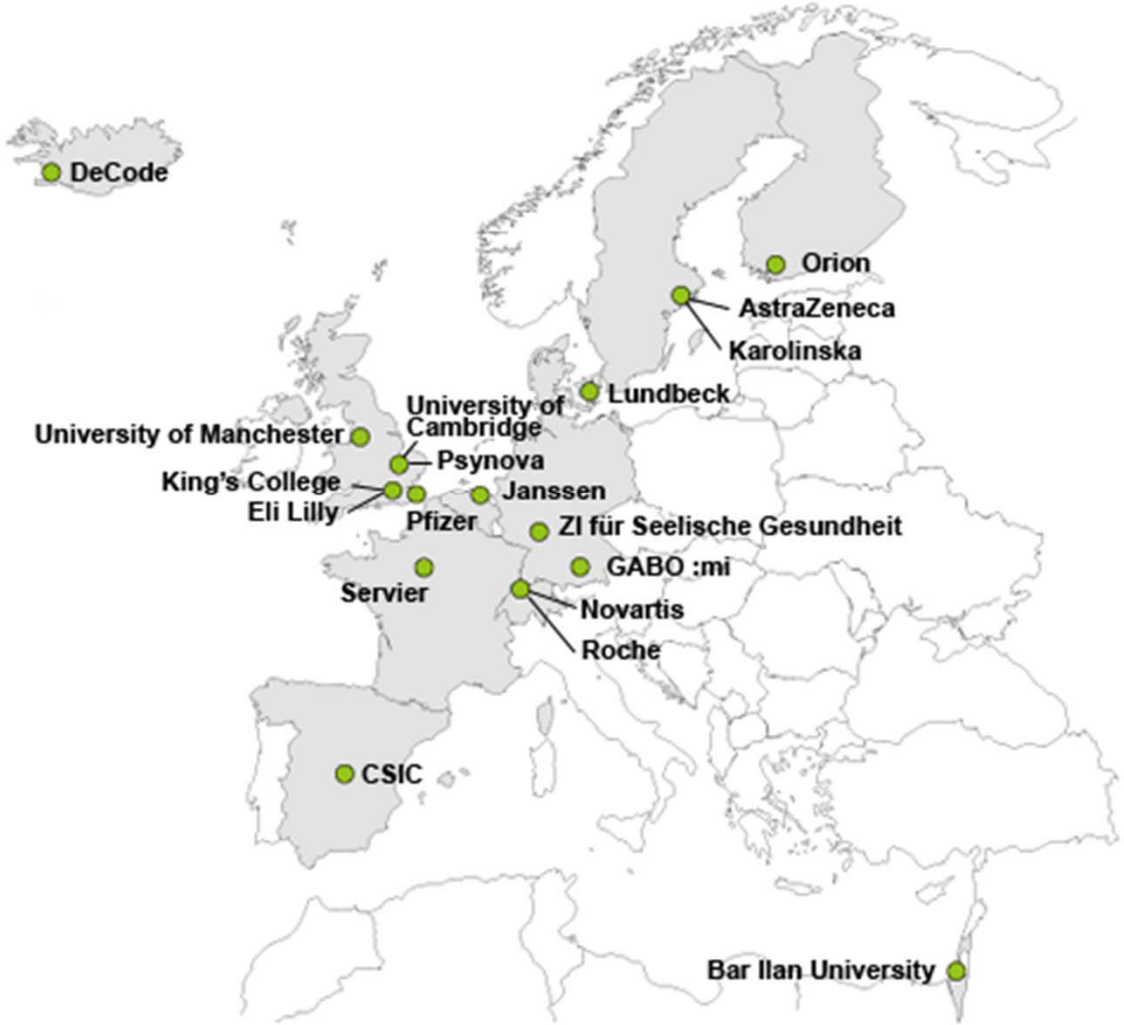

The Innovative Medicines Initiative (IMI)
Strategic Research Agenda

Creating Biomedical R&D Leadership for Europe to Benefit Patients and Society

DATE OF PREPARATION: 15 September 2006 (Version 2.0)

http://www.efpia.org/4_pos/SRA.pdf

The Consortium



Collaborative Approaches

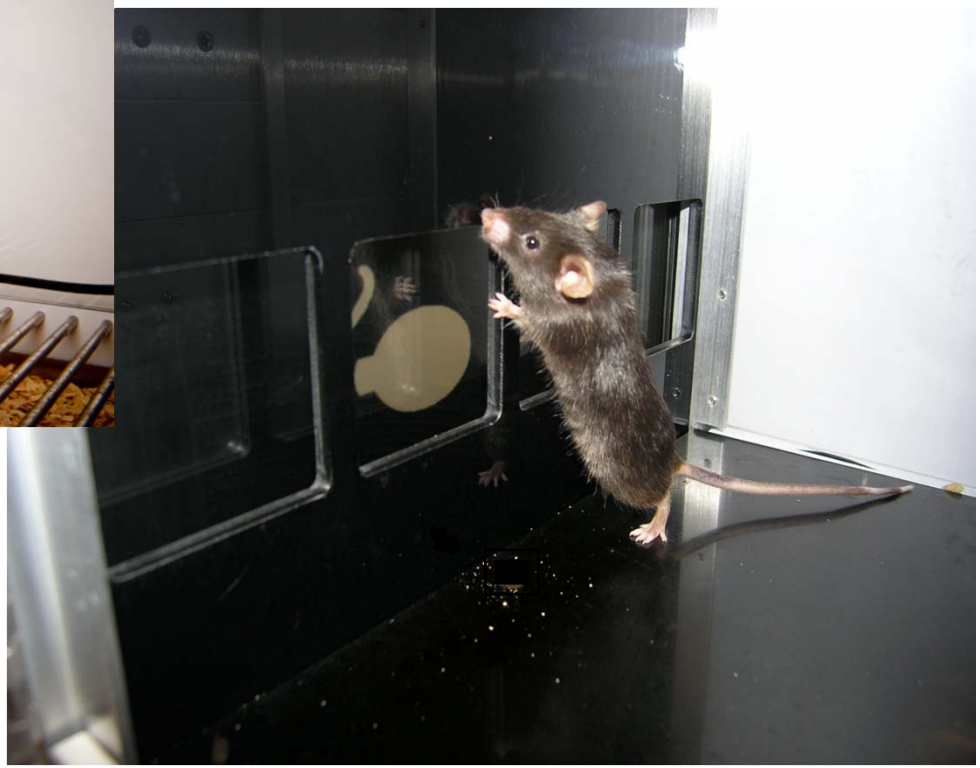
Sharing and meta-analysis of data from current and new assays

- **Retrospective analysis**
  - Vehicle and pharmacological standards data with/without pharmacological perturbations
- **Prospective analysis**
  - Vehicle and selected pharmacological compounds with/without pharmacological perturbations and centralised “blinded “ compound formulation and distribution
- **Assay choice**
- **Compound choice and supply**
- **Perturbation choice**

Sharing and meta-analysis of data from schizophrenia models

- **Pharmacological**
- **Neurodevelopmental**
- **Genetic**

Touchscreens Hardware



Equipment summary (EFPIA partners)

RAT	Boxes	Hardware	Software	Status
Abbott	8	Campden	ABET II	Delivery May
Janssen	24	Med Assoc	K-Limbic	Running
Lilly	16	Med Assoc	In-house	Running
Lundbeck	10	Med Assoc	In-house	Running
Orion	12	Campden	ABET II	Running
Pfizer	4	Campden	ABET II	ordered
Roche	8	Med Assoc	K-Limbic	Running
Servier		Under discussion		

MOUSE	Boxes	Hardware	Software	Status
Abbott		No plans		
Janssen	12	Med Assoc	K-Limbic	Running
Lilly	16	Med Assoc	In-house	Running
Lundbeck	8	Campden	In-house	Delivery March
Orion		Under discussion		
Pfizer	8	Campden	ABET II	Running
Roche		Under discussion		
Servier		Under discussion		

Visual Discrimination

RAT	Data to date	2011 objectives
Abbott		
Janssen	Pharmacological	Pharm (validation)
Lilly	Pharmacological	Pharm (validation)
Lundbeck	Behavioural	Behav & Pharm
Orion	Behavioural	Behav & Pharm
Pfizer		Behav & Pharm
Roche	Pharmacological	Pharmacological

MOUSE	Data to date	2011 objectives
Abbott		
Janssen	Training	Strain comp, Pharm
Lilly	Behav	Behav & Pharm
Lundbeck		Behav & Pharm
Orion		
Pfizer		Behav & Pharm
Roche		

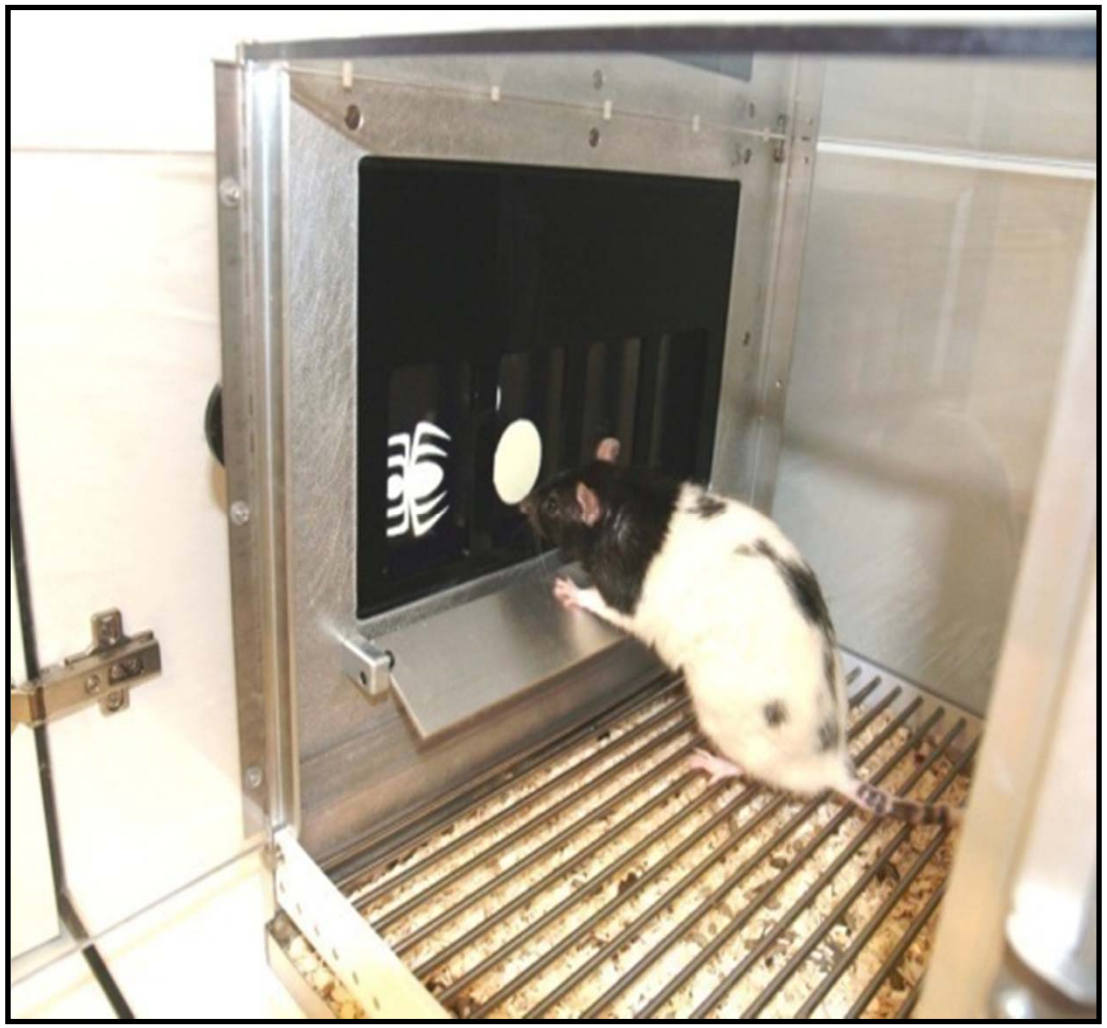
Additional tasks planned or in development

Rat	TASK
Abbott	PAL
Janssen	TUNL, VD Rev, PAL
Lilly	TUNL, DnMTS, VD Rev, PAL
Lundbeck	VD Rev , PAL
Orion	TUNL, VD Rev, PAL
Pfizer	PAL
Roche	DMTS

Mouse	TASK
Abbott	
Janssen	5-CCPT, VD Rev, PAL
Lilly	DnMTS , VD Rev, PAL
Lundbeck	VD Rev , PAL
Pfizer	PAL
Orion	
Roche	

UCAM – all of these plus many more inc NOR!

Prospective Visual Discrimination study



Visual Discrimination analysis: retrospective analysis

Studies used for analysis of Visual Discrimination data

- Eli Lilly X 2 cohorts
- Janssen X1 cohort
- Roche X2 cohorts
- Cambridge X2 - 1X Lister hooded
  -1X Sprague Dawley
- Orion X2 - 1X Lister hooded
  -1X Long Evans
- Lundbeck X1

10 studies in total

Model used to assess data

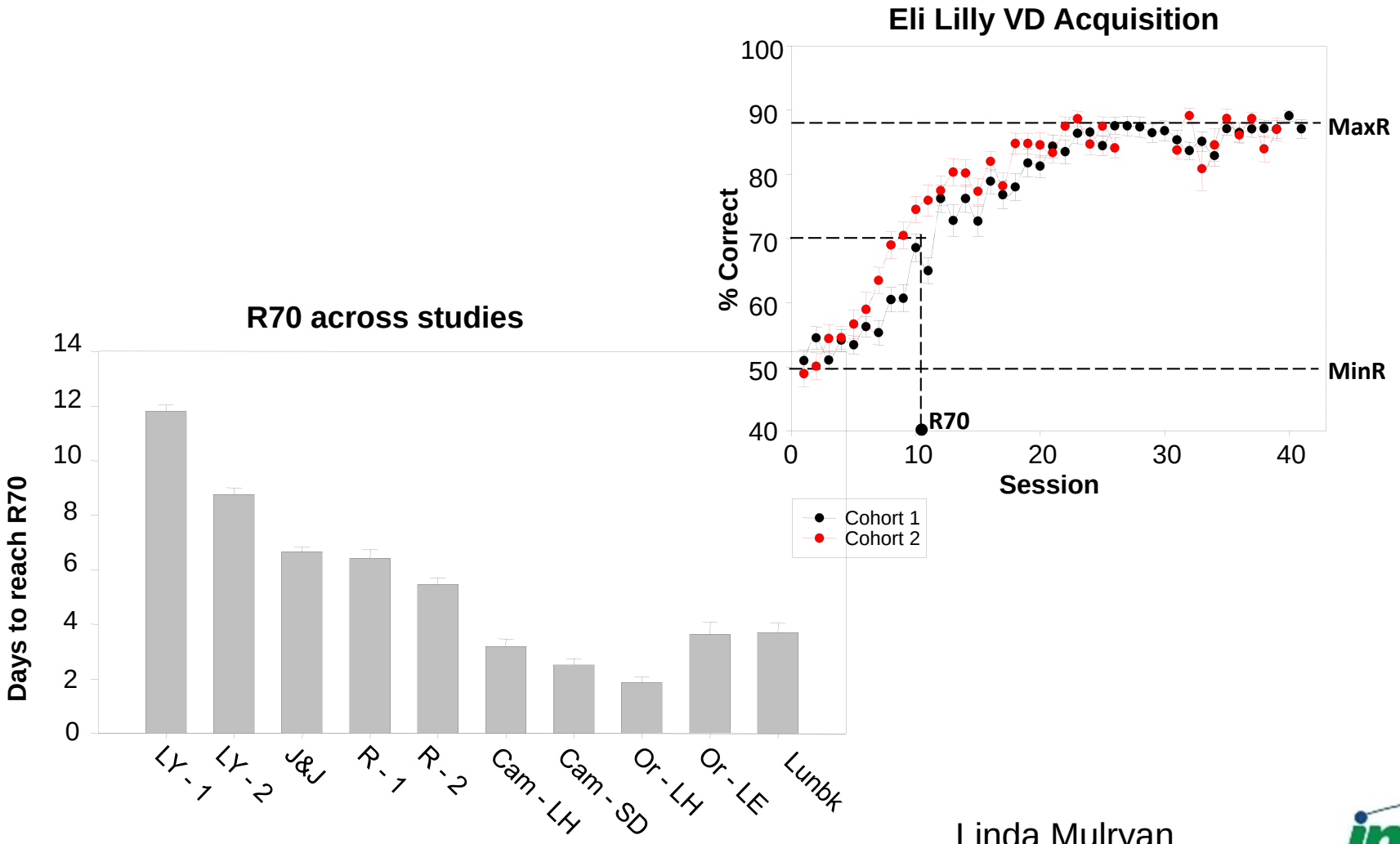
$$\%\ \text{Correct} = \text{MinR} + \frac{(\text{MaxR} - \text{MinR}) * \text{Day}^{\text{slope}}}{\text{Day}^{\text{slope}} + \text{R70}^{\text{slope}} * \left(\frac{70 - \text{MaxR}}{\text{MinR} - 70}\right)}$$

MaxR = Max response
MinR = Minimum response
R70 = Day at which animals reach 70% correct.

The model was used to fit regression curves for each study in order to estimate
-maximum % correct acquired **(MaxR)**
-the minimum % correct **(MinR)**,
-the day that animals should reach 70% correct **(R70)** (which approximates the midpoint of their acquisition) and
-the **slope**, which indicates the speed of acquisition.

Linda Mulryan

Eli Lilly – Visual Discrimination



Linda Mulryan

Prospective Visual Discrimination study – provisional parameters

Chamber make	Fixed
operating system	Fixed
Screen	2 location mask (size of windows?)
Stimuli	5.5^{2}cm – UCAM type. Which pictures?
Flap/Shelf	yes
trials per session	100
session duration	45 min (or 100 trials)
Session frequency	1x daily
ITI sec	10
Timeout after incorrect	Yes: 10 s
Correction trials	no
Omissions	yes
Initiations	yes
Strain	Lister Hooded (n=48). Supplier; CR?

Drugs

- PCP
- Ketamine
- MK801
- Amphetamine
- Scopolamine

PharmaCog objectives: mouse touchscreen

- Overlapping objectives with NewMeds: i.e. validation and harmonisation of cognitive tests including touchscreens
- Mouse touchscreen working group established (Lilly, Janssen, Boehingrer, Lundbeck, Eisai) meetings to be held bimonthly (initial teleconference held 15th Mar)
- Initial focus on visual discrimination: acquisition, performance and reversal. 2011 objectives:
  - Harmonise parameters across sites
  - Profile donepezil, memantine and scopolamine
  - Profile AD transgenics: PDAPPs, TASTPM and triples
- Critical to have alignment between NewMeds and PharmaCog

PharmaCog
Advancing science and treatment of Alzheimer's Disease

NewMed Summary

- Good progress in equipment acquisition and set up. Nice balance of ‘off the shelf’ (Campden) and in-house set ups
- Initial focus on Visual Discrimination, reversal and PAL. Should have comparable pharmacological data from at least 4 sites for each of these tasks.
- Cross-site prospective VD validation study underway
- Novel tasks also in development: TUNL, D(n)MTS, 5C-CPT, NOR
- Evaluation of scope and potential of touchscreen technology is well underway
- Strong commitment and contribution from all academic and industry (EFPIA) partners
- Unique opportunity and study