

# Using data as a strategic asset for research development professionals

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# Agenda

1. Introduction
2. Needs of Research Development (RD) Professionals
3. Solutions for RD Professionals
  - Basic Research
  - Identifying Experts
  - Grant Support
  - Showcasing Experts
4. Conclusion
5. Q&A

# Mission:



- advance the global capacity for and impact of research
- strengthen the practice, and
- strengthen profession of research development

# Needs of Research Development Professionals

- Strategic Planning
- Implementation
- Assessment

**Evidence as  
a strategic  
asset**

**Trusted Information  
+  
Enabling Technologies  
+  
Insightful Experts  
=  
Strategic Decision Support**

# Building evidence for Strategic Decision Support

## Strategic Planning

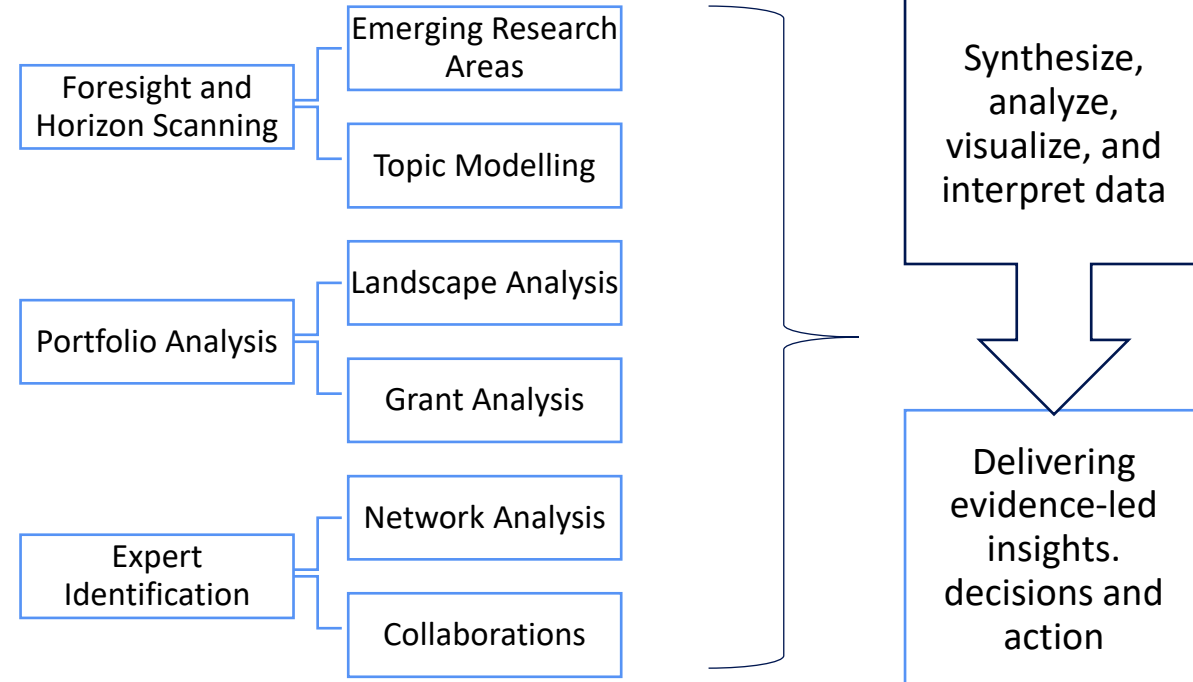
Identifying the questions you want answered

Guiding you through data, sources, and analytical methods

**OVERALL RESEARCH CONTEXT:** How is the research frontier shifting? What are the new and emergent areas? Where are your research development strengths and where and how can you contribute to shaping these trends and the research development frontier?

**YOUR RESEARCH DEVELOPMENT CONTEXT:** What are your investments in research? Do you have the right kind of portfolio? Do you have the right people? What is your research development capacity? How does that overlap with others? How do you optimize potential?

**RESEARCHERS:** Are your researcher strengths aligned with strategic plan? How can you build teams of collaborators to meet your strategic goals?



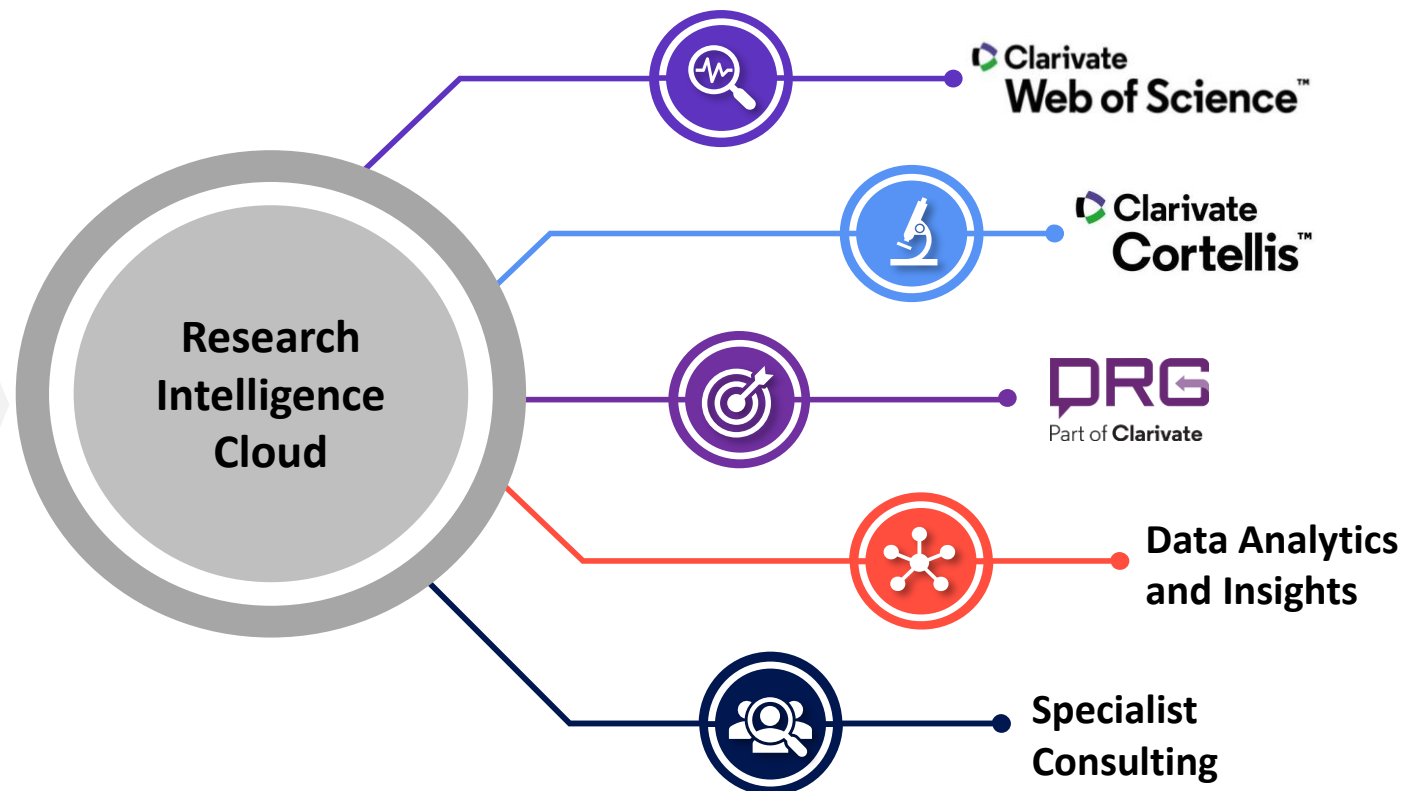
# Solutions for Research Development Professionals



# Research Intelligence Cloud

Improve the researcher experience with the best data and tools

- **1.9B** cited scholarly references
- **2M** molecular interactions
- **34K** academic journals
- **340K** clinical trials
- **32B** unique patient claims and health electronic records
- **1.5M** pharmacology records
- **1.9K** US hospitals' medical device purchase volume data
- **200** global disease and market forecasts
- **200K** regulatory reference documents
- **100%** of US population in enrollment data by coverage type
- **3K** patient segments covered in epidemiology studies
- **73K** pipeline programs
- **80** medical device market overviews
- **270K** variant disease associations
- **19K** US and EU hospitals' diagnosis and procedure data
- **570K** searchable chemistry compounds



Harmonizing millions of datapoints from thousands of sources within a single unified platform, we make it easier for you to access, analyze and apply data-driven insights





# Solutions for R&D Professionals

## Basic Research

- Landscape Analysis
- Horizon Scanning

## Identifying Experts

- Key Opinion Leaders Identification
- Research Fronts

## Grant Support

- Research Capacity
- Funding Analysis

## Showcasing Experts

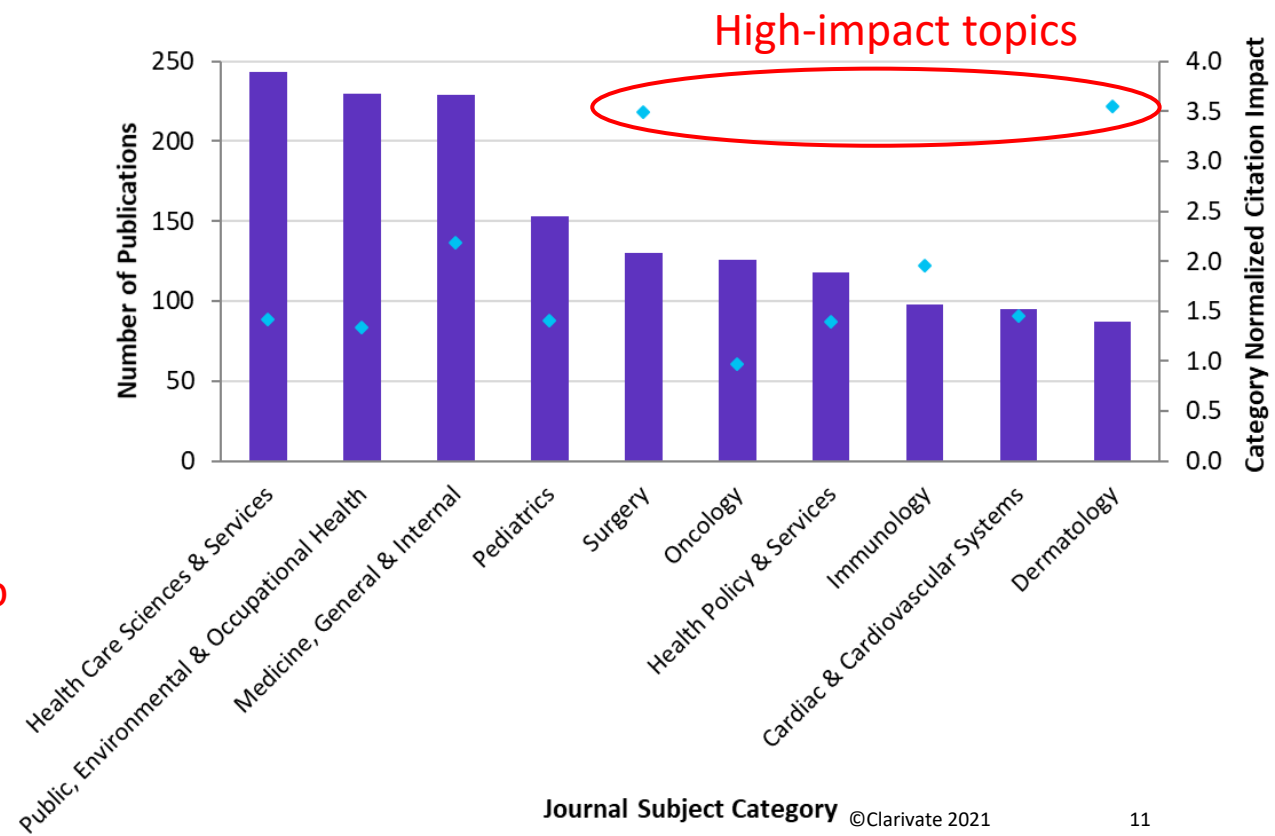
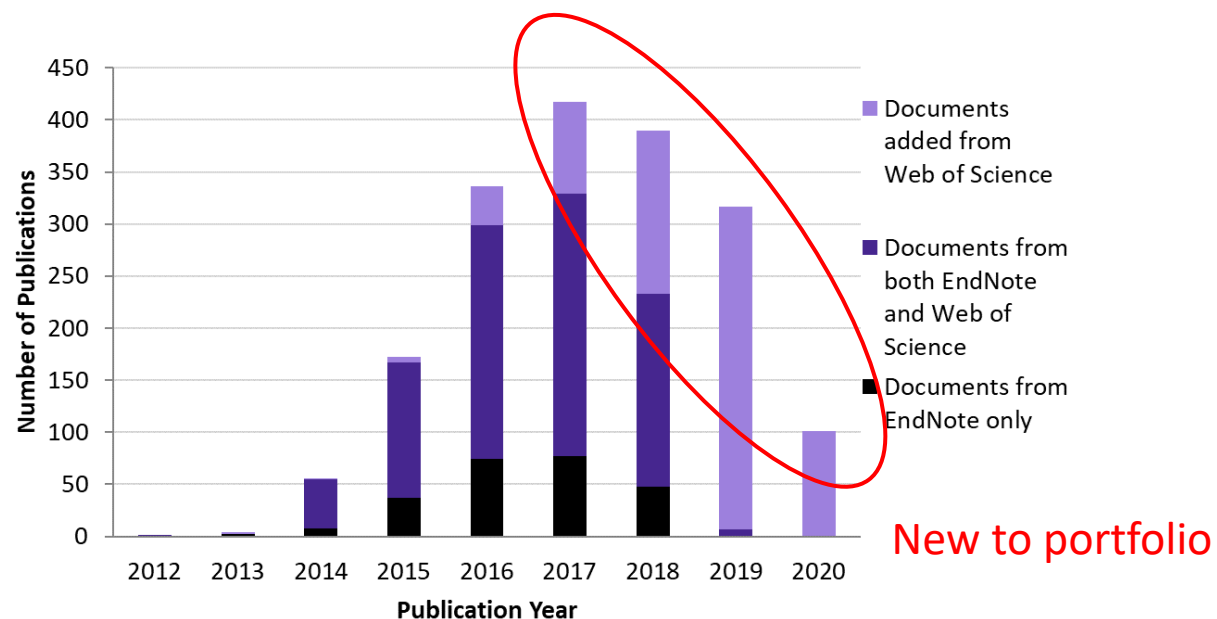
- Dashboards
- Researcher Portal

# Basic Research

# Basic Research – Landscape Analysis

Understand the current research portfolio by subject areas, organizations, etc.

- Specifically identify results per grant award, including searches for organizations and grant number errors.
- Examine subject areas, journals, organizations with respect to impact

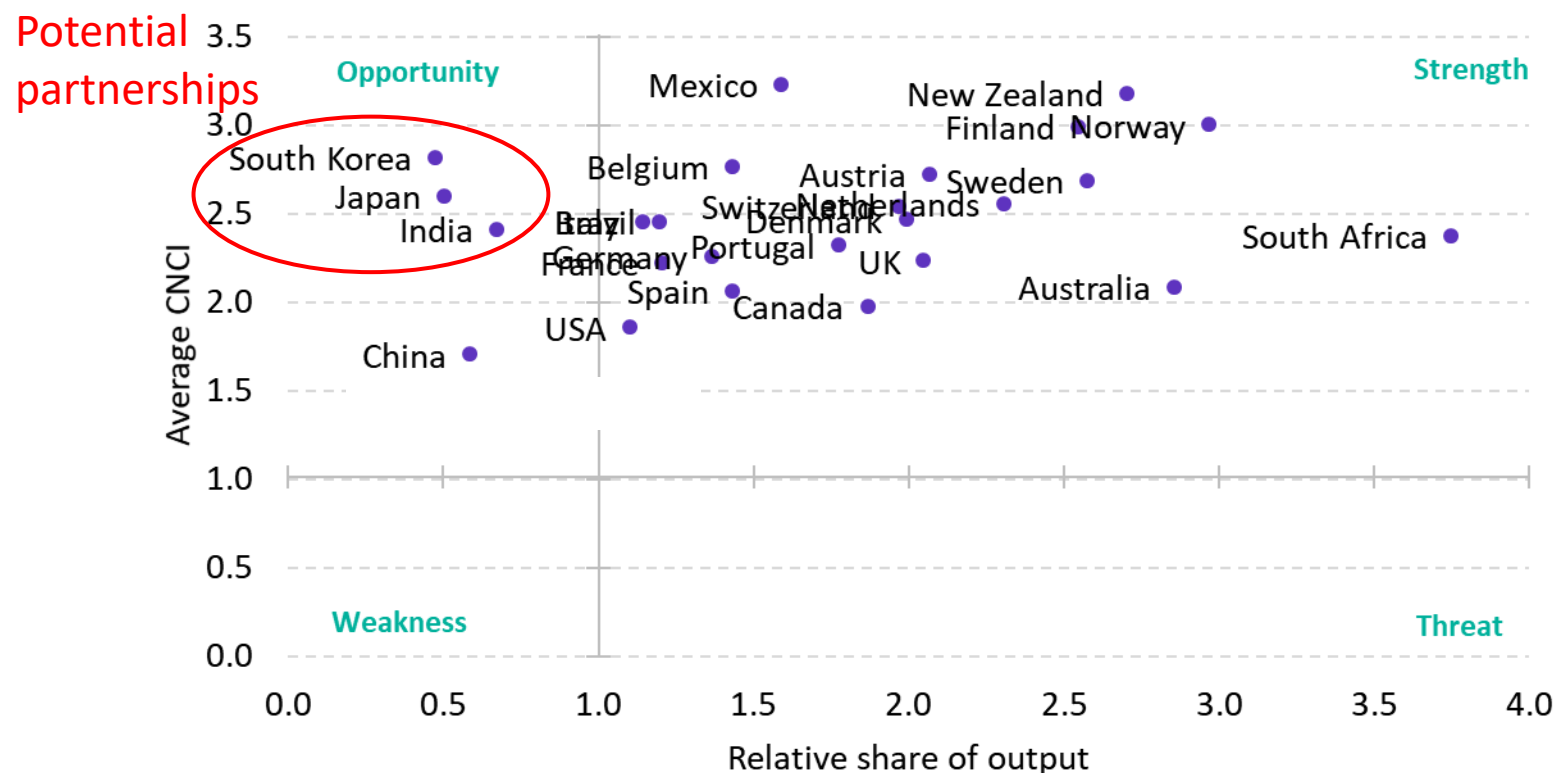


# Basic Research – Horizon Scanning

Discover new research frontiers in disciplines of interest

## Benefits/Challenges

- Understand the research focus on new and novel ideas
- Identify countries, institutions and researchers
- Collaboration Analysis
- Determine the most promising research and how it aligns with organizational mission and capacity



# Derwent Innovation

- Analyze the competitive landscape, to inform R&D spending
- Validate invention novelty
- Monitor new entrants or threats
- Analyze competitors' patent portfolios
- Detect and manage infringement risk

### WO2005105827A2

Add to Work file

Mark record

Watch record

Download

Translate

Highlight

Print

Key summary data

Patent

Dead

DWPI family

Alive

View details

INPADOC family

Alive

View details

Original assignee

PROTEOLIX INC., US

Optimized assignee

AMGEN INC

Jump to

Bibliography

Abstract

Classes/Indexing

Legal status

Family

Publication date

2005-11-10

Expiration date

-

View factors

Remaining life

-

Domain Influence

38.29

Strategic Importance

7.49

Bibliography

DWPI title

New compounds for enzyme inhibition, useful for treating inflammation, muscle wasting

Original Title

COMPOUNDS FOR ENZYME INHIBITION

COMPOSES POUR L'INHIBITION ENZYMATIQUE

English Title

COMPOUNDS FOR ENZYME INHIBITION

Assignee/Applicant

Standardized: PROTEOLIX INC SMYTH MARK S LAIDIG GUY J BORCHARDT RONALD T BUNIN BARRY A CREWS CRAIG M MUSSER JOHN H SCHNEEKLOTH JOHN S JR CHABALA JOHN CLIFFORD

Original: PROTEOLIX INC., 225 Gateway Boulevard, South San Francisco, CA 94080, US

Abstract

DWPI abstract

(US20050245435A1)

Novelty

A compound for enzyme inhibition is new.

Detailed description

A compound having a structure of formula (I), (II), (III), or its salt, Formula (I), or Formula (II), where A=C=O, C=S, or SO<sub>2</sub>, or optionally a covalent bond when adjacent to an occurrence of Z; L=absent or is C=O, C=S, or SO<sub>2</sub>, preferably L is absent or C=O; M=absent or is C<sub>1-12</sub> alkyl; Q=absent or is O, NH, or N-C<sub>1-6</sub> alkyl; Y=absent or is O, NH, N-C<sub>1-6</sub> alkyl, S, SO, SO<sub>2</sub>, CHOR<sup>10</sup>, or CHCO<sub>2</sub>R<sup>10</sup>; Z=O, S, NH, and N-C<sub>1-6</sub> alkyl, or optionally a covalent bond when adjacent to an occurrence of A; R<sup>1-4</sup>=C<sub>1-6</sub> alkyl, C<sub>1-6</sub> hydroxyalkyl, C<sub>1-6</sub> alkoxyalkyl, aryl, or C<sub>1-6</sub> aralkyl, any of which is optionally substituted with one or more of amide, amine, carboxylic acid (or its salt),

Case Activity

Powered by **darts-ip** Part of **Clarivate**

WO2005105827A2 in case history

20

The patent WO2005105827A2 appears in 20 cases.

PLAINTIFF	DEFENDANT	JURISDICTION
-	PROTEOLIX	Brazil
Onyx Therapeutics	Breckenridge Pharmaceutical	United States
Onyx Therapeutics	Cipla (+1 more party)	United States
-	Onyx Therapeutics	India
Onyx Therapeutics	Breckenridge Pharmaceutical	United States

15 more cases on Darts-ip

View cases

PROTEOLIX as plaintiff

0

No cases found

PROTEOLIX as defendant

20

PROTEOLIX appears in 20 cases as the defendant party.

Top inventors

Created 2020-09-10

Inventor	Record count
1. Other	1349
2. Buggy, Joseph J.	56
3. GALMARINI, Carlos Maria	50
4. Loury, David J.	48
5. AVILÉS MARÍN, Pablo Manuel	47
6. GARCÍA FERNÁNDEZ, Luis Francisco	46
7. GUILLÉN NAVARRO, María José	46
8. MONEO OCAÑA, Victoria	46
9. Fyfe, Gwen	46
10. Elias, Laurence	44

1. Other(1349)

2. Buggy, Joseph J.(56)

3. GALMARINI, Carlos Maria(50)

4. Loury, David J.(48)

5. AVILÉS MARÍN, Pablo Manuel(47)

6. GARCÍA FERNÁNDEZ, Luis Francisco(46)

7. GUILLÉN NAVARRO, María José(46)

8. MONEO OCAÑA, Victoria(46)

9. Fyfe, Gwen(46)

10. Elias, Laurence(44)

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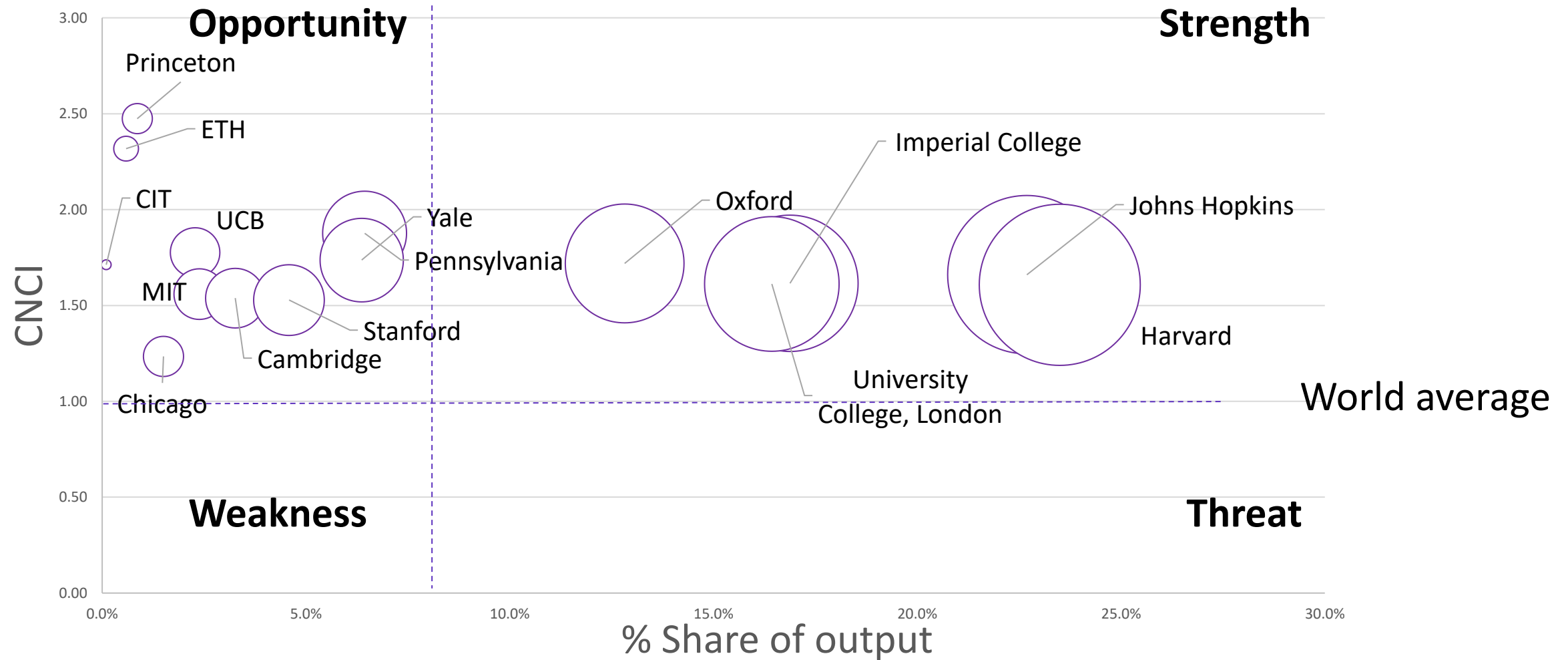
# Identifying Experts

# Analysis

**Strength, Weakness, Opportunity, and Threat, (SWOT) based on a citation index score and percentage share of the total number of publications**

Strength	Top right quadrant represents <b>strength</b> . High cited research impact and relatively high share of research output.	<i>How do we maintain this position of strength?</i>
Weakness	Bottom left quadrant represents <b>weakness</b> . Poor cited research impact and relatively low share of research output.	<i>Do we have the faculty and facilities to address this weakness? Could collaboration help?</i>
Opportunity	Top left quadrant represents <b>opportunity</b> . High cited research impact and relatively low share of research output.	<i>Do we need more researchers? Can we get grants to bolster the research?</i>
Threat	Bottom right quadrant represents <b>threat</b> . Poor cited research impact and relatively high share of research output.	<i>Is the research novel? Can our research get published in more prestigious journals?</i>

# Infectious Diseases SWOT



Bubble Size shows number of Web of Science Documents



# Infectious Diseases: Top researchers

## Top Researchers in the Area of Infectious Diseases From the Top 15 Universities

Name	Rank	Affiliation	Web of Science Documents	% Docs Cited	Times Cited	Category Normalized Citation Impact	Documents in Top 10%	International Collaborations	% International Collaborations	Industry Collaborations	% Industry Collaborations	% All Open Access	Country/Region
Zumla, Alimuddin	1	University College London	116	97.41	2244	2.47	36.00	107.00	92.24	1.00	0.86	81.03	ENGLAND
Day, Nicholas P. J.	2	University of Oxford	92	91.30	1518	2.27	26.00	92.00	100.00	0.00	0.00	98.91	ENGLAND
White, Nicholas J.	3	University of Oxford	86	91.86	1727	3.20	42.00	84.00	97.67	2.00	2.33	97.67	ENGLAND
Nelson, M.	4	Imperial College London	75	18.67	118	0.61	3.00	14.00	18.67	2.00	2.67	10.67	ENGLAND
Dondorp, Arjen M.	5	University of Oxford	73	84.93	826	2.45	25.00	72.00	98.63	1.00	1.37	94.52	ENGLAND
Brown, Todd T.	6	Johns Hopkins University	71	83.10	948	1.21	14.00	14.00	19.72	7.00	9.86	83.10	USA
Fidler, S.	7	Imperial College London	69	14.49	35	2.47	4.00	14.00	20.29	0.00	0.00	27.54	ENGLAND
Nosten, Francois	8	University of Oxford	68	89.71	1410	2.24	24.00	68.00	100.00	5.00	7.35	97.06	ENGLAND
Pillay, Deenan	9	University College London	63	77.78	757	2.49	18.00	57.00	90.48	2.00	3.17	88.89	ENGLAND
Baker, Stephen	10	University of Oxford	62	93.55	812	1.40	17.00	62.00	100.00	1.00	1.61	98.39	ENGLAND
Winston, Alan	11	Imperial College London	61	83.61	525	1.90	11.00	39.00	63.93	2.00	3.28	68.85	ENGLAND
Justice, Amy C.	12	Yale University	60	93.33	1393	2.50	23.00	32.00	53.33	0.00	0.00	88.33	USA
Cosgrove, Sara E.	12	Johns Hopkins University	60	81.67	1730	3.78	26.00	9.00	15.00	1.00	1.67	71.67	USA
Mocroft, Amanda	14	University College London	59	79.66	658	1.30	11.00	59.00	100.00	1.00	1.69	69.49	ENGLAND

*Are they open to collaboration? recruitment? Who are their students? Could they be recruited?*

# Grant Support

# Grant Strategy Analysis

## Challenges:

- Identify strengths, weaknesses, opportunities and threats for existing faculty capabilities
- Understand the important research topics in university disciplines of interest
- Identify the leading institutions in disciplines of interest for benchmarking or recruitment
- Determine successful research areas and identify funding opportunities
- Identify leading talent for faculty recruitments, collaborators, expert advisors, reviewers

## Strategies:

- SWOT analysis of existing faculty and research areas
- Emerging research analysis in targeted topics
- Leading talent and rising stars analysis
- Funding analysis using internal and WOS data
- Collaboration analysis
- Industry collaboration assessment



# Grant Support Strategies

## Challenges:

- Systematic analysis of faculty grant success
- Understanding factors for grant application success
- Profiling researchers who are applying for grant programs
- Identifying faculty strengths in areas of importance to funding agencies
- Data and tools for optimizing university grant applications

## Solutions:

- Identify funding agencies of interest for existing research capacity
- Analyze institutional performance in past funding competitions
- Study funding agency trends to client institution and peers
- Profile past applicants based on institutional and Clarivate data sets
- Model past applications to learn about factors correlated with success

## Evaluation questions (focused treatment) for modelling

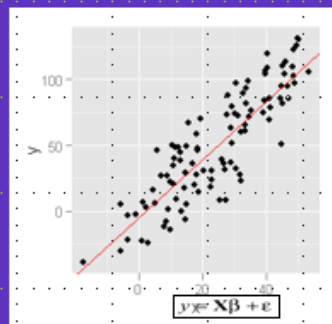
- 1) Are collaborative applications more successful?
- 2) Is there a relationship between the budget available and budget requested?
- 3) Are senior researchers more successful?
- 4) Are highly cited/citation impact researchers more successful?
- 5) Are researchers with more dense/impactful collaboration networks more successful?

Application  
Characteristics

Applicant  
Characteristics

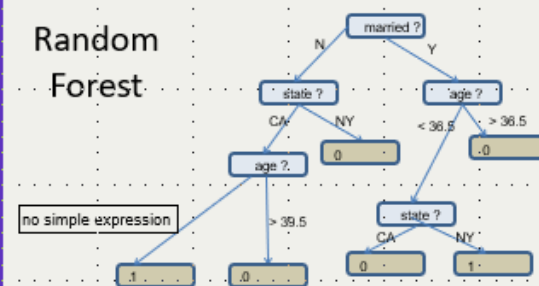
## Modeling Methods Employed

### Linear



Can estimate effects under ideal conditions (all confounders observed)  
Coefficient directly gives change in Y from unit change in X  
Several data assumptions, vulnerable to outliers, dependencies

### Random Forest

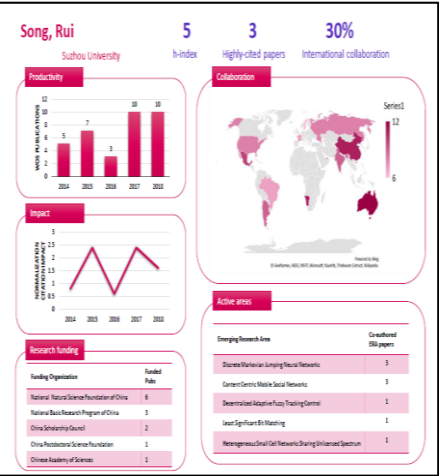


Gives unitless relative importance of input variables as well as predictions  
High tolerance for data anomalies  
Does not directly give effects

# Showcasing Experts

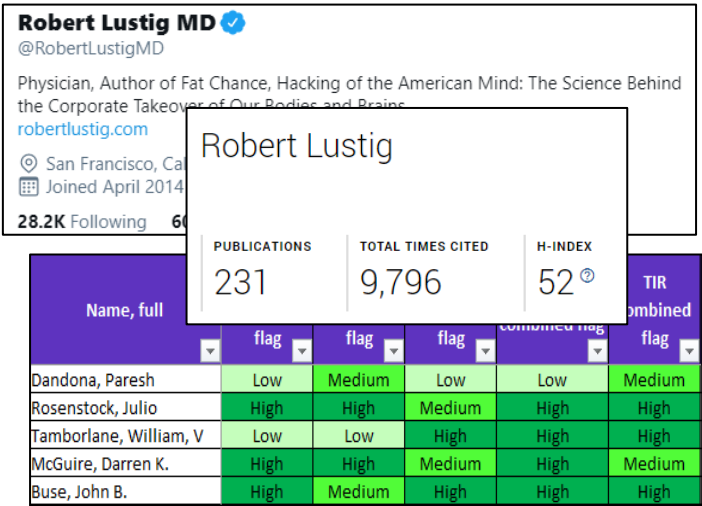
# Dashboards for internal assessment

## Examples of potential dashboards



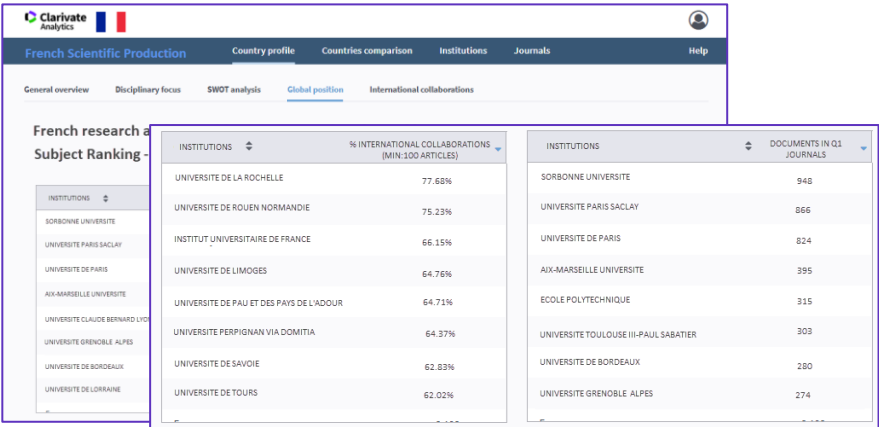
Rising stars

- Identification of “rising star” researchers
  - by region or market (publications, patents, and life science data)
  - productivity, impact, funding, collaborations, co-authors in emerging research areas
- Dashboard with updates
- Search and download data



Grant reviewers

- identify potential grant review panel participants
- Experts in a targeted subject area, previously received specific types of funding, subject to geographical restrictions
- Delivery of analysis on area of expertise, collaborative network, industry and research expertise, grant history, and organizational locations



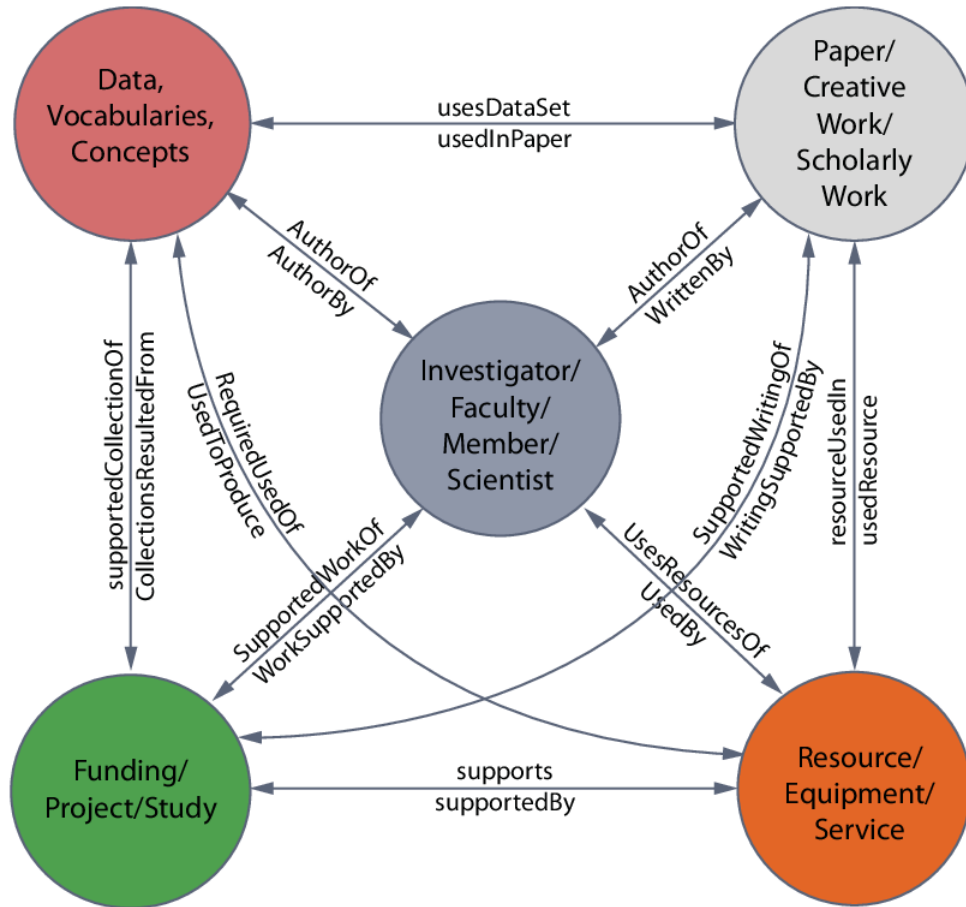
Ranking Dashboards

- Modular, Interactive dashboard for understanding national research performance to support decision making

**FOR INTERNAL  
USE ONLY**

# Dashboard for external assessment

Individuals & activities – data is linked within VIVO to expose relationships



**VIVO is categorized as a semantic web application.**

It not only presents data properties for an individual but creates **object relationships, links to and from the individual and their output/activities.**

Through this model VIVO also provides for valuable network analysis and visualization.

The linked open data can be shared among VIVO sites that choose to collaborate.

# VIVO – organize, visualize, showcase your experts

Establishing and integrating authoritative data on your organization, individuals, and activities is critical

## Internal Sources

- Human Resources information
- Home grown faculty activity systems
- Funding sources

## Clarivate Sources

- Web of Science metadata via API harvesting
- Author Match Service
- Web of Science Times Cited links
- InCites platform: Highly Cited Paper, Open Access flag, and other info

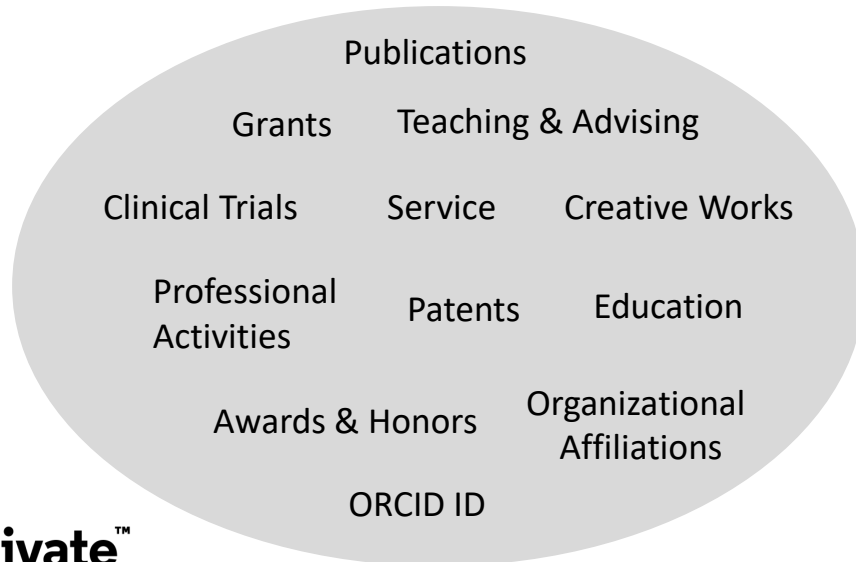
## Third-party Sources

- PubMed
- Proprietary faculty activity systems such as Symplectic Elements and Faculty180

## Clarivate's VIVO services include data integration

The screenshot shows the VIVO website interface. At the top, there's a dark blue header with the VIVO logo and the tagline 'connect • share • discover'. Below the header is a navigation bar with links: Home, People, Organizations, Research, and Events. The main content area is divided into three sections: 'Welcome to VIVO' with a description of the tool, a 'Log in' section with a 'Gatorlink Login' button and a link for 'or VIVO account', and a 'Search VIVO' section with a search bar and a 'Search' button. Below these sections are three columns: 'Research' with a list of publication types and counts (Academic Articles: 72,570, Books: 1,940, Chapters: 398, Conference Papers: 1,319, Edited Books: 4, Reports: 330), 'Faculty' with a list of faculty members (Struckmeyer, Linda R., Melendez, Pedro, Goetten, James Patrick, Chen, Mike Kuang Sing), and 'Departments' with a list of departments (Industrial Engineering, Department of Molecular Biology, Veterinary Medicine, Biological and Agricultural Engineering, Anthropology, Natural History).

Manual data entry options exist for items that may not be available within a data resource.





# VIVO Client Example: Ochsner Health

Highlight expertise and promote collaboration

OchsnerHealth

Home People Organizations Research Areas Publications Capability Map

ScholarlyWork@Ochsner

Find people, data, or research...

People

discovery platform for Ochsner's expertise and scholarly output  
Search information on people, departments, clinical trials, and publications.

Scroll down for more

Filter by

All2,557

Allergy, Asthma, and Immunology7

Anatomic Pathology3

Anesthesiology229

Bariatric Surgery5

Bone and Soft Tissue Tumors (Orthopedic Oncology)2


Cancer Care40

Cancer Surgery6

Cardiology69

Cardiothoracic Surgery9

+ More...



John Cole, MD

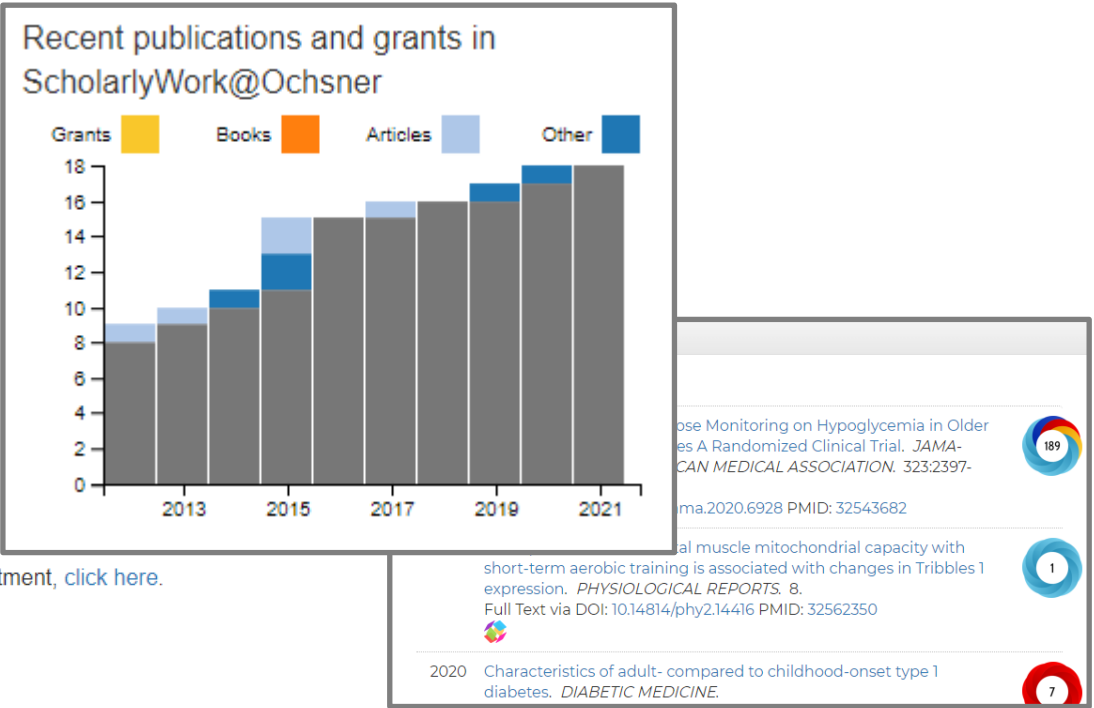
Positions ▾

Sr Physician-Vice Chair, Southshore Region

1514 Jefferson Hwy, New Orleans, LA, 70121

For additional information or to make an appointment, [click here.](#)

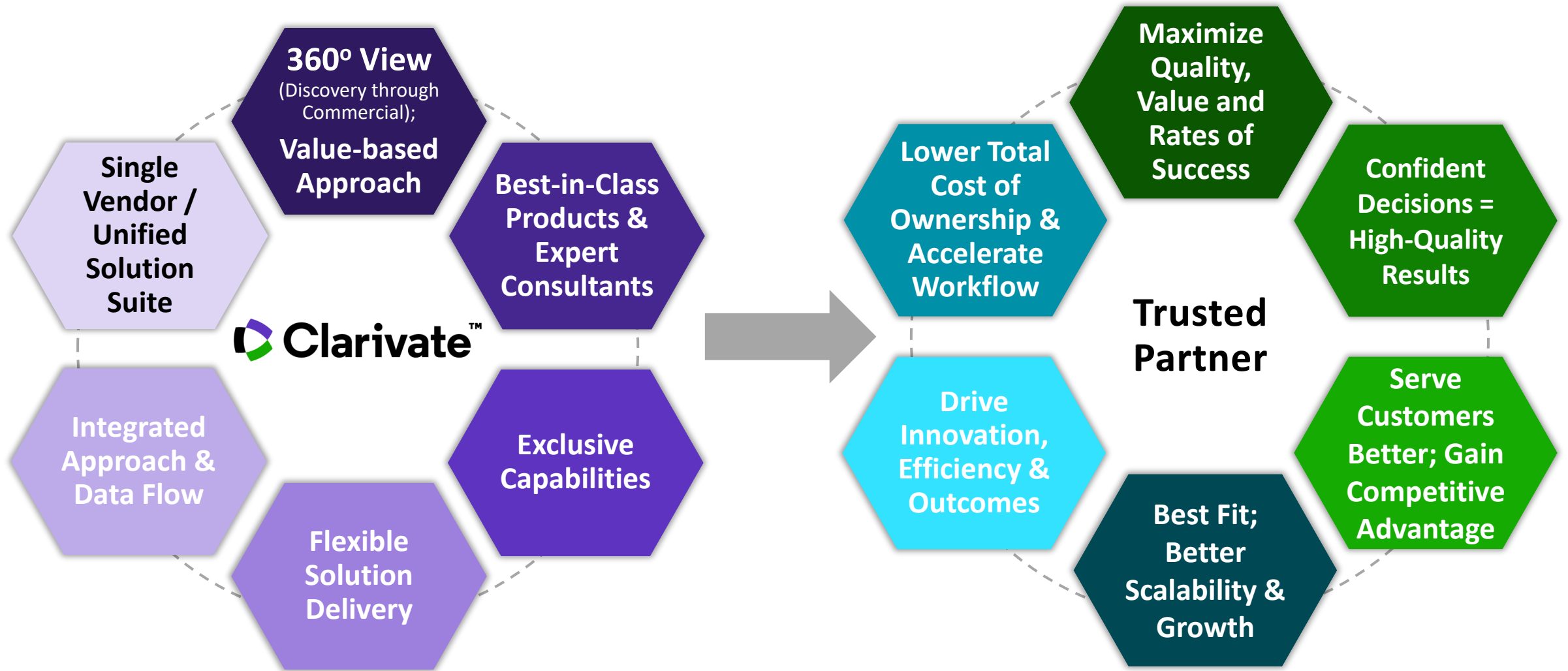
At its core, VIVO is about making the scholarly and research activities of your institution **discoverable** – with the emphasis on **people**, their expertise, activities, and accomplishments.



# Conclusion

# Why Clarivate?

Long-standing global reputation as a trusted Solutions Partner





# Summary

## Strategic Planning

- Establishing institutional research priorities
- Contributing to internal funding competitions and decisions
- Developing hiring plans
- Establishing important collaborations (internal and external)

## Research Assessment and Evaluation

- Evidence-based discussions for planning
- Assessing impact of new initiatives
- Identifying areas of opportunity
- Dashboards

## Research Management Capacity Building

- Technical Assistance
- Workshops
  - Improving grant proposals
  - Enhancing faculty research profiles
  - Understanding university rankings and how citation impact influences ranking position



# Thank you

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