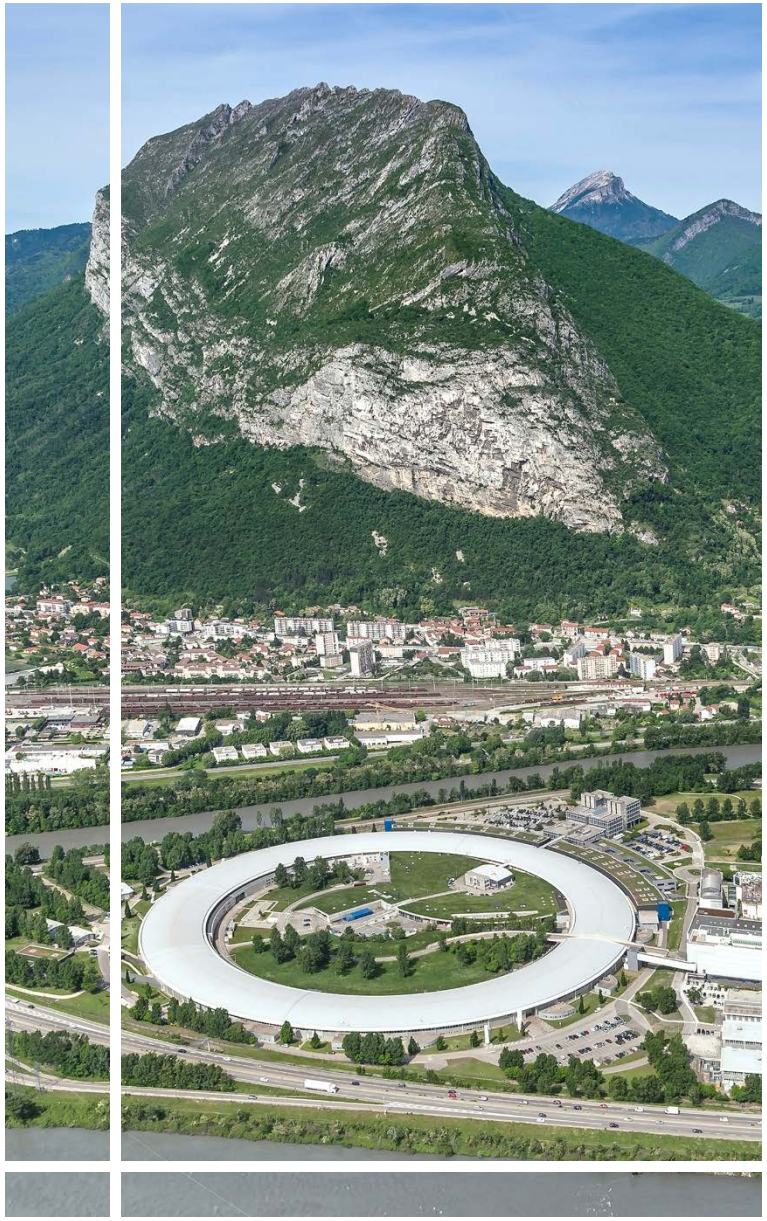

ESRF
The European Synchrotron



“your thoughts on supporting structures and marketing for better cooperation between industry and RIs (but feel free to change the topic)”

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Ed Mitchell
Head of Business Development, ESRF
Honorary Professor Keele University (UK)

A MODEL OF INTERNATIONAL COOPERATION: 21 PARTNER NATIONS

13 Member states:

	Contribution to the budget in %
France	27.5 %
Germany	24 %
Italy	13.2 %
United Kingdom	10.5 %
Russia	6 %
Benesync (Belgium, The Netherlands)	5.8 %
Nordsync (Denmark, Finland, Norway, Sweden)	5 %
Spain	4 %
Switzerland	4 %

8 Associate countries:

Israel	1.5 %
Austria	1.3 %
Centralsync (Czech Republic, Hungary, Slovakia)	1.05%
Poland	1 %
Portugal	1 %
South Africa	0.3 %

ESRF
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ESRF key figures:

Scientific interest

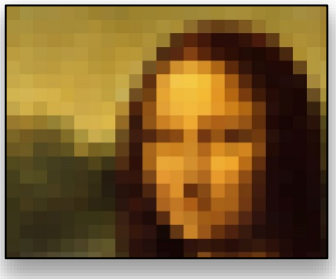
- ✓ ~**6,500 user visits** every year including ~**4,000 individual users**
- ✓ ~**2,000 proposals** per year: ~**900 accepted**
- ✓ Nearly 2,000 publications per year**: ~5 every day** and 25,166 reference articles in the period 1994-2014
- ✓ **30%** of the research at ESRF involves **industrial developments**
- ✓ **About 2M€ industrial income annually**
- ✓ 50 PhD students

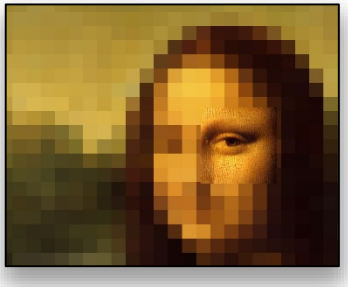
Industry as a User of analytical RI facilities.

INDUSTRY DRIVERS TO EXPLOIT SYNCHROTRONS?

Look inside

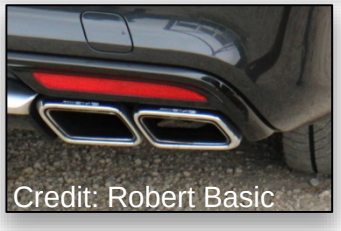
Details and mapping





Fast

In real conditions



The added value of synchrotron X-rays allows researchers to look inside objects with very high spatial resolution, with a high speed to follow dynamic processes (or to study many samples), and under real manufacturing or end-use conditions.

CONTRIBUTING TO INDUSTRY INNOVATION

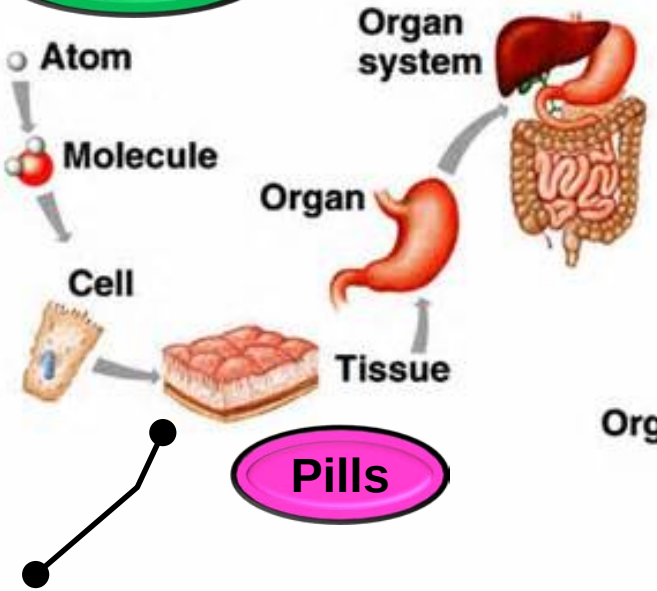
ATOMS TO HUMANS: WORKING WITH PHARMA AND MEDTECH

Imaging: X-ray fluroscence, nano-/micro-computed tomography, soft-X-ray microscopy

Diffraction: Protein & small molecule crystals, powders

Drugs

Implants / Phenotyping



Medical devices

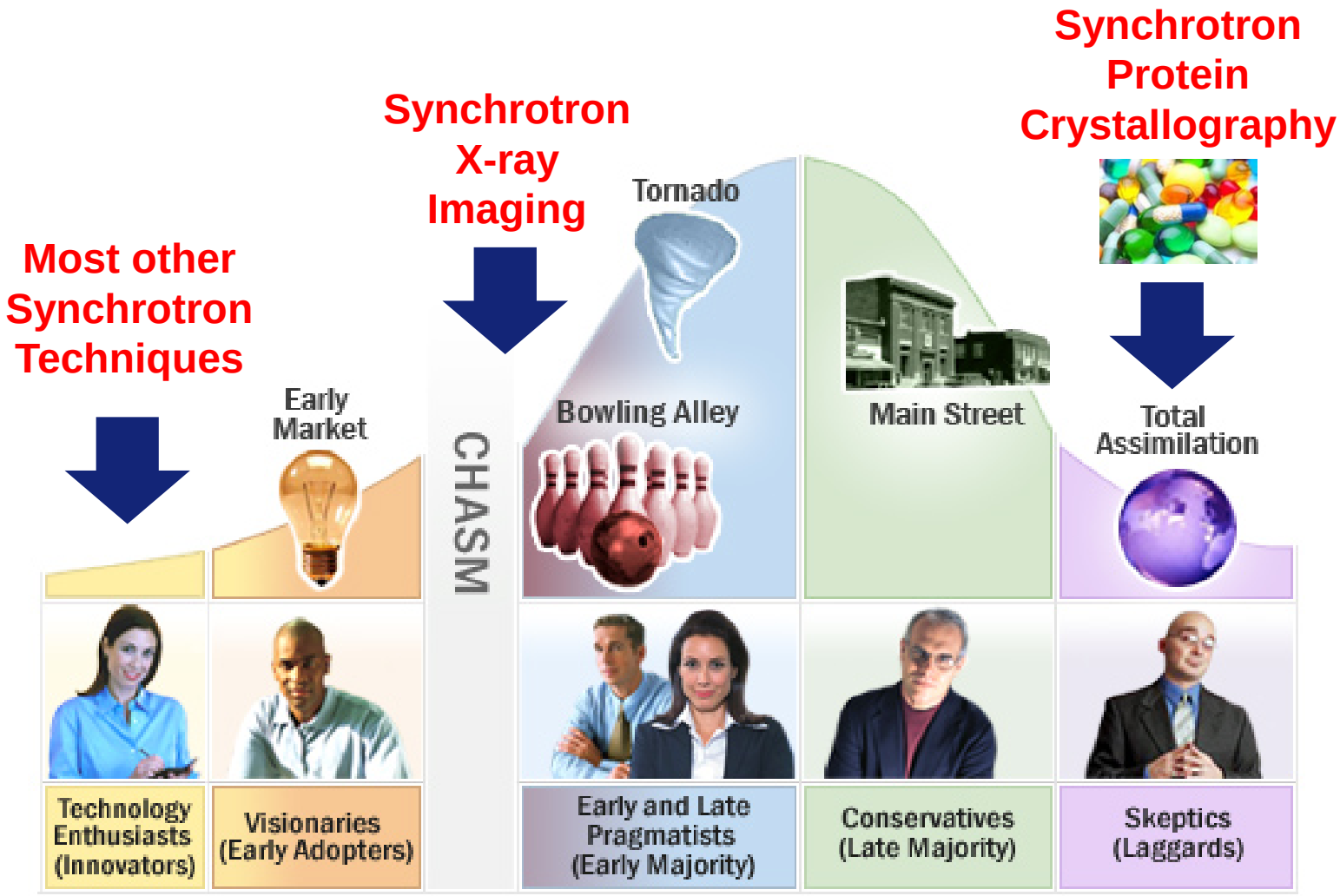
Scattering: SAXS, bioSAXS, PDF

Pills

Imaging: X-ray fluroscence, nano-/micro-computed tomography, cryo-X-ray microscopy, FTIR

Imaging and therapy: irradiation & radiography

SYNCHROTRON X-RAYS: AN INDUSTRIAL COMMODITY?



Geoffrey Moore; www.chasminstitute.com

PERCEPTION OF RESEARCH INFRASTRUCTURES

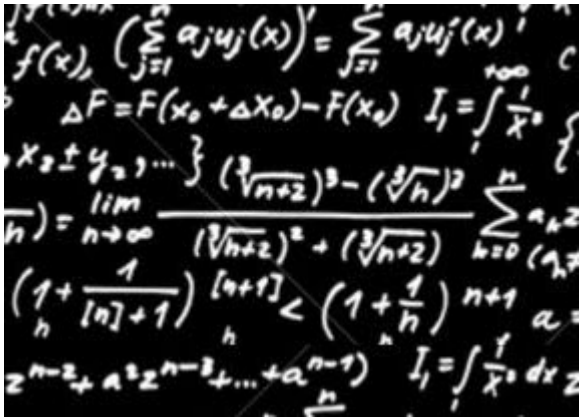
Our view of the RIs:

- **Unique large-scale instrument**
- **State-of-the-art**
- **Fantastic science!**

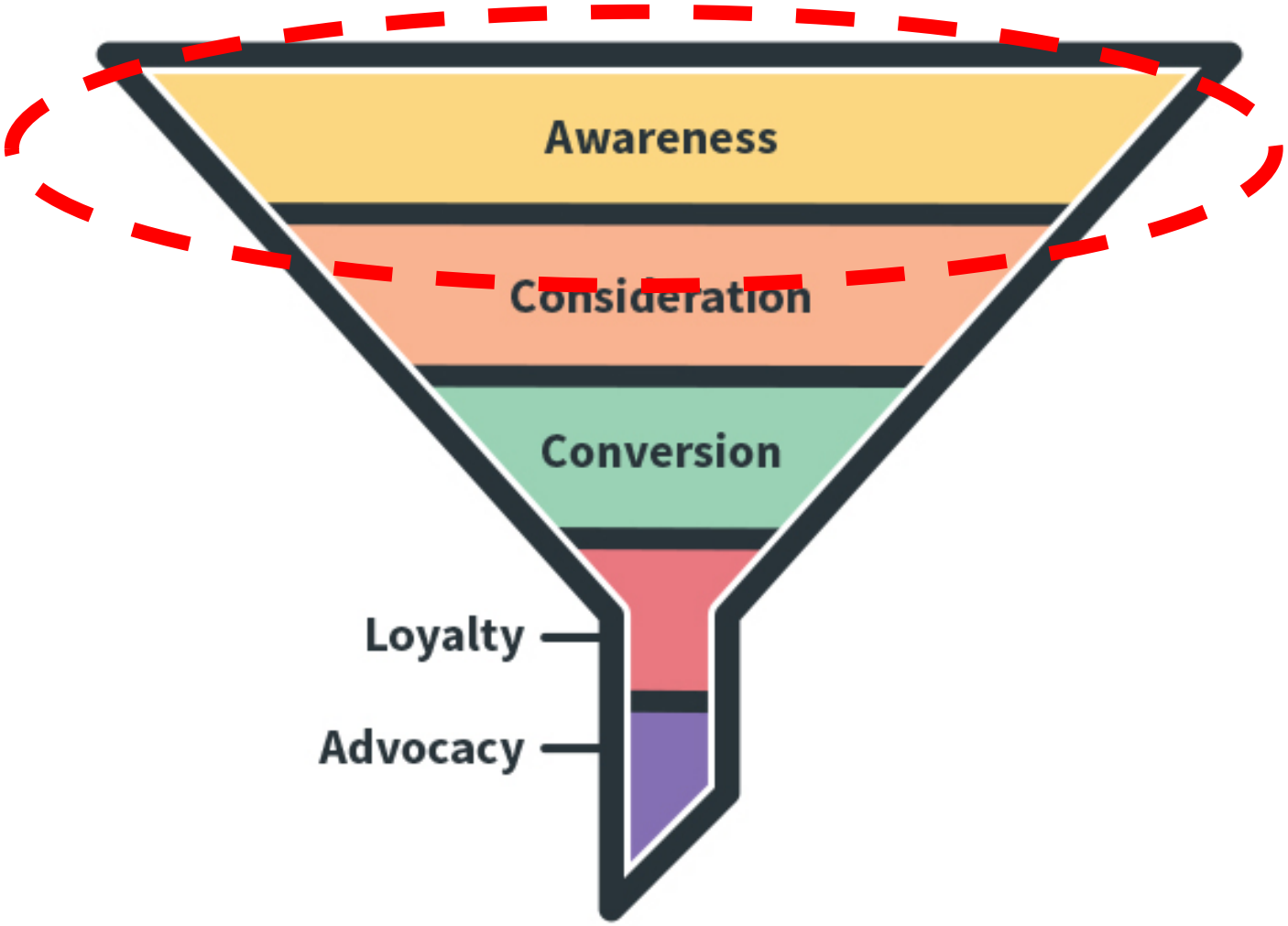
Industrial translation:

- **Expensive and difficult to use**
- **Risky**
- **Fundamental science**

Not for me.



THE MARKETING FUNNEL



Facility level:
ISIS - ICRD programme

City level:
Grenoble - IRT NanoElec

Country level:
Denmark - LINX

EU level:
SINE2020 - CALIPSO

ISIS Collaborative Research and Development Scheme

ICRD Programme

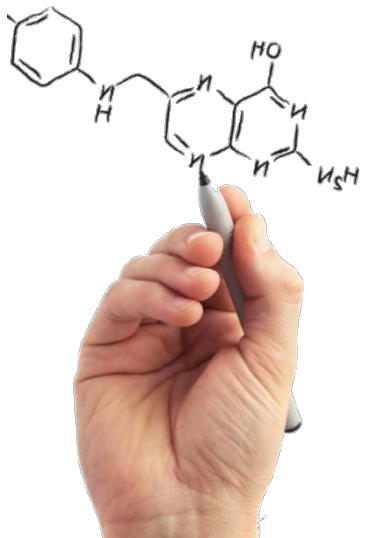
UK Industrial ..... Academic

ICRD Route

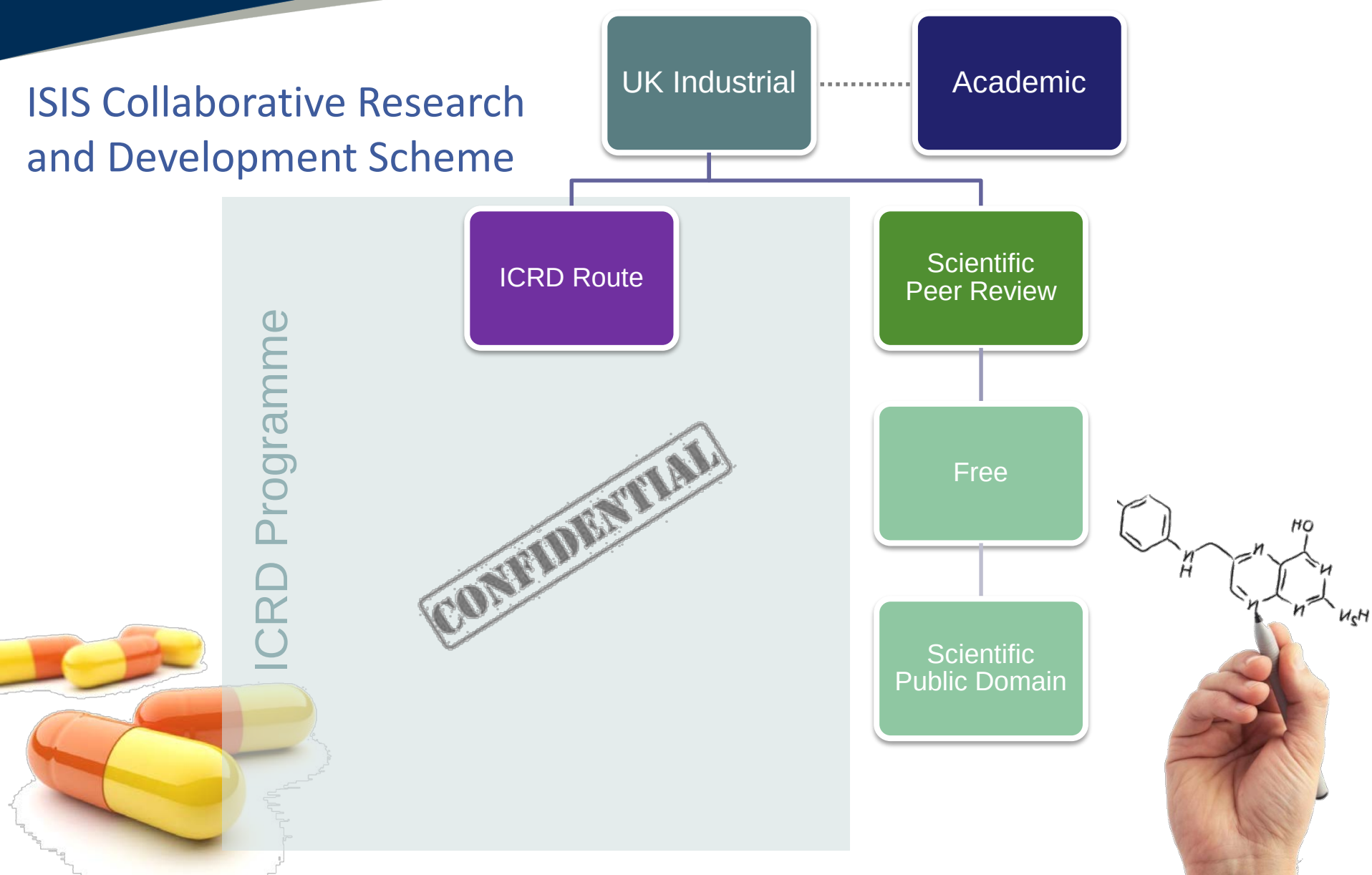
Scientific Peer Review

Free

Scientific Public Domain



ISIS Collaborative Research and Development Scheme



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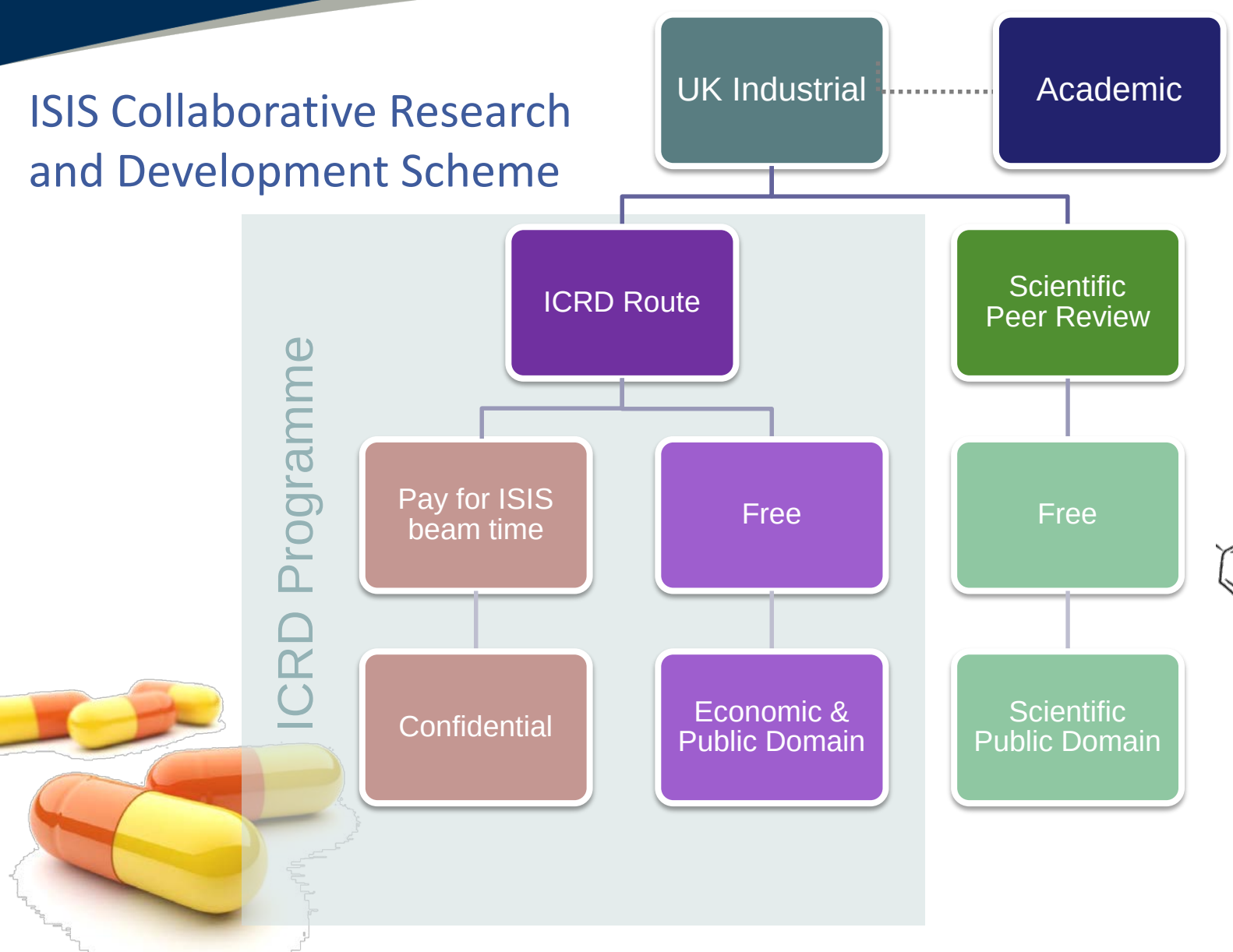

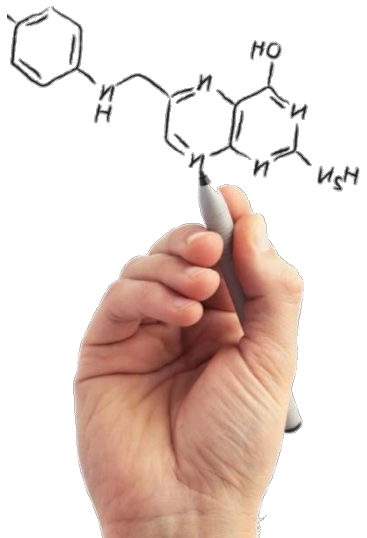

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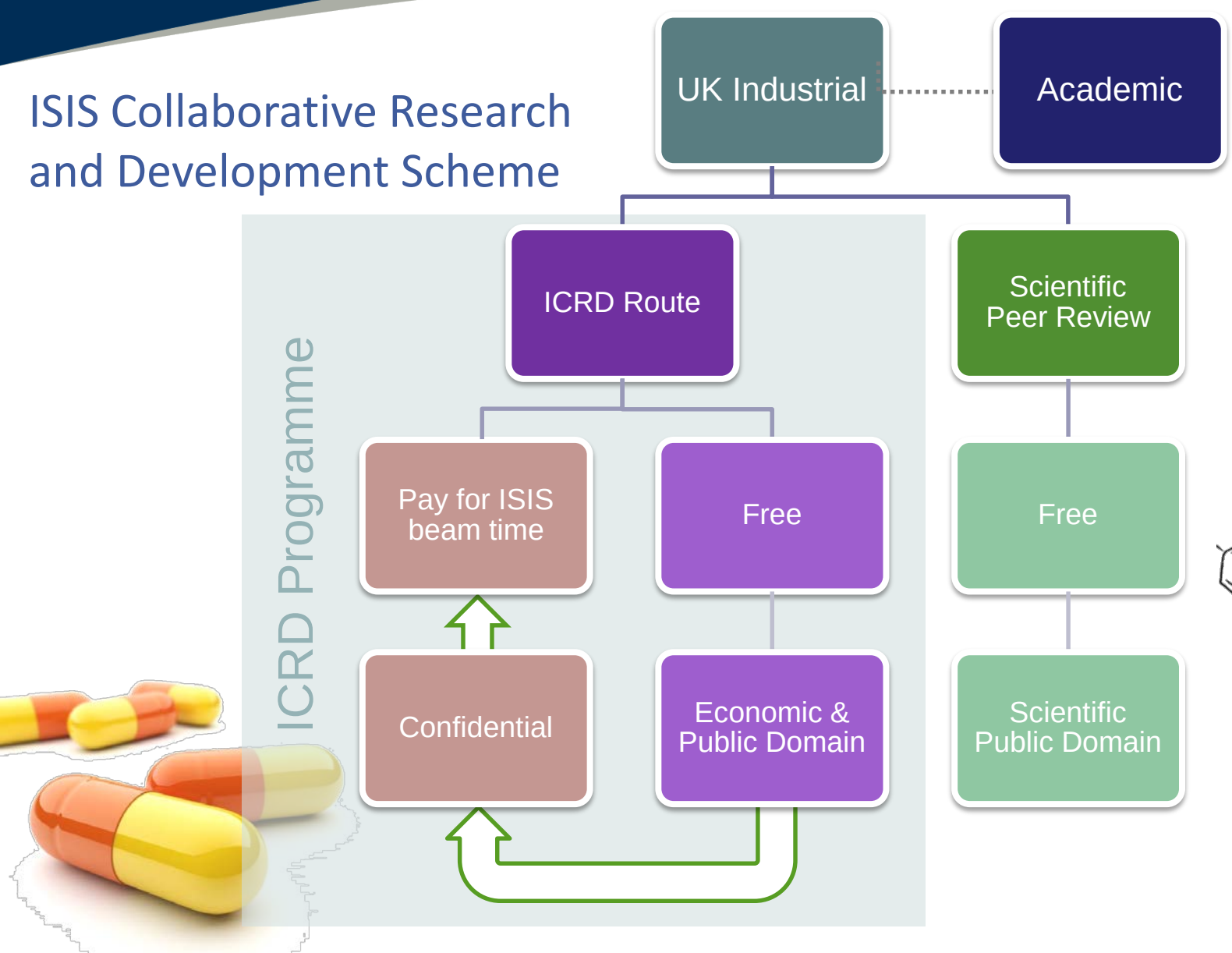

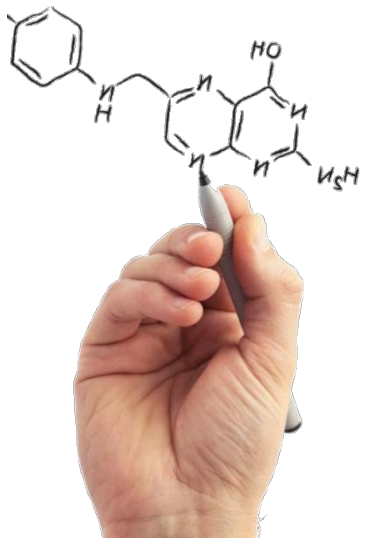

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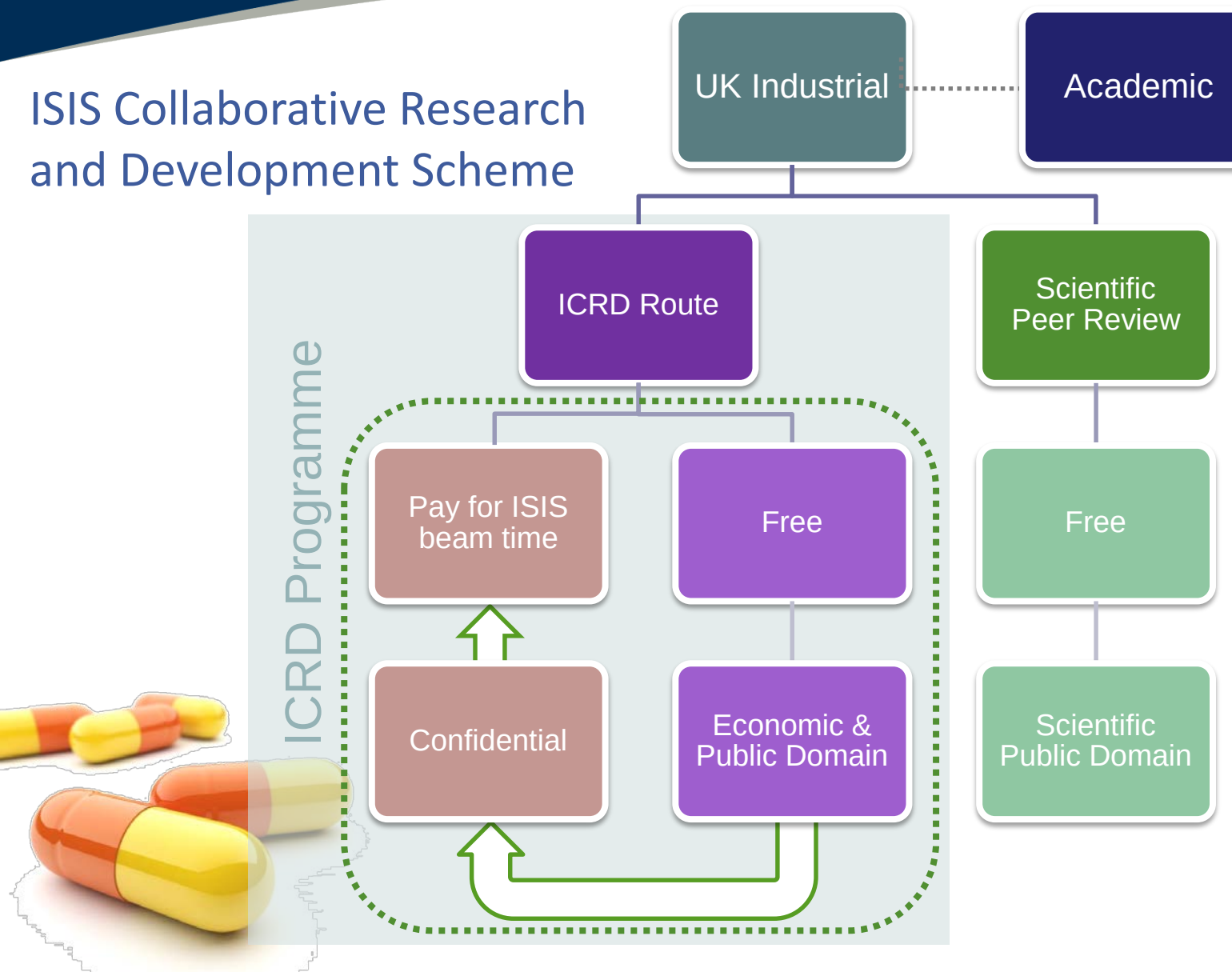
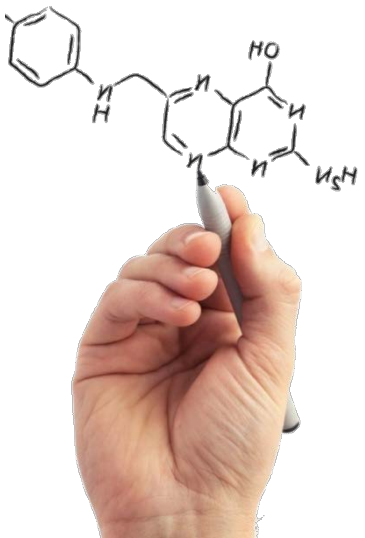




ISIS Collaborative Research and Development Scheme

UK Industrial ..... Academic

ICRD Route

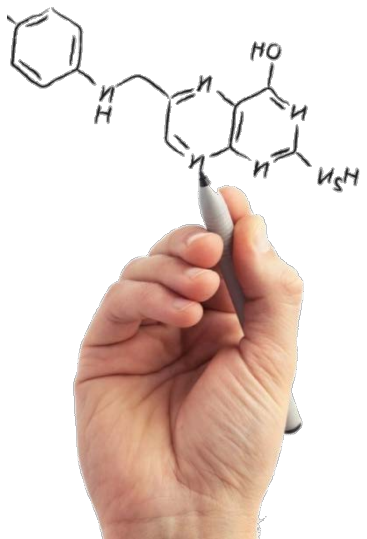
Scientific Peer Review

ICRD Programme

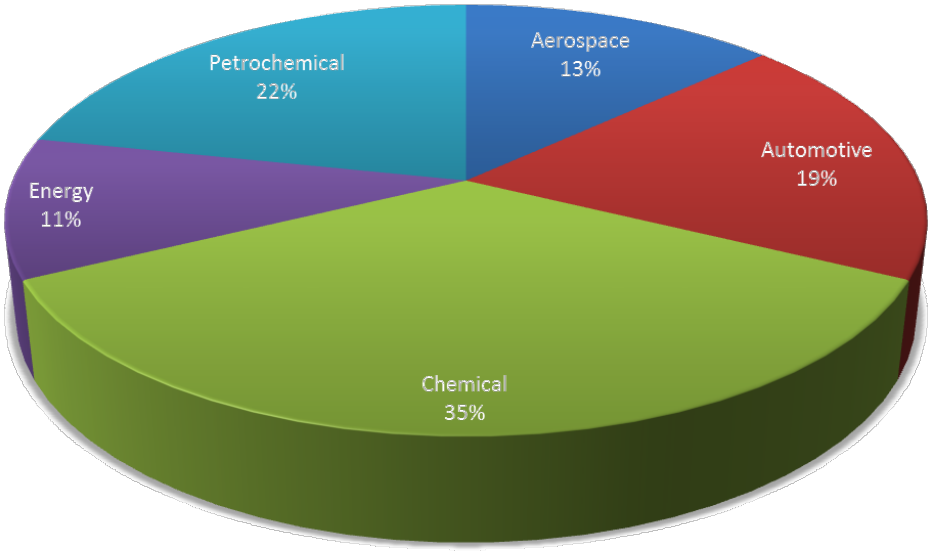
- Low risk for many industries
- Willing to explore or extend technique

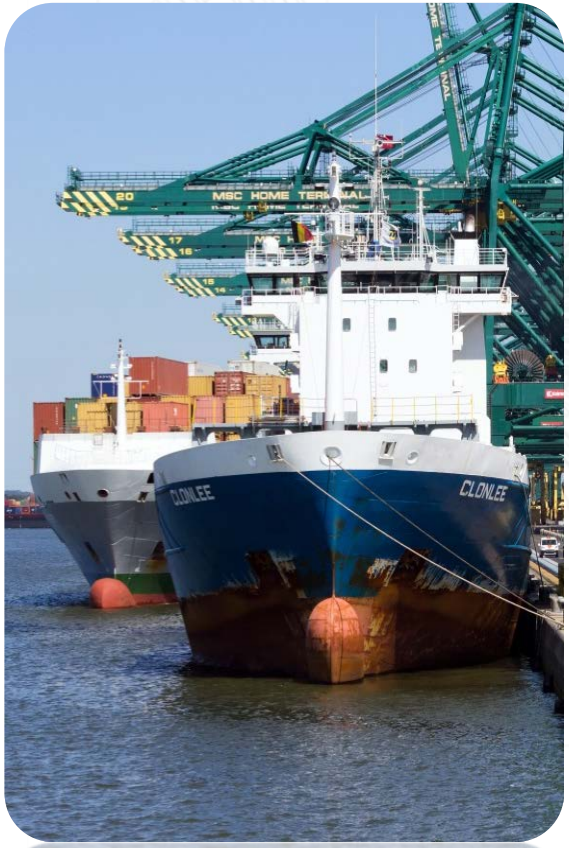
Free

Scientific Public Domain



30+ companies involved in the scheme…





…from across the industrial sector

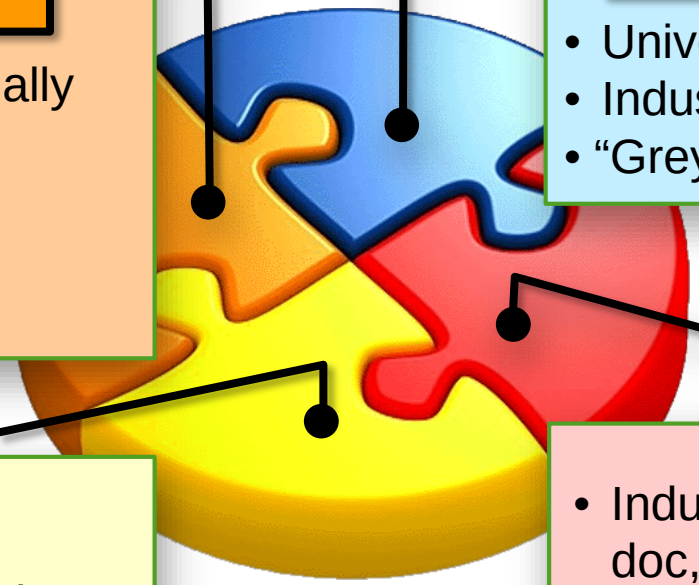
In addition to the normal 15% through peer review

HOW DOES ESRF WORK WITH INDUSTRY?

Feasibility access: “have a go”

CLIENT SERVICES
Proprietary, Complex and Mail-in Services

- Generates 1.5M€ annually
- >100 unique clients
- Joint “CRO” provision
- Full IP rights to client
- Costs recovery



PUBLIC BEAM TIME
30% linked to Industry, Must be published

- Universities with industry
- Industry on its own
- “Grey Zone”

TECH TRANSFER
Instrumentation

- Licensing: 30 technologies
- In-house manufacturing
- Consultancy
- Generates 0.5M€ annually

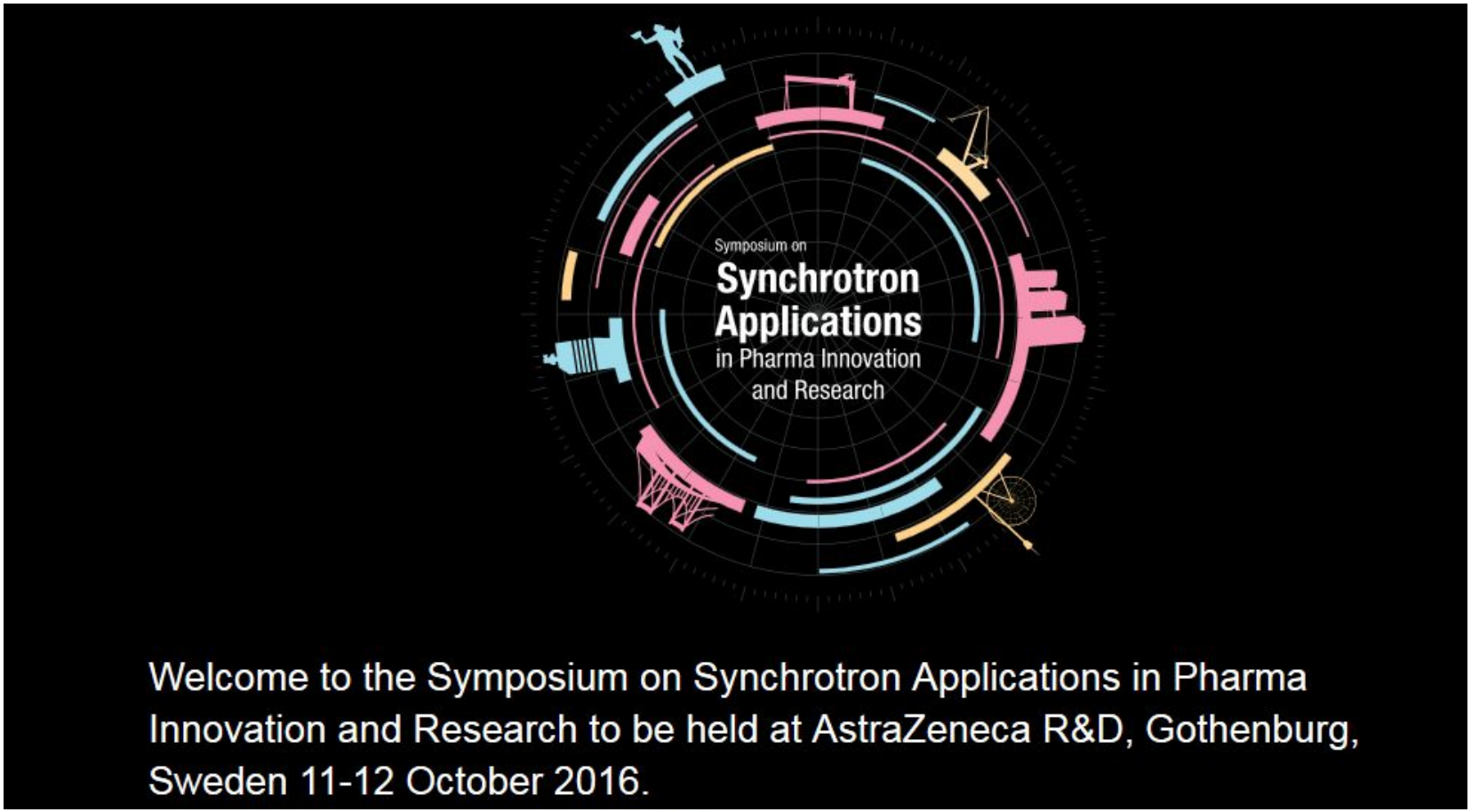
COLLABORATION & GRANTS

- Industry sponsored staff (post-doc, PhD, trainees…)
- Horizon 2020

nanoscience foundries & fine analysis
nffa.europe
nanoscience foundries and fine analysis for Europa

NANOELEC.

OUTREACH, EDUCATION, VISIBILITY (MARKETING)



MAX IV ESRF AstraZeneca

CITY LEVEL: BUILDING CAPACITY & TRUST

NANOELEC.

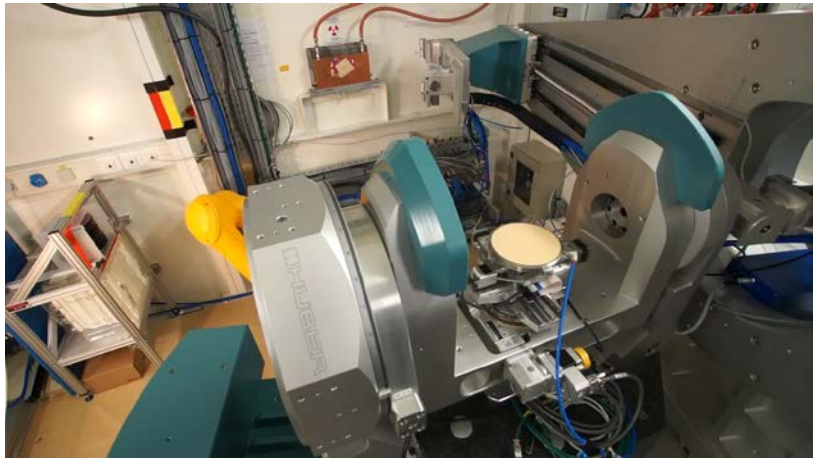
A French-funded PPP.

www.irtnanoelec.fr

A Triple Helix Programme to connect ESRF/ILL and the strategic nano/micro-electronics industry.

6.5M€ over 9 years for:

1. What does industry want?
2. Sample prep and off-line tools
3. Facility development
4. Nuturing industry to use us



COUNTRY LEVEL: THE DANISH INITIATIVE - LINX

Exruptive to participate in new ambitious X-ray industry portal as founding SME partner. Innovation Fund Denmark supports the project with DKK 50 million.

February 22, 2016

"Historical opportunity seized: Value creation in Danish industry through the world's most powerful neutron and X-ray microscope."

- Innovation Fund Denmark

Three universities partner up to help Danish companies in utilizing brand new approaches for product development. 15 companies are already involved in the collaboration.

10M€ over 5 years from a country of 5.5 million population.

Extrapolate to 500 million population in the EU (±🇬🇧) …..

EU LEVEL: CALIPSO/NMI3 & SINE2020/CALIPSOplus (?)

CALIPSO and NMI3 IAs: c. 100k€ each over 4 years

1. Joint Industrial Advisory Board
2. Joint ILO/BDO meetings
3. Workshops/meetings with industry (c. 20 supported)

SINE2020: c. 2M€ over 4 years

1. Industrial Advisory Board
2. Feasibility access
3. One central business developer supported – analysis/strategy
4. Creation of marketing assets
5. Marketing and outreach, events, etc

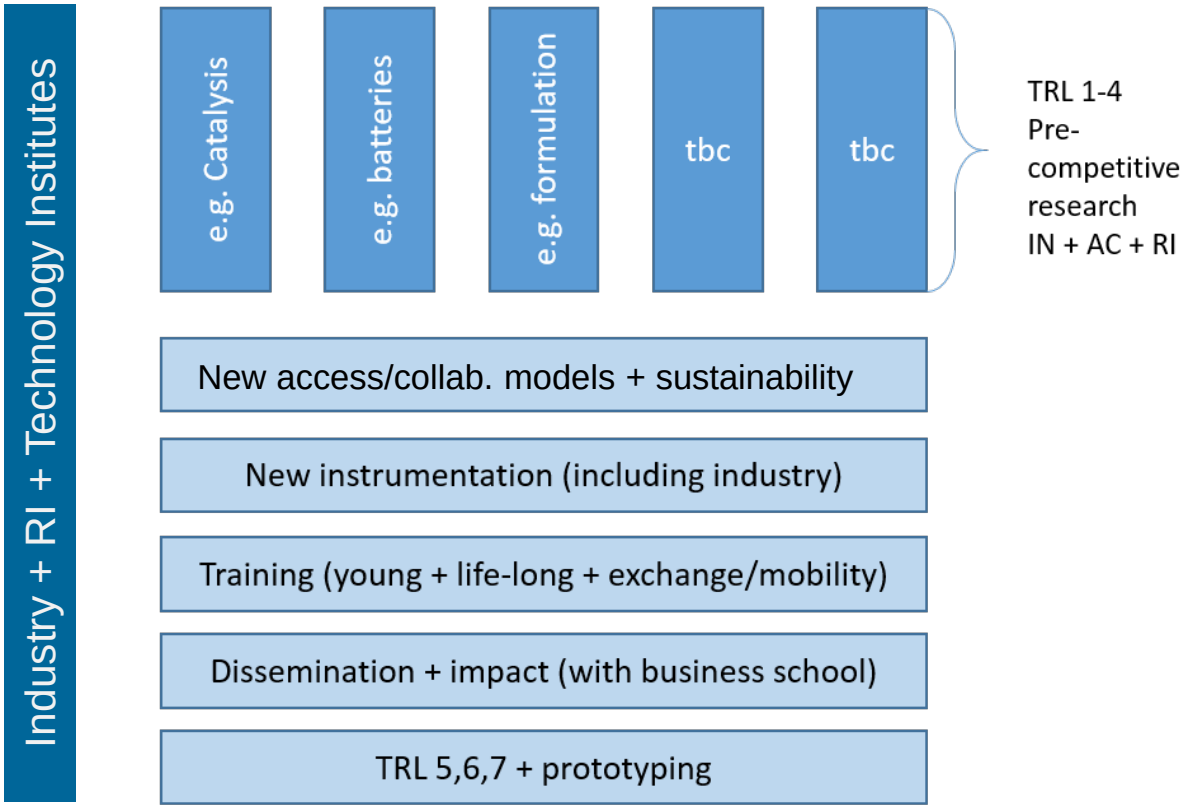
CALIPSOplus: 800k€ over 4 years

1. Industrial Advisory Board
2. White paper on working with industry
3. Focus upon integrating with Regional Innovation/Smart Specialisation Networks
4. SME access pilot

…LARGE-SCALE EU-WIDE ACTION IS NEEDED

An FP9 8-year programme of 100M€ to exploit analytical RIs, driven by industry, for industry?

- ***Scale***
- ***Relevance***
- ***Value***
- ***Integration***
- ***Stakeholders***
- ***Perspective***



Requires preparation in H2020 to build what we could do together.

Thank you for your attention.

ESRF Business Development Office
Grenoble, France

industry@esrf.eu

www.esrf.eu/Industry

mitchell@esrf.eu +33 (0) 476 882 664