



do more
feel better
live longer

R&D Strategy

Bridging the academia-industry gap

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European Head
Discovery Partnerships with Academia
GlaxoSmithKline

GSK at a glance

Who we are



We are a science-led global healthcare company. Our mission is to improve the quality of human life by enabling people to do more, feel better and live longer.



What we do



Pharmaceuticals

We develop and make medicines to treat a range of conditions including: respiratory diseases, cancer, heart disease, epilepsy, bacterial and viral infections such as HIV and lupus, and skin conditions like psoriasis.



Vaccines

We research and make vaccines for children and adults that protect against infectious diseases, including: influenza, rotavirus, cervical cancer, measles, mumps, rubella, hepatitis, polio, tetanus and meningitis.



Consumer Healthcare

We make innovative consumer products in four categories of Total Wellness, Skin Health, Oral Care and Nutrition.

Where we are



We are a global company operating in more than 115 countries.
We have a network of 87 manufacturing sites and key R&D centres in UK, USA, Spain, Belgium and China.



Employees by region

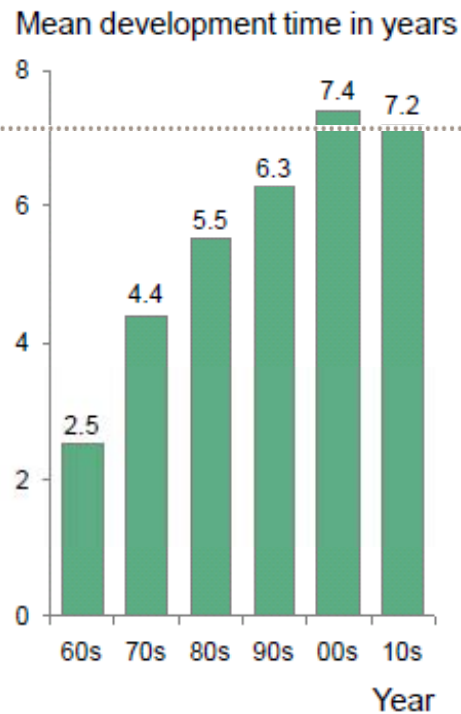


USA	17,201
Europe	38,788
EMAP	36,738
Japan	3,515
Other	3,246

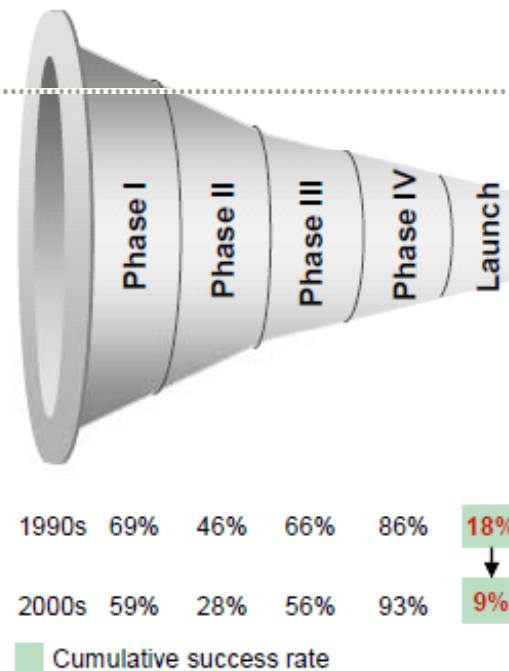
Over 99,488
Employees in total

The pressures on industry continue...

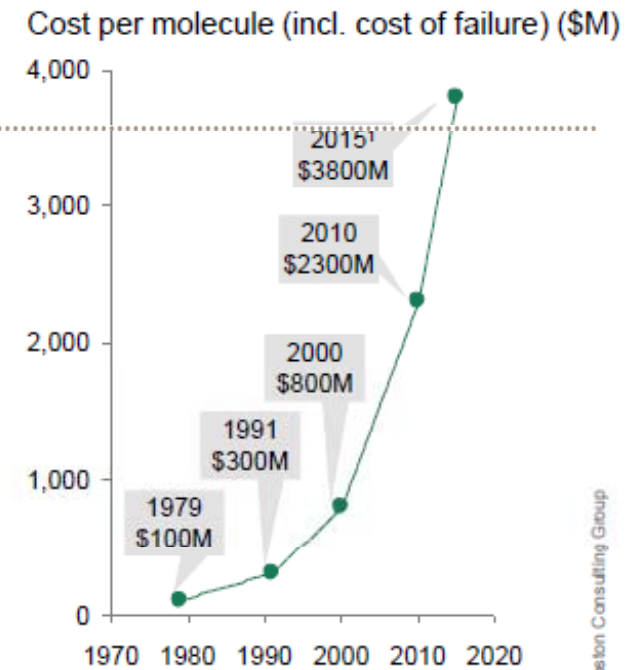
Expanding clinical timelines



Deteriorating success rates



Rising R&D costs



GSK R&D Strategy

Best Science



Repersonalise
R&D

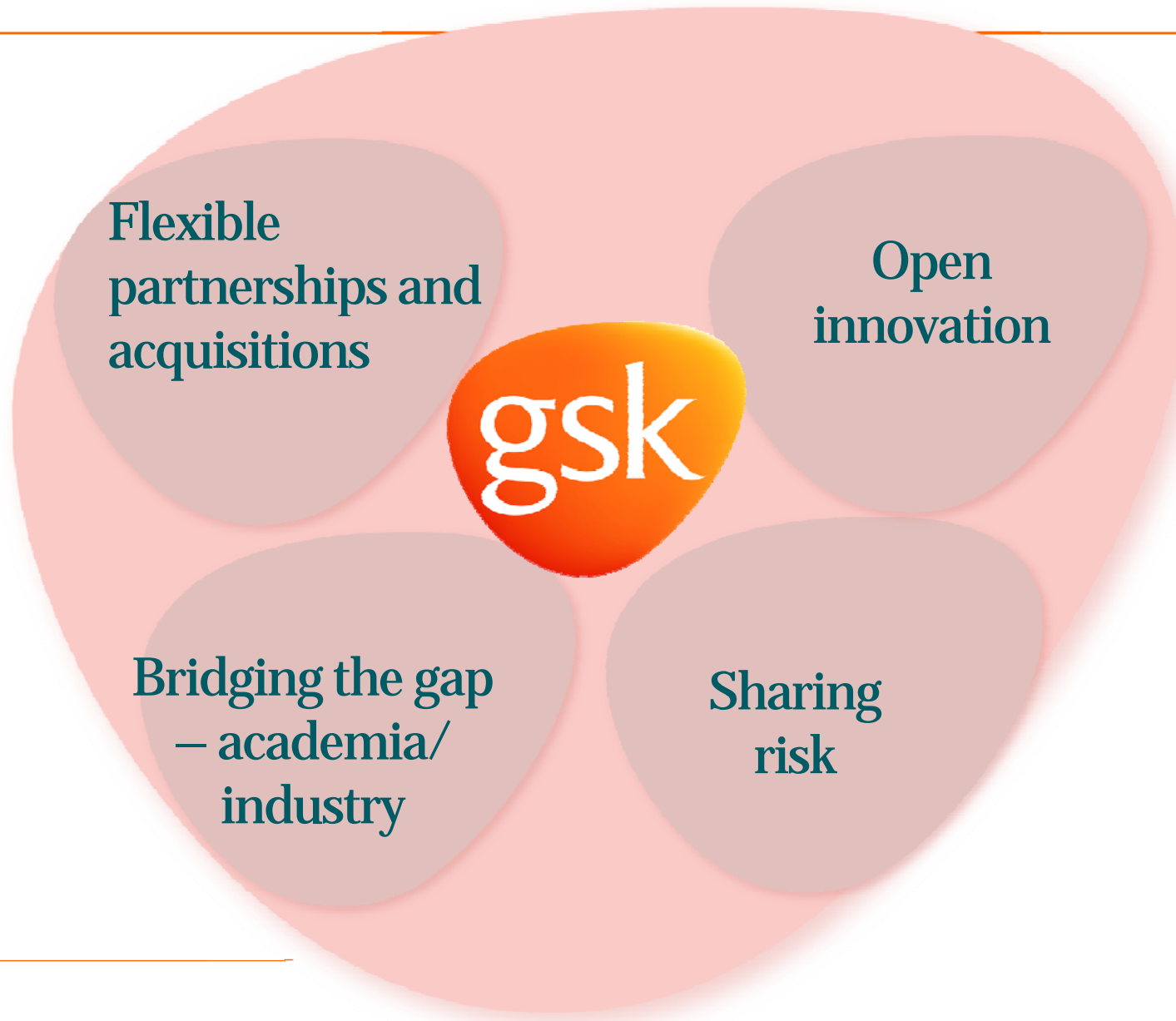
Improve ROI



Diversify
Through
externalisation

A Different Pharma Model

Integrated with the scientific and research community



Diverse Partnerships Integral to Our Success



Discovery Partnerships with Academia (DPAc)

A collaborative approach from GSK



“everyone playing to their strengths”

Deep biology and disease
understanding of Academia



Drug discovery
expertise of GSK

Build integrated partnerships that can translate innovative research into medicines that benefit patients

Key elements of DPAC



Focus on the medicine

- Collaborative partnerships focussed on drug discovery
- Starts at any point from initiation of early screening, finishes with the medicine

Undertake the best science

- Minimal infrastructure – undertake projects independent of location or disease area
- Access to all GSK drug discovery and development capabilities

Share in the investment, share in the reward

- Both sides contribute - looks for a complementary match of skills where GSK can make a positive contribution to success
 - Milestone funding with royalties. If GSK stops then the academic is free to continue and progress
-




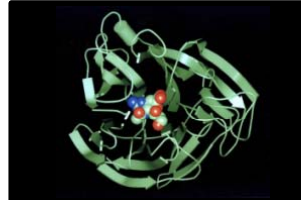
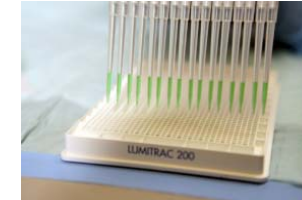
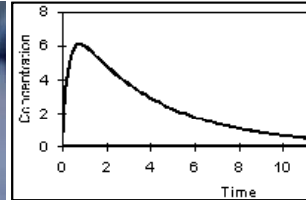
What we look for




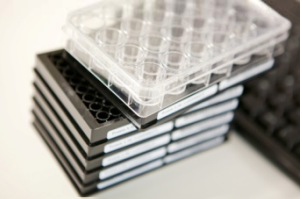
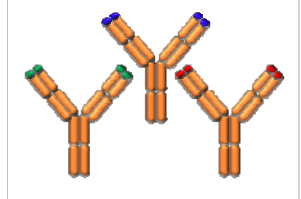
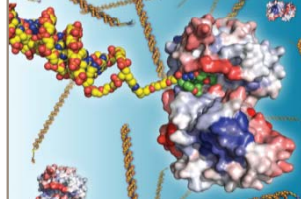


Clear Therapeutic hypothesis	A coherent and supportable hypothesis that modulation of target will produce a physiological effect which will be of therapeutic benefit to particular patients
Target defined	Specific drug target identified, and some understanding of type of pharmacology desired
(Exclusive) enabling expertise	Academic partner has know-how and/or expertise essential to progressing the target which is not (readily) found elsewhere
Tractability	Target knowledge suggests that a drug-like molecule can be generated Disease knowledge suggests that opportunity can be evaluated effectively in the clinic
Requirement for GSK contribution	GSK has capabilities and expertise which will help progress the project to the next milestone

What are GSK's capabilities?



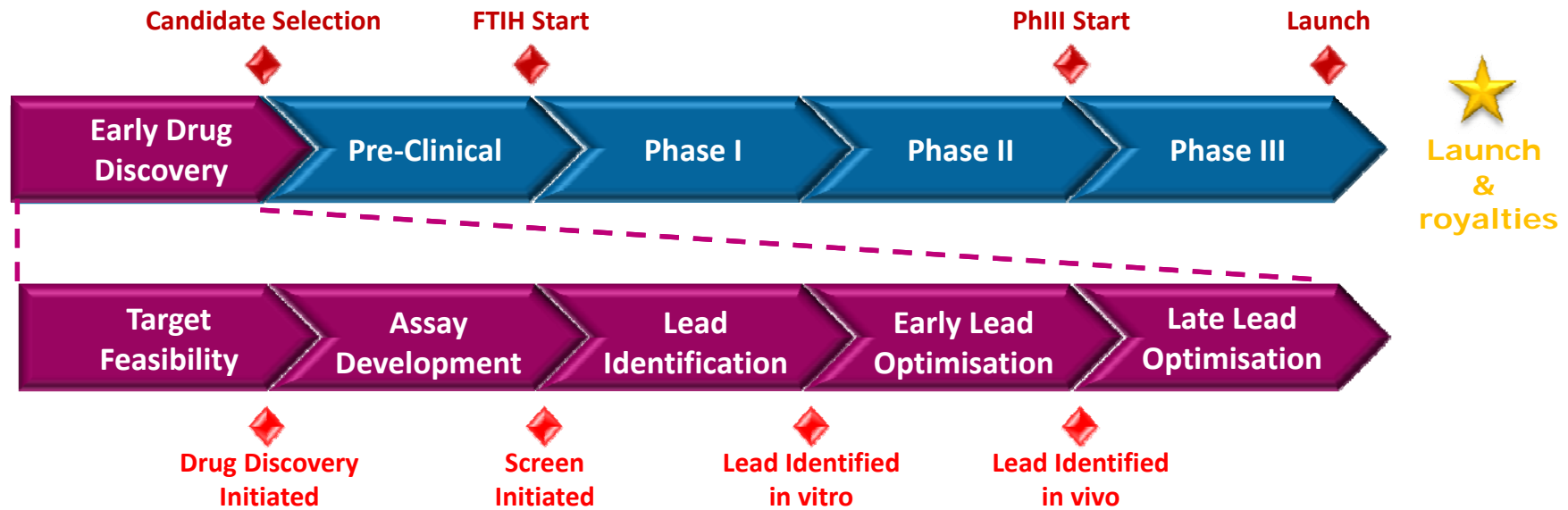
Large scale protein production	HTS capacity 2 million compound set	Medicinal chemistry and computational molecular design	Selectivity screening	PK-PD modelling
		 		



					
Flexible, high tech assay platforms	Biopharm discovery platforms	Biopharm affinity maturation	Encoded Library technology >10 billion compounds	Synthetic & analytical chemistry	Preclinical Development (safety, chemistry, pharmacy)



Shared activities between academia and GSK early stage



Typical GSK activities



Typical academic activities



Examples of projects in Europe



Preventing Multiple Organ Failure in Severe Acute Pancreatitis



Mr. Damian Mole
John Liddle



A disease modifying approach to the treatment of Huntington's Disease



Prof. Susann Schweiger
Iain Uings



Treating Fibrotic Liver Disease



Dr. Jonathan Fallowfield
Mark Bamford



Treating Systemic Amyloidosis



Prof. Sir Mark Pepys
Mark Bamford



Topical Therapy for Netherton Syndrome, Rosacea and Atopic Dermatitis



Prof. Alain Hovnanian
John Liddle



© Laurent Attias/Fondation Imagine

Therapy for Focal Segmental Glomerulosclerosis



Prof. Antoine Durbach
Stephane Huet



Treating α 1-Antitrypsin Deficiency



Prof David Lomas
Andy Brewster



Treatment of *P. aeruginosa* Infections

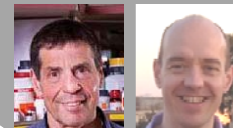


Dr Giovanni Bertoni
Stephane Huet

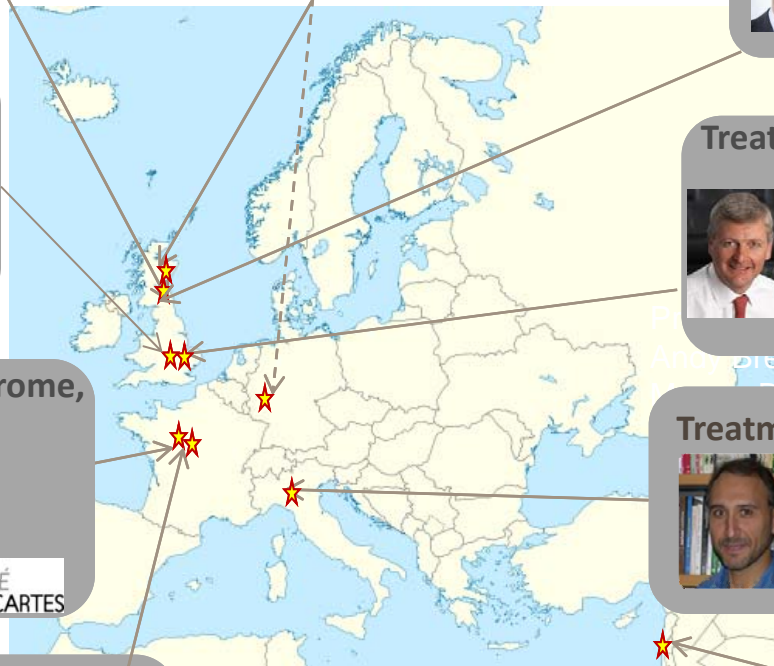


UNIVERSITÀ DEGLI STUDI DI MILANO

Treating Graft vs Host Disease and other immunological diseases



Prof Nathan Karin
Jeremy Griggs



Discovery Fast Track Challenge



- An opportunity to collaborate together to test our compound collection using our pharmacological screening platforms to discover active compounds
- We will share key results from the screen to provide you with the best possible chemical probes to interrogate your translational biological assays



How does Discovery Fast Track work?



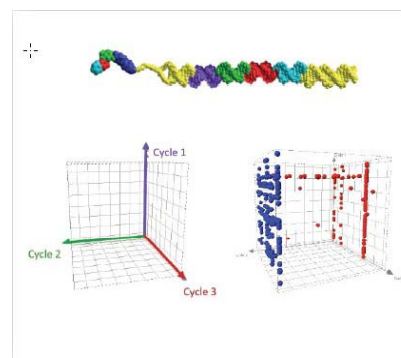
- The researcher provides a novel drug discovery concept that may include assay protocols, tools, reagents and models
- GSK provides a team of scientists and its state-of-the-art capabilities to scale up and industrialize assays and data analysis
- The target is screened against GSK compound collections and enabled to find novel quality pharmacologically active compounds
- Discovery Fast Track is running in Europe in 2014



Reagents and Assays



High Throughput Screening



Encoded Library Technologies



Hit Qualification Support



In summary.....

GSK R&D Strategy

Best Science



Repersonalise
R&D

Improve ROI



Diversify
Through
externalisation

Discovery Partnerships with Academia

building industry – academia collaborations in drug discovery

contact e-mail: dpac@gsk.com

web site: www.dpac.gsk.com



Thank you