Our Mission

Enable superior drug development and patient care decision-making

through model-informed drug development, regulatory science, real world evidence and knowledge integration,

thus optimizing R&D productivity, commercial value and patient outcomes

Therapeutic areas of expertise

Certara’s Capabilities

Mechanistic Modeling
(PBPK and QSP)
QSP Journey at Certara to-date

Certara Acquires Quantitative Systems Pharmacology Consultancy XenologIQ; Professor Piet van der Graaf to Lead New QSP Organization

PRINCETON, NJ – Dec. 1, 2015 – Certara®, the global biosimulation technology-enabled drug development company, today announced that it has acquired XenologIQ, a UK-based quantitative systems pharmacology (QSP) consultancy.

Consulted for ~50 Pharma organisations since 2011

Immuno-Oncology Consortium

Certara Launches Industry-First Quantitative Systems Pharmacology (QSP) Consortium on Immuno-oncology with Leading Pharma Company Members

Consortium will develop a QSP Immuno-oncology Simulator to test combination cancer therapies and different dose regimens and biomarkers in computer-generated, virtual patients

March 13, 2018 08:00 AM Eastern Daylight Time

PRINCETON, N.J.-(BUSINESS WIRE)--Certara®, the global leader in model-informed drug development and regulatory science, today announced the launch of its Quantitative Systems Pharmacology (QSP) Immuno-oncology Simulator Consortium.

"The QSP Immuno-oncology Simulator will allow researchers to explore different therapeutic combinations, even drugs using different modalities, within a virtual population. It will enable sponsors to answer a lot of 'what-if' questions, providing input and guidance for clinical development."

QSP combines computational modeling and experimental methods to examine the mechanistic relationships between a drug, the biological system, and the disease process. QSP integrates quantitative drug data with knowledge of the drug’s mechanism of action. It facilitates the evaluation of complex, heterogeneous diseases such as cancer, immunological, metabolic, and central nervous system diseases that require multiple therapies.

Modelled after Certara's highly successful Simcyp® Consortium, this new QSP Consortium brings together leading biopharmaceutical companies in...
Cambridge-based non-profit. 
Aim: to extract all facts from the published scientific literature and make them Openly available for all.

Advocacy
Community
Tools

getpapers (on EPMC) + AMI: reviewing in minutes…

Peter Murray-Rust, ContentMine Founder 2013; Co-Directors: Jenny Molloy, Cesar Gomez
CM searches & fulltext-indexes
Open literature with WikiData

- 17 million EPMC articles indexed in WikiFactMine

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**Rapid Systematic Reviews**

- Neglected Tropical Diseases (*Wikimedia*)
- Non-communicable disease (*Edinburgh*)
- Co-occurrence obesity and disease

- Gene and species in plants (*Cambridge*)
- Automatic data extraction (tables, graphs)
- Dinosaur name-game for kids!

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**WikiFactMine**

- Quickscrape
- Europe PMC
- Zenodo

- Query "Zika virus"; dictionaries: country virus species
  (100 articles download 2 sec), Dashboard 1 min

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**Link to EPMC**

- EPMC6057622 local
  - United States: x 3
  - United States, x 2
  - Haiti: x 2
  - Switzerland: x 2
  - China: x 2

- ZIKV: x 114
  - Zika: x 149
  - DENV: x 5
  - YFV: x 4
  - West Nile: x 4

- Macaca nemestrina
  - Callithrix jacchus
  - Macaca fascicularis
  - Macaca mulatta
  - Macaca fuscata

- Infected: x 35
evidence: x 30
ZIKV: x 116
review: x 37
systematic: x 23

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**Countries**

- France: Polynesia: x 3
- Switzerland: x 2
- Puerto Rico
- Singapore
- Pakistan

**Virus**

- ZIKV: x 114
- Zika: x 63
- Dengue: x 5
- DENV: x 4
- Chikungunya: x 2

**Species**

- Aedes albopictus: x 4
- Aedes aegypti: x 2
- Aedes aviceargentus
- Streptomyces nananchangensis
- Rosmarinus officinalis

**Word cloud**

- Zika: x 63
cells: x 59
virus: x 32
viral: x 62
ZIKV: x 114
Distributed BIG DATA
Databiology: Biomedical Information Management & Process Orchestration

ANY Biomedical Data

ANY Compute Platform

ANY Application

Configure | Command | Collaborate
Interested?
Come talk to me or get in touch!

Jenni Portman
Tech Lead, Life Sciences Solutions Group
jportman@enthought.com
Global Gene Corp

“We are democratizing genomics to positively disrupt health outcomes for everyone”

EBI SME Forum - Flash Talk

Paul Matthews, Head of Strategic Partnerships

1st November 2018
**GGC Data collection across India**

- Ongoing collection of participants from cities (represented by dots) across all of India

- Analysis of GGC data allows for nationwide insights into allelic architecture, with real implications for impact on health and response to drugs

- Map background coloured using GGC analysis of allele frequency of variant determining response to commonly prescribed immunosuppressant drug
  
  *low frequency (yellow) - high frequency (orange)*

**GGC biobanking, sample storage and DNA extraction facilities**

- Sample storage and DNA extraction in GGC’s CAP certified lab.
- DNA is sequenced in Regeneron’s US facility for this programme

**GGC technology backbone: AI/ML, Secure mobile, and cloud compute**

- Digitized, standardized questionnaire
- Real-time dashboard
  - Facility Utilization Chart
- ggcME app – longitudinal capture

  - Industrialized, detailed medical history with standard ontology
  - Includes clinical, family, ethnicity, environmental and longitudinal data
  - Consent capture
  - Audit-trail for verification

**GGC: Creating a precision medicine system**

- Examples of data types

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*Images: people.cn, Burro, CytelSherp*
Services and tools:
We make use of a number of public services and data sets. They include, but are not limited to:

* Ensembl * EVA * EBI ontology services (OLS, zooma)
* EuropePMC * Open Targets

Challenges:
* Preserving anonymity e.g. if we request info about a specific set of genomic variants to Ensembl's REST service, this can technically be enough to re-identify an individual. So far the solution has been to replicate the services/data on private servers - it would be GREAT if this were made easier e.g. with publicly available and replicable docker images

* Accessing data or software that is restricted to academic use or behind access committees e.g. data sets in EGA that would be hugely valuable to us but not available to commercial companies

* Efficiently combining and using these services with in-house pipelines and software
Who we are...

- Role: Director & Principal Consultant
- Founded: in 2011 after 28 years at Pfizer
- Email: ianharrowconsulting@gmail.com
- Web: http://www.ianharrowconsulting.com
- LinkedIn: https://uk.linkedin.com/in/in/ianharrow
- OrcID: http://orcid.org/0000_0003_0109_0522
What we do...

Two long term projects

- **Project Manager for**
  - 2015 to present (2019 phase 4 planned)

- **Partner for Centre of Excellence**
  - 2015 to present (2021 H2020 funded – but Brexit?)

Visible player Pistoia UXLS and FAIR for Industry, GO-FAIR Rare Disease Implementation Network (industry connection)

Consultancy services (under NDA) – Data analytics for drug discovery

<table>
<thead>
<tr>
<th>Life Science sector</th>
<th>Client examples</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology SMEs</td>
<td>Retrogenix, Silence Therapeutics</td>
<td>2012, 2014</td>
</tr>
<tr>
<td>Analytics vendors</td>
<td>Linguamatics, SciBite, Eagle Genomics, Elsevier RELX</td>
<td>2012 to 2017</td>
</tr>
</tbody>
</table>
I2E Transforms Text into Actionable Insights

Linguamatics transforms unstructured data in healthcare & life sciences into insights to advance human health

Turn text

Into structured data using sophisticated queries

To drive analytics

## Solutions and Applications in Life Sciences

Advanced text analytics delivers value along the pipeline

<table>
<thead>
<tr>
<th>Stage</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-discovery</td>
<td>Gene-disease mapping, Target ID/selection, Toxicity analysis and prediction, Mutation/expression analysis</td>
</tr>
<tr>
<td>Drug discovery</td>
<td>SAR, Biomarker discovery, Drug repurposing, Patent analysis</td>
</tr>
<tr>
<td>Pre-clinical</td>
<td>Trial site selection and study design</td>
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<tr>
<td>Phase I clinical trials</td>
<td>Safety</td>
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<tr>
<td>Phase II clinical trials</td>
<td>Regulatory Submission QC</td>
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<tr>
<td>Phase III clinical trials</td>
<td>IDMP</td>
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<tr>
<td>Regulatory review</td>
<td>Safety, Competitive intelligence</td>
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<tr>
<td>Scale up to manufacture</td>
<td>Pharmacovigilance</td>
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<tr>
<td>Post marketing</td>
<td>HEOR</td>
</tr>
<tr>
<td></td>
<td>Real World Evidence, Comparative Effectiveness</td>
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<tr>
<td></td>
<td>Voice of the Customer analysis, Social media analysis</td>
</tr>
<tr>
<td>Race to patent</td>
<td>Maximise market value</td>
</tr>
<tr>
<td>Race to market</td>
<td></td>
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</tbody>
</table>

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Information Classification: EXTERNAL
NextMove Software Limited
Innovation Centre (Unit 23), Cambridge Science Park

https://www.nextmovesoftware.com/

We develop and sell cheminformatics software solutions to pharmaceutical industry problems.

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John Mayfield, john@nextmovesoftware.com
nextmove software’s products

1. (Patent) Chemical Entity Mining (LeadMine/PatFetch/CaffeineFix)

2. Reaction Informatics/ELN Export (HazELNut/NameRxn/Pistachio)

3. Biologics Informatics/Search (Sugar & Splice)

4. Graph Edit Distance (MCS) Search (SmallWorld/Arthor)

5. ELN Reactive Hazard Alerting (Casandra)

6. Matched Molecular Series (Matsy/StarDrop™)

[0835] To a solution of 2-amino-4,6-dimethoxybenzamide (0.266 g, 1.36 mmol) and L-[5-methylsulfonyl](phenyl-2-yl)benzaldehyde (0.34 g, 1.36 mmol) in N,N-dimethylacetamide (17 mL) was added NaHSO₃ (0.36 g, 2.03 mmol) and p-toluenesulfonic acid monohydrate (0.052 g, 0.271 mmol) at rt. The reaction mixture was heated at 120°C for 12.5 h. After that time the reaction was cooled to rt, concentrated under reduced pressure and diluted with water (20 mL). The precipitated solids were collected by filtration, washed with water and dried. The product was purified by flash column chromatography (silica gel, 95:5 chloroform/methanol) to give 5-picolinylx-2-(5-methylsulfonyl)(phenyl-2-yl)phenylamino-2H-1H-indole monohydrate (0.060 g, 10%) as a light yellow solid: mp 289-290°C; 1H NMR (400 MHz, DMSO-d₆) δ 12.19 (br s, 1H), 8.48 (s, 1H), 8.18 (d, J=7.81 Hz, 1H), 7.90 (d, J=8.20 Hz, 1H), 7.72 (d, J=3.90 Hz, 1H), 7.55-7.64 (m, 2H), 6.77 (d, J=2.34 Hz, 1H), 6.54 (d, J=1.95 Hz, 1H), 3.88 (s, 3H), 3.84 (s, 3H), 2.96 (s, 3H). ESIRF mass m/z 327 [M+H]^+. 
Global recognition as the trusted exchange

• Discover platform is world's largest directory of publicly available genomic data, our user base covers >90 countries.

• National Institutes of Health Data Commons partner - only commercial provider of genomic metadata search and only non-US provider.

• ArrayExpress, EBI metagenomics, EVA, Expression Atlas – API documentation and data hierarchy knowledge. Keep up the good work!
CROs gain customers while protecting their IP.
Reduce the overhead of contracts and legals.

- Cancer Models Beta launched in April 2018 at AACR.

Discover, Understand, Access cancer models (organoids, PDX, cancer cell lines) from global landscape of CROs.

Lowers the barrier to finding and transacting on cancer models.
What we do at SciBite
Convert unstructured text to structured data

SciBite Semantic Platform

VOCabs + TERMite

Text, Documents, Databases

Machine-readable data
• Cambridge University spin-out based on world-leading research of founders Professors Tony Kouzarides and Eric Miska

• Pioneering the modulation of RNA-modifying enzymes (RMEs) to treat cancer
  • Novel small molecule inhibitors of previously untargeted enzymes
  • Several drug discovery programmes, one in lead optimisation phase

• Extensive platform development and research collaborations

• Upcoming conference: RNA epigenetics in human disease
  • 17-20 September 2019, St Catharine’s College, Cambridge
Bioinformatics at STORM Therapeutics

Computational Chemistry

RNA Mass Spectrometry

Knowledge Management

Target Validation
What is covered by BBSRC?
- Living costs
- Travel
- Accommodation

What is not covered by BBSRC?
- Any cost associated with the internship project itself (e.g. materials, access to equipment, etc.)

Thanks!