

Tools for Researchers

Microsoft Research & the Scholarly Information Ecosystem

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Directors, Education & Scholarly Communication

Microsoft External Research

Microsoft Corporation

Microsoft[®]
Research



Microsoft[®]
Research



-  **Microsoft Research Labs**
-  **External Research Groups**
-  **Technology Learning Labs**
-  **Collaborative Institutes and Centers**

Microsoft External Research

- Organization within Microsoft Research that engages in strong **partnerships** with academia, industry and government to advance computer science, education, and research in fields that rely heavily upon advanced computing
- Initiatives that focus on the **research process** and its role in the innovation ecosystem, including support for open access, open tools, open technology, and interoperability
- Developers of **advanced technologies** and services to support every stage of the research process



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Mission

Optimize and extend Microsoft software to meet the specific needs of the academic community

Our approach:

Conduct applied projects to enhance academic productivity by evolving Microsoft's scholarly communication offerings

Microsoft External Research is uniquely positioned to drive this initiative across Microsoft

Open Science

Open Access

Open Source

Open Data

“In order to help catalyze and facilitate the growth of advanced CI, a critical component is the adoption of open access policy for data, publications and software.”

**NSF Advisory Committee on
Cyberinfrastructure (ACCI)**

Interoperability by design.

Connecting people, data, and diverse systems.

<http://www.microsoft.com/interop/>

Microsoft Interoperability Principles

- Open Connections to Microsoft Products
- Support for Standards
- Data Portability
- Open Engagement



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 msdn academic alliance

<http://msdn.microsoft.com/en-us/academic/>



<https://www.dreamspark.com/>



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Scholarly Communications: *Projects Overview*

Current or Completed Projects:

- **Cornell** – arXiv.org + Word 2007 (and repository interoperability via SWORD)
- **MIT / Broad Institute** – Authoring (Word 2007) + data for research reproducibility
- **MSR** – CMT++ interoperability with data + metadata transfer/exchange (conference management tool enhancements)
- **LiveLabs** – eJournal publishing online service (community publishing tool)
- **UC San Diego / PLoS** – Semantic mark-up of scholarly articles (+ submission)
- **Chem4Word** with Office & Cambridge University – Create add-in to Word 2007 to facilitate drawing of chemical compounds and equations
- **Johns Hopkins University** – Digital Archive for Astronomy/Astrophysics data (storage, preservation and access)
- **Planets Project / EU** (with MSR – Cambridge) OpenXML and file format preservation + interoperability
- **eChemistry Project (Cornell, Penn State, Indiana, Cambridge, Southampton)** – ORE exemplar: access to compound chemical info objects (cross-repository access to open chemistry data)
- **British Library** – Researcher Information Centre (RIC) online workflow tool for scientists and researchers
- **Creative Commons Add-in for Office 2007** – evolving the Word 2003 effort
- **University of Southampton (UK)** – Port ePrints Repository Software for installation on the Windows platform
- **University of Manchester / “MyExperiment”** Project – social networking for scientists
- **ORE Acceleration Project** (OAI – Object Reuse & Exchange) – Alpha spec development
- **UK National Archives** – Virtual PC / Emulation of legacy systems to facilitate preservation
- **National Library of Medicine / NCBI** – “PubMed Int’l” UK version of PubMed + NLM DTD
- **DRIVER 2 (EU)** – Infrastructure integration of across a network of European research repositories



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Tools for Researchers

Alex D. Wade



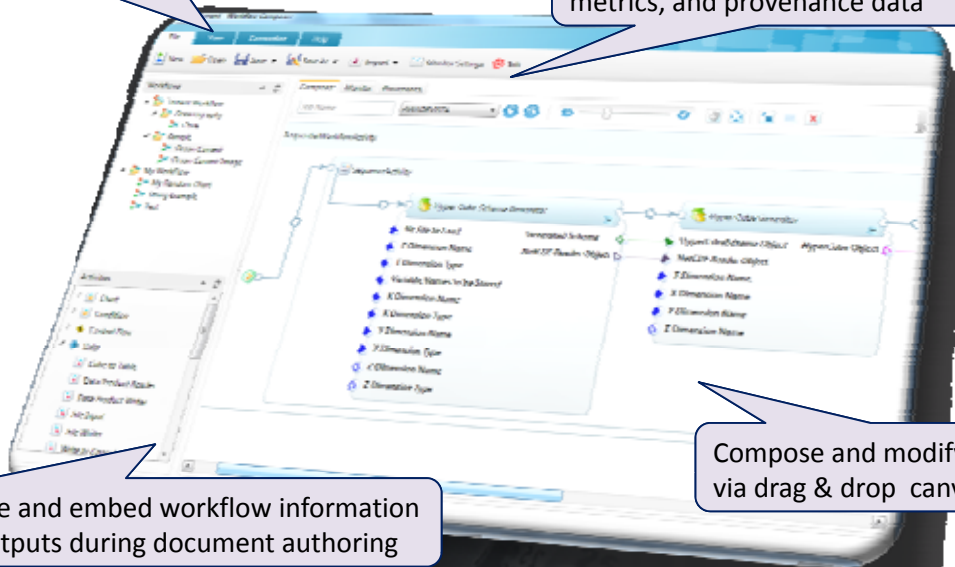
Project Trident: Scientific Workflow Workbench

Author, Execute and Monitor Workflows

View data products, performance metrics, and provenance data

Execute and embed workflow information and outputs during document authoring

Compose and modify workflows via drag & drop canvas



Version 1 available now:

<http://research.microsoft.com/collaboration/tools/trident.aspx>



Research Information Centre (RIC)

Personal site for each researcher and project site for each project

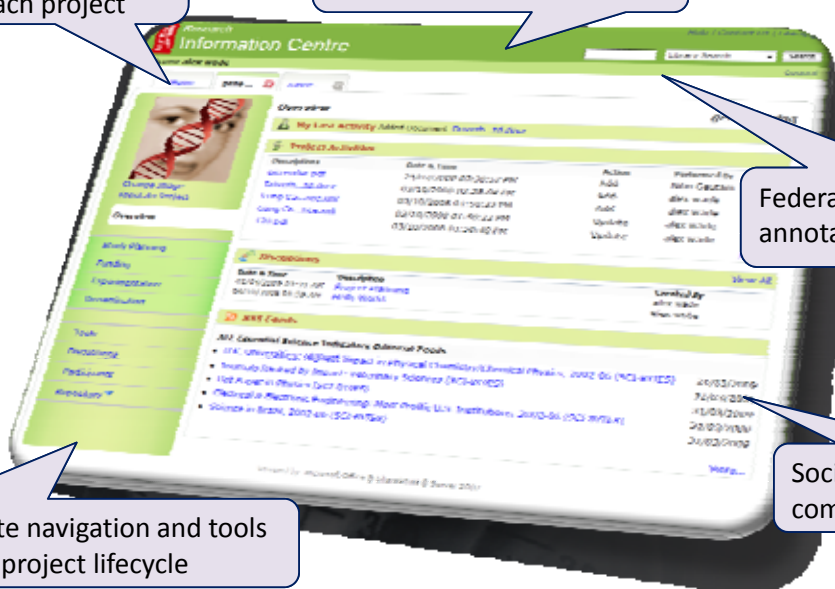
Collaborative environment for researchers

BRITISH LIBRARY

Federated search, co-search, annotations, tags, ratings, etc.

Social networking, real-time communication, blogs, wikis

Project site navigation and tools based on project lifecycle



Beta 2 available now:

<http://research.microsoft.com/ric/>



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RIC Framework – Personal Portal

Projects Overview

Name	Role	Activities	Discussions
Cytokines		ARC_SEC2.doc Added by Jan Holloway	No discussion started
Sharks		This is a document ... Added by Wendy Orpwood	No discussion started
Cancer		No activity performed	No discussion started
Projects		No activity performed	No discussion started

Feedback Alerts

Name	Project	Requested By	Received On	Feedback
ARC_c_roposal	Cytokines	Jan Holloway	6/25/2009 5:45:13 PM	Provide Feedback
ARTHRL_AMPAIGN	Cytokines	Jan Holloway	6/25/2009 5:16:59 PM	Provide Feedback
ARTHRAL_AMPAIGN	Cytokines	Jan Holloway	6/25/2009 5:16:59 PM	Provide Feedback

My Space

References ...
Bookmarks ...
Document Library ...

- ARC_cancer_proposal.docx
- This is a document.doc

Upcoming Events

BBC News | Science & Environment | UK Edition

- Lift off for Nasa's lunar probes
- Flood protection 'needs doubling'
- Firms team up for ISS supply ship
- UK 'must plan' for warmer future
- Mobiles boost Africa climate data



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RIC Framework – Project Portal

Navigation Pane

- Home
- Cytok ...
- Annotation
- Study Planning
- Funding
- Experimentation
- Dissemination
- Tools
- Discussions
- Participants
- Repository

Working Pane

Overview

Request User Submit Request

My Last Activity **There are no items to show in this view.**

Project Activities

Descriptions	Date & Time	Action	Performed By
ARC_SEC2.doc	25/06/2009 16:59:04	Update	Jan Holloway
ARC_SEC2.doc	25/06/2009 16:59:04	Add	Jan Holloway
ARC_CV.doc	25/06/2009 16:59:03	Update	Jan Holloway
ARC_SEC1.doc	25/06/2009 16:59:03	Update	Jan Holloway
ARC_CV.doc	25/06/2009 16:59:03	Add	Jan Holloway

Discussions View All

There are no items to show in this view.

RSS Feeds Manage

Journal of Interferon & Cytokine Research - Table of Contents

- IFN-γ is Induced in Human Peripheral Blood Immune Cells in Vitro by SB01L2 and Mediates its Antitumor Activity in Vivo
- Passive Exposure to Smoke Results in Defective IFN-γ Production by Adenoids in Children With Recurrent Respiratory Infections
- Identification of a Putative Invertebrate Helical Cytokine Similar to the CNTFLIF Family by PSI-BLAST-Based Approach
- IFN-α Conditioned Sensitivity to an Anti-EGFR Monoclonal Antibody in a Human Lung Cancer Cell Line With Intermediate Expression of the Receptor
- Protective Effect of New Nitrosolithols on the Early Inflammatory Response to Kidney Ischemia/Reperfusion and Transplantation in Rats



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RIC Framework – Project Portal

Navigation Pane

Working Pane

Overview

Request User Submit Request

My Last Activity There are no items to show in this view.

Project Activities

Descriptions	Date & Time	Action	Performed By
RssFeed...ice.zip	04/09/2009 11:41:13	Delete	Vinod B
RssFeed...ice.zip	04/09/2009 11:41:05	Add	Vinod B

Discussions View All

Select a Project :

September 2009 Expand All Collapse All | 1 Day 7 Week 31 Month

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27

Project Phases

Project Links

Repository

Annotation

Study Planning

Funding

Dissemination

Tools

Discussions

Participants

Repository

- Project Library
- Bookmarks
- References
- Project Proposals
- RSS Feeds
- Saved Queries
- Slide Library

Phy

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RIC Framework – Site Templates

Project Site Templates - Windows Internet Explorer

http://admin.ric-local.redmond.corp.microsoft.com:8210/lists/Project%20Site%20Templates/AllItems.aspx?Select

admin.ric-local.redmond.corp.microsoft.com

Title	Display Name	Description	Path	Navigation Area	Site Type
Overview	Overview	Project Site main page	default.aspx	Project Phases	Project Phases
Study Plan	Study Planning	Study Planning page	idea.aspx	Project Phases	Project Phases
Funding	Funding	Funding overview page	fundingoverview.aspx	Project Phases	Project Phases
Dissemination	Dissemination	Dissemination page	disseminate.aspx	Project Phases	Project Phases
Tools	Tools	Tools page	/_layouts/RICPages/ProjectTools.aspx	Project Links	Project Links
Discussions	Discussions	Discussions overview	/_layouts/RICPages/forum.aspx	Project Links	Project Links
Participants	Participants	Participants overview	/_layouts/RICPages/contact.aspx	Project Links	Project Links
Project Library	Project Library	Project Document Library	/_layouts/ricpages/viewprojectdocumentlibrary.aspx	Repository	Repository
Bookmarks	Bookmarks	Bookmarks	/_layouts/RICPages/ViewProjectLinksDefault.aspx	Repository	Repository
References	References	References	/_layouts/RICPages/ViewProjectLinksDefault.aspx	Repository	Repository
Project Proposals	Project Proposals	Project Proposals	/_layouts/RICPages/ViewProjectDocumentLibrary.aspx	Repository	Repository
RSS Feeds	RSS Feeds	RSS Feeds	/_layouts/RICPages/ViewProjectDocumentLibrary.aspx	Repository	Repository
Saved Queries	Saved Queries	Saved Queries	/_layouts/RICPages/ViewProjectDocumentLibrary.aspx	Repository	Repository
Slide Library	Slide Library	Slide Library	/_layouts/RICPages/ViewProjectDocumentLibrary.aspx	Repository	Repository

Items

Count

Count

the page names in the table are placed on the portals navigation pane and the names of the various pages.

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RIC Framework – Project Site Administration

Project maintenance page: allows the RIC Framework administrator to create, export and delete projects.

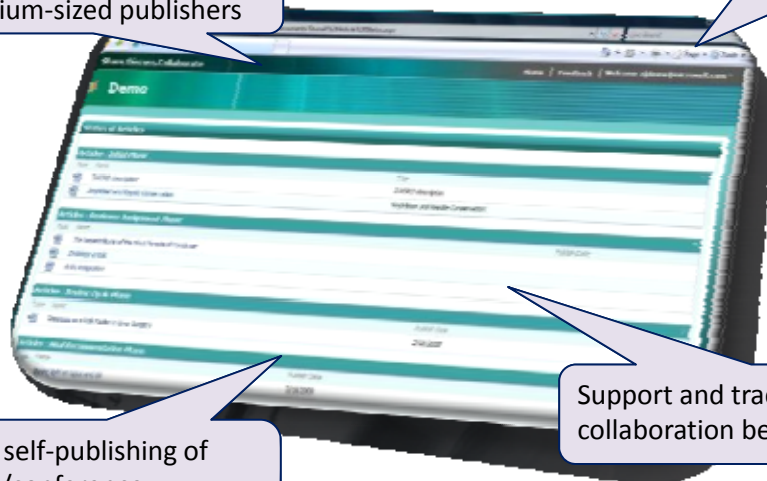
Project Owner	Date
Eio	9/25/2009 11:26:51 AM
Oscar Naim	9/25/2009 11:21:23 AM
Genome	9/25/2009 11:53:28 AM
Ithy	9/25/2009 12:41:33 PM
RIC	9/25/2009 1:02:13 PM



eJournal Editorial Workbench Module for the Research Information Centre

Targeted at scholarly societies and small to medium-sized publishers

Editorial and peer review management tool



Simplifies self-publishing of workshop/conference proceedings and small journals

Support and tracks online collaboration between authors



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<http://research.microsoft.com/ejournal/>



Creative Commons Add-in for Office 2007

CREATING RESEARCHER VALUE TO SOLVING PROBLEMS

Intent: Insert Creative Commons licenses from within Office 2007



Services: Integrates with Creative Commons Web.API to create new licenses



Relationships: license information stored as RDF XML within the document OOXML



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Source code and binary:

<http://ccaddin2007.codeplex.com>



Ontology Add-in for Word 2007

CREATING RESEARCHER VALUE TO SOLVING PROBLEMS



• John Wilbanks

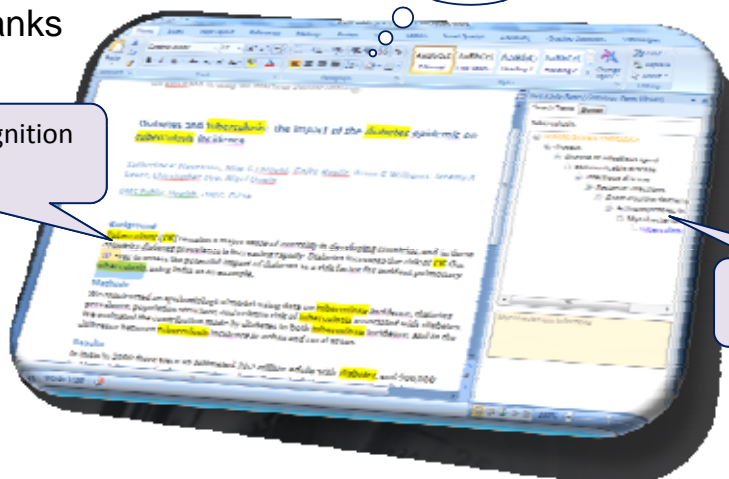
Services: Ontology download web service



University of California San Diego

- Phil Bourne
- Lynn Fink

Intent: Term recognition & disambiguation



Relationships: Ontology browser



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Source code and binary:

<http://research.microsoft.com/ontology/>



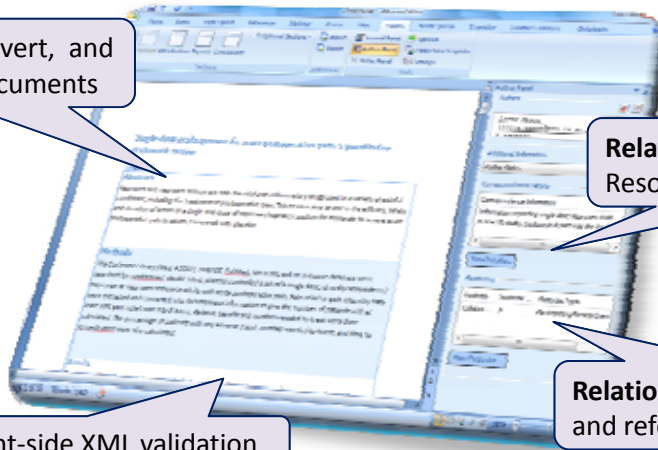
Article Authoring Add-in for Word 2007



Services: repository deposit via SWORD



Structure: Read, convert, and author NLM XML documents



Relationships: ORE Resource Map creation



Structure: Client-side XML validation

Relationships: Citation lookup and reference management



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Binary (version 2.0):

<http://research.microsoft.com/authoring/>



Document3 - Microsoft Word

Home Insert Page Layout References Mailings Review View Addins Insert Special Chemistry Creative Commons Ontologies

Optional Sections

Title Abstract Introduction Reports Conclusions

Sections

References Tools

Journal Panel Author Panel Notes Panel Upload Apply New Template Settings

Author Panel

Authors

Lorna Mason (lorna.mason@pru.ox.ac.uk); Jayne

Additional Information

Author Notes

CorrespondenceDetails

Correspondence Information

Information regarding single dose Naproxen trials

In one US study, postsurgical pain was the leading...

New Details...

Footnotes

Footnote	Footnote ...	Footnote Type
Collabor...	a	Participating-Researchers

New Footnote ...

Page: 1 of 10 Words: 3,912 90%

Chem4Word - Chemistry Drawing in Word



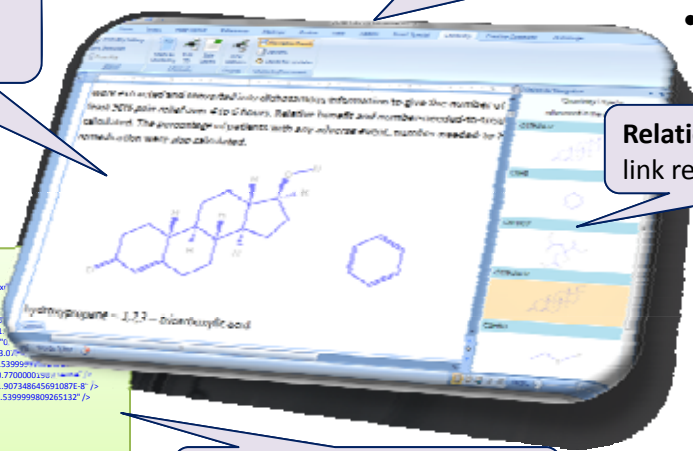
- Peter Murray-Rust
- Joe Townsend
- Jim Downing

Author/edit 1D and 2D chemistry.
Change chemical layout styles.

Intent: Recognizes chemical dictionary and ontology terms

Data: Semantics stored in Chemical Markup Language

Relationships: Navigate and link referenced chemistry



```
<?xml version="1.0" ?>
<cmml version="3" conventions="org-synth-report" xmlns="http://www.wiley.com/cmml" >
<molecule id="m1">
<atomArray>
<atom id="a1" elementType="C" x2="-2.9149999618530273" y2="0" />
<atom id="a2" elementType="C" x2="-1.5813208400249916" y2="1" />
<atom id="a3" elementType="O" x2="-0.24764171819695613" y2="0" />
<atom id="a4" elementType="O" x2="-1.5813208400249916" y2="3.0" />
<atom id="a5" elementType="H" x2="-4.248679083681063" y2="-1.539959911111111" />
<atom id="a6" elementType="H" x2="-2.914999961853028" y2="-0.770000000000000" />
<atom id="a7" elementType="H" x2="-4.248679083681063" y2="-1.9073486455010876" />
<atom id="a8" elementType="H" x2="1.0860374036310796" y2="-1.539959909265132" />
</atomArray>
<bondArray>
<bond atomRef2="a1 a2" order="1" />
<bond atomRef2="a2 a3" order="1" />
<bond atomRef2="a2 a4" order="2" />
<bond atomRef2="a1 a5" order="1" />
<bond atomRef2="a1 a6" order="1" />
<bond atomRef2="a1 a7" order="1" />
<bond atomRef2="a3 a8" order="1" />
</bondArray>
</molecule>
</cmml>
```

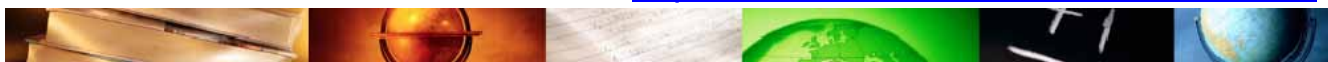
Intelligence: Verifies validity of authored chemistry

Available soon:



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<http://research.microsoft.com/chem4word/>



GenePattern Reproducible Research Add-in

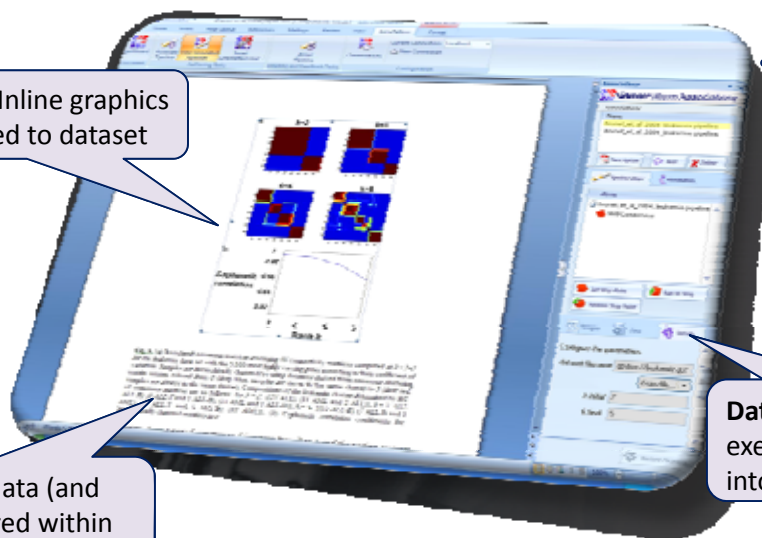


Services: Connects to GenePattern database

Relationships: Inline graphics are synchronized to dataset

Data: Resulting data (and provenance) stored within Word document

Data: Control and execute query pipelines into GenePattern



Source code and binary:



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<http://GenepatternWordAddin.codeplex.com>



Zentity – a Research Output Repository Platform

Default web UI with CSS support and custom ASP.Net controls

Native support for RSS, OAI-PMH, OAI-ORE, AtomPub and SWORD



Flexible data model enables many scenarios and can be easily extended over time

A semantic computing platform to store and expose relationships between digital assets

Version 1 available now:

<http://research.microsoft.com/zentity/>



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Zentity – a Research Output Repository Platform

Quick

- Easy to install
- 'Scholarly Works' data model
 - Authors, Papers, Data, Videos, Code, Lectures, Books, etc.
- Default Web UI

Extensible

- UI Toolkit
- Intuitive programming experience
- Extensible Data Model (entities, relationships)
- RDFs for new data models

Interoperable

- BibTeX Import
- RSS/Atom Syndication
- METS support
- OAI-PMH Provider
- OAI-ORE
- Simple Search API
- Atom Publishing Protocol
- SWORD

Free & Open

- Freely available
- Based on open standards
- SQL Server and Developer tools available via Dreamspark



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How to engage with Microsoft External Research

- Tell us more about your projects, your workflows, your issues. We're *always* in “requirements gathering mode”
 - Email us directly at scholar@microsoft.com with questions and ideas
 - Especially if you are already utilizing Microsoft technologies
- Download our add-ins and try them, and then *give us feedback!*
 - Let us know if we can facilitate a connection with the appropriate product group(s)
- Follow announcements via our [RSS feed](#) or via our [Facebook group](#)

Stop by our booth for demos



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Thank you

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URL – <http://www.microsoft.com/scholarlycomm/>

Microsoft®
Research



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Microsoft Translator

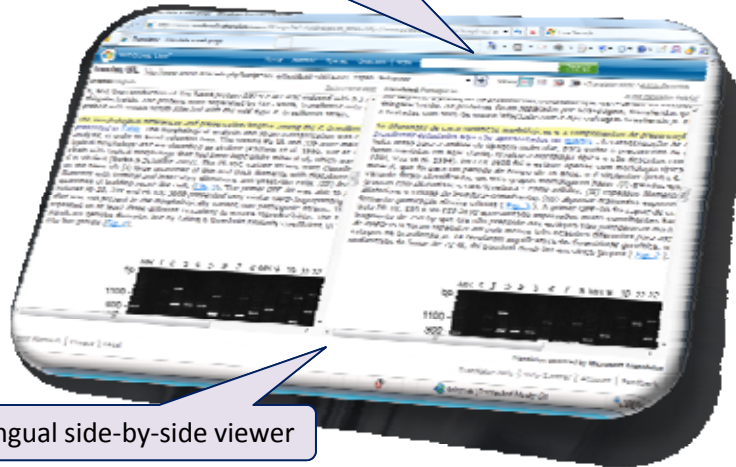
Microsoft Translator



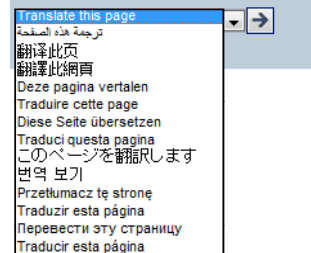
Query-time translation

Embeddable widget

Bilingual side-by-side viewer



Your viewers will see this



<http://www.microsofttranslator.com/AddIn.aspx>

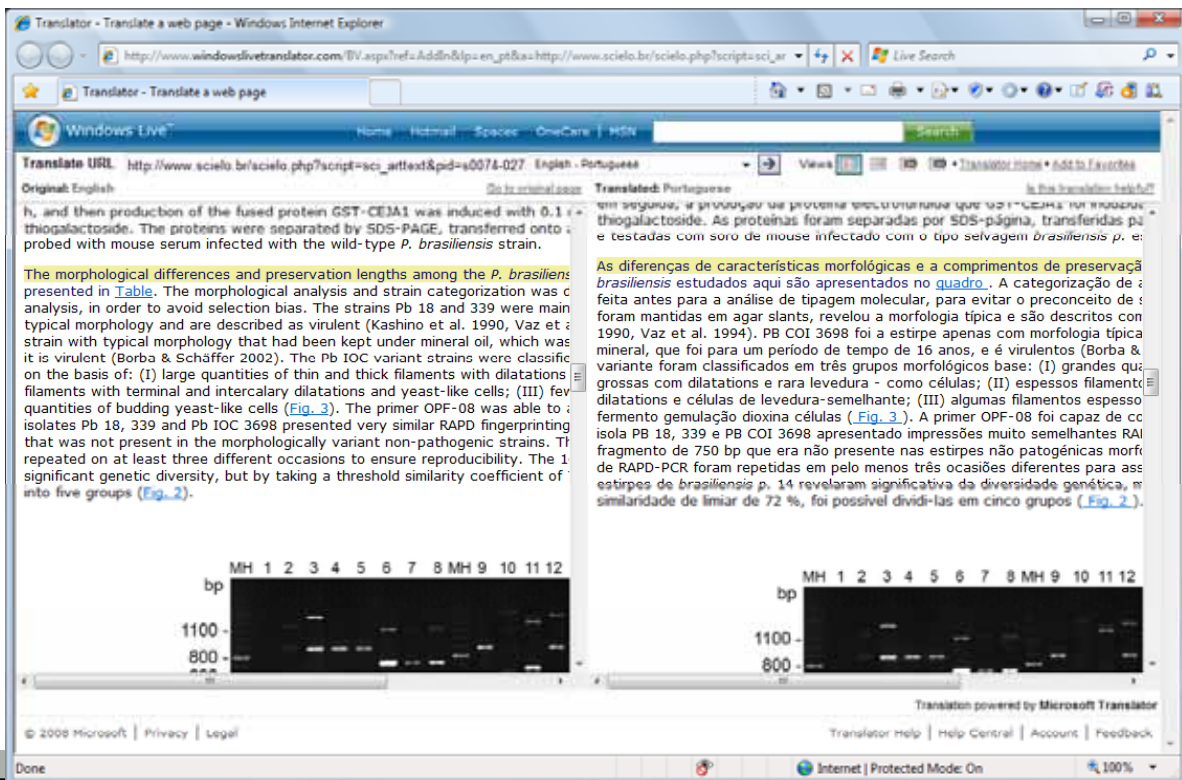
<http://www.microsofttranslator.com/dev/ajax/>



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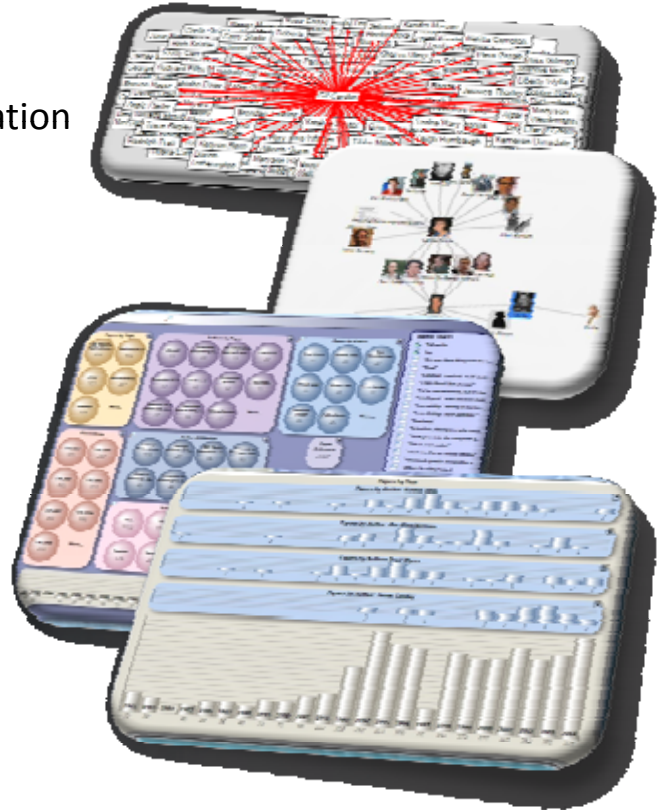


Bing Translator Bilingual Viewer



Discovery & Visualization Tools

- **NodeXL**
 - Network visualization & exploration for Excel
 - <http://nodexl.codeplex.com>
- **Gazer**
 - Silverlight Control for graphical network browsing
- **FacetLens**
 - WPF control for faceted browsing
 - <http://research.microsoft.com/cue/facelens/>



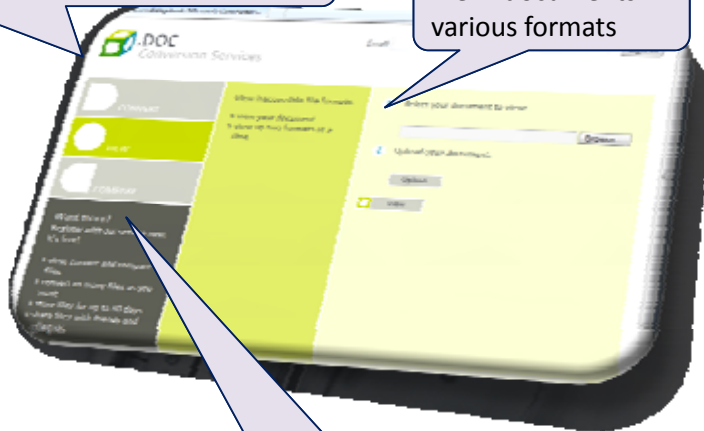
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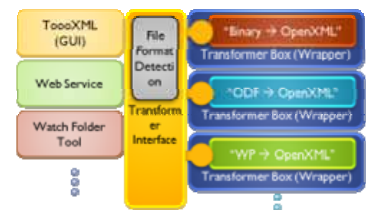
Document Conversion Service

Convert to and from Word, ODF, Word Perfect, RichText, and UOF

View documents in various formats



Compare original and converted documents



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<http://odf-converter.sourceforge.net/>

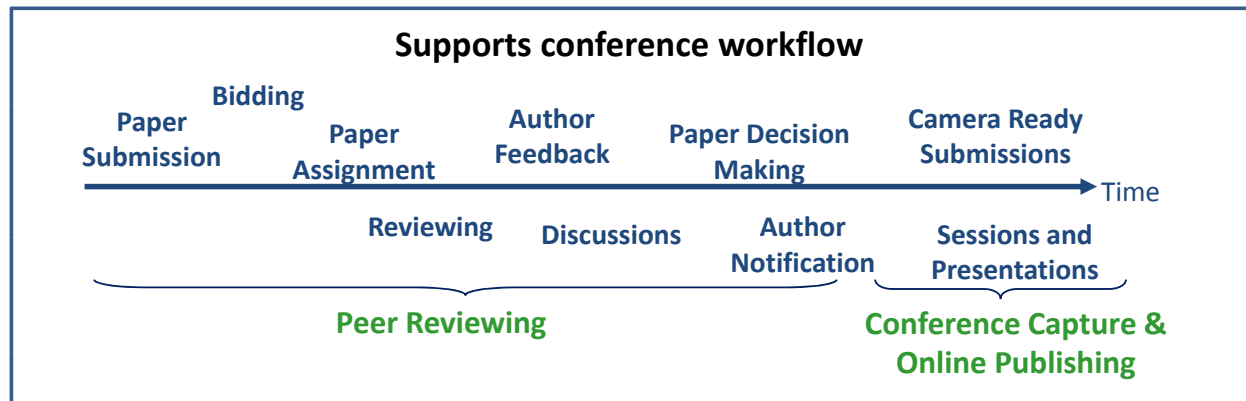


Conference Management Tool (CMT)
Service for Academic Conference Management
<http://cmt.research.microsoft.com>

- **Web service for managing academic conference workflows**
 - A no-cost hosted service sponsored by MSR since 1999

Includes features/functionality:

- Peer-reviewing of academic conferences/workshops
- Conference capture and online publishing
- Interoperability with other scholarly publication services (SWORD compliant)
 - arXiv.org, eJournal, etc.



Questions?

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URL – <http://www.microsoft.com/scholarlycomm/>

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Your potential. Our passion.™



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