

ORCID

Connecting Research
and Researchers

Patricia Hartman

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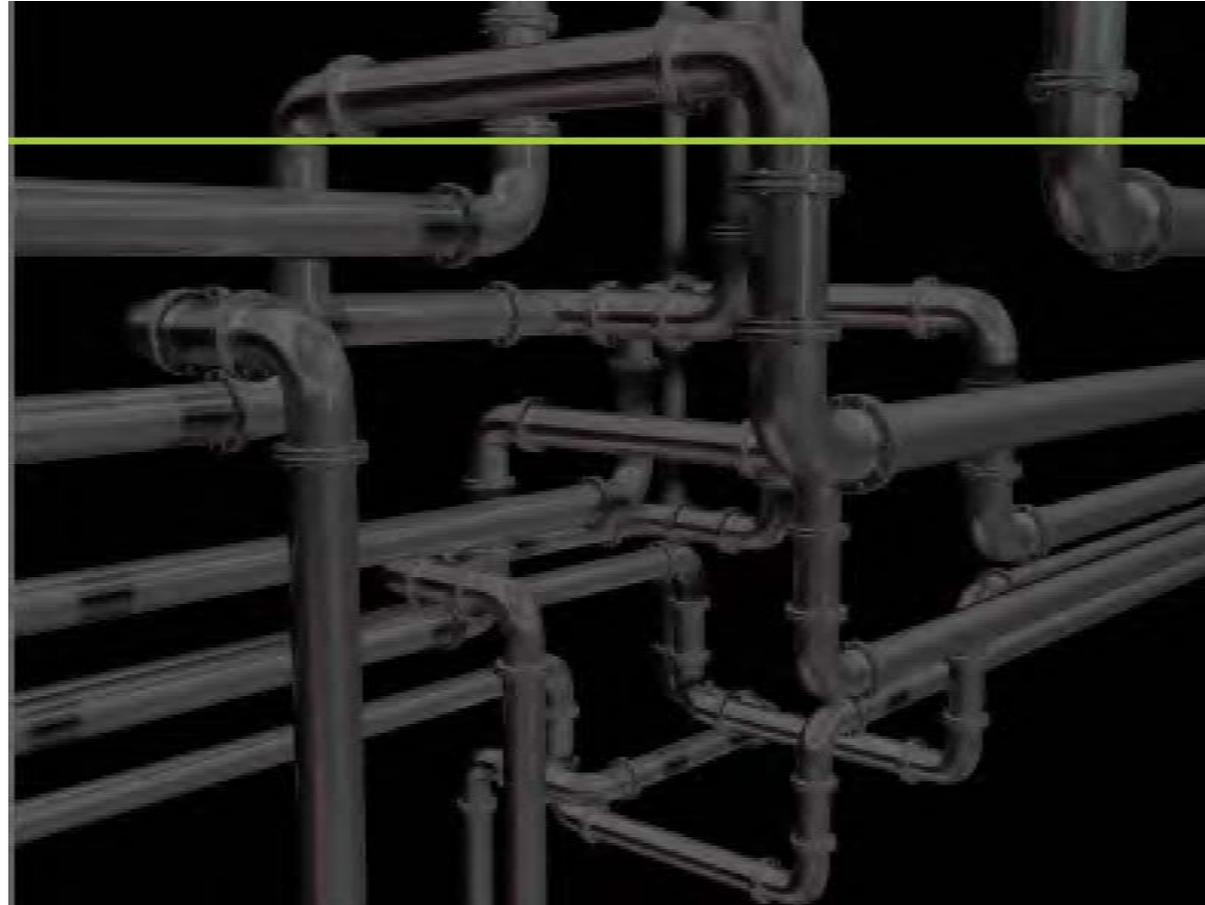
Biological Sciences, Forestry & Wildlife, Mathematics Librarian

What Is ORCID?



- Registry of unique persistent identifiers for researchers
- Open non-profit organization
- Hub enabling *machine-readable* connections between researchers, research organizations, granting agencies, publishers

Plumbing for scholarly communication infrastructure



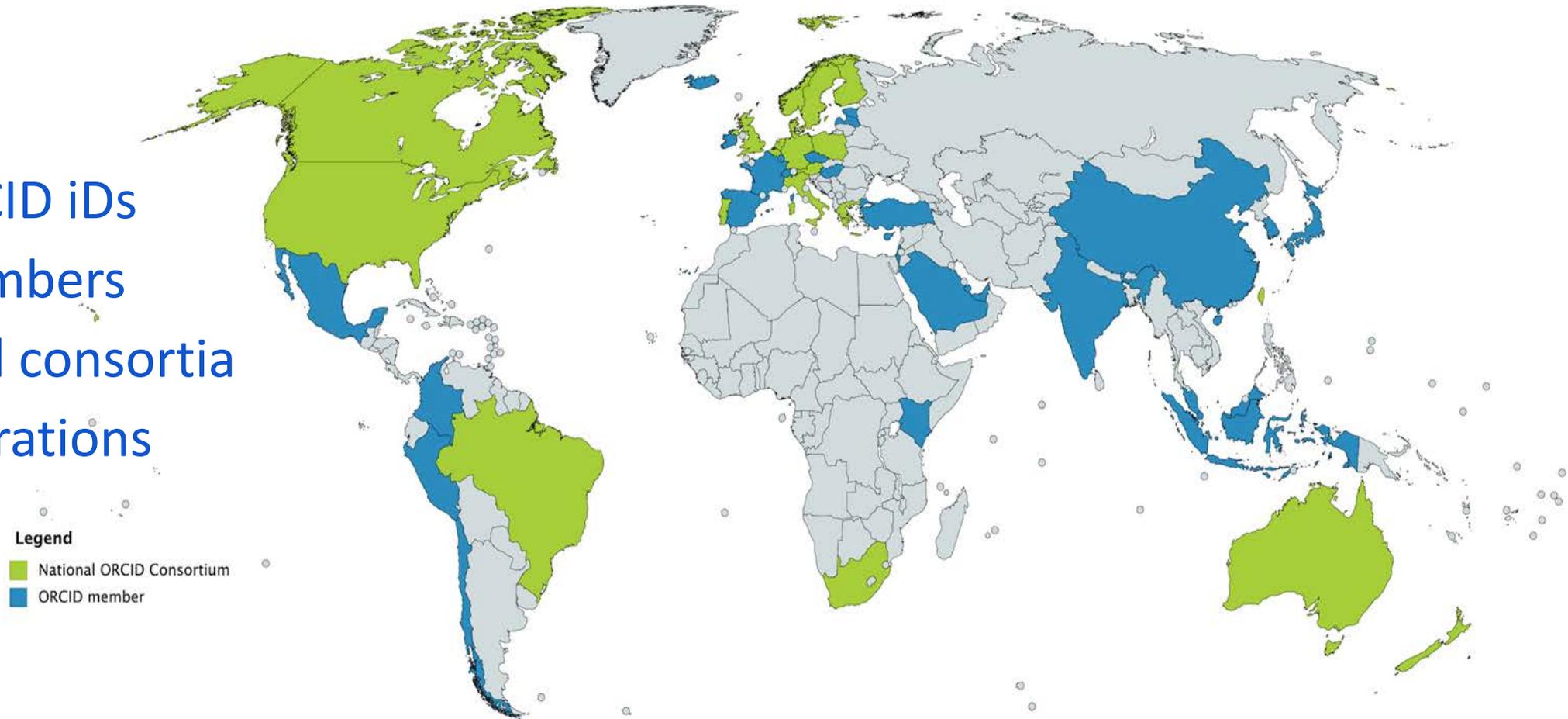
ORCID's VISION

“A world where all who participate in research, scholarship, and innovation are uniquely identified and connected to their contributions across disciplines, borders, and time.”

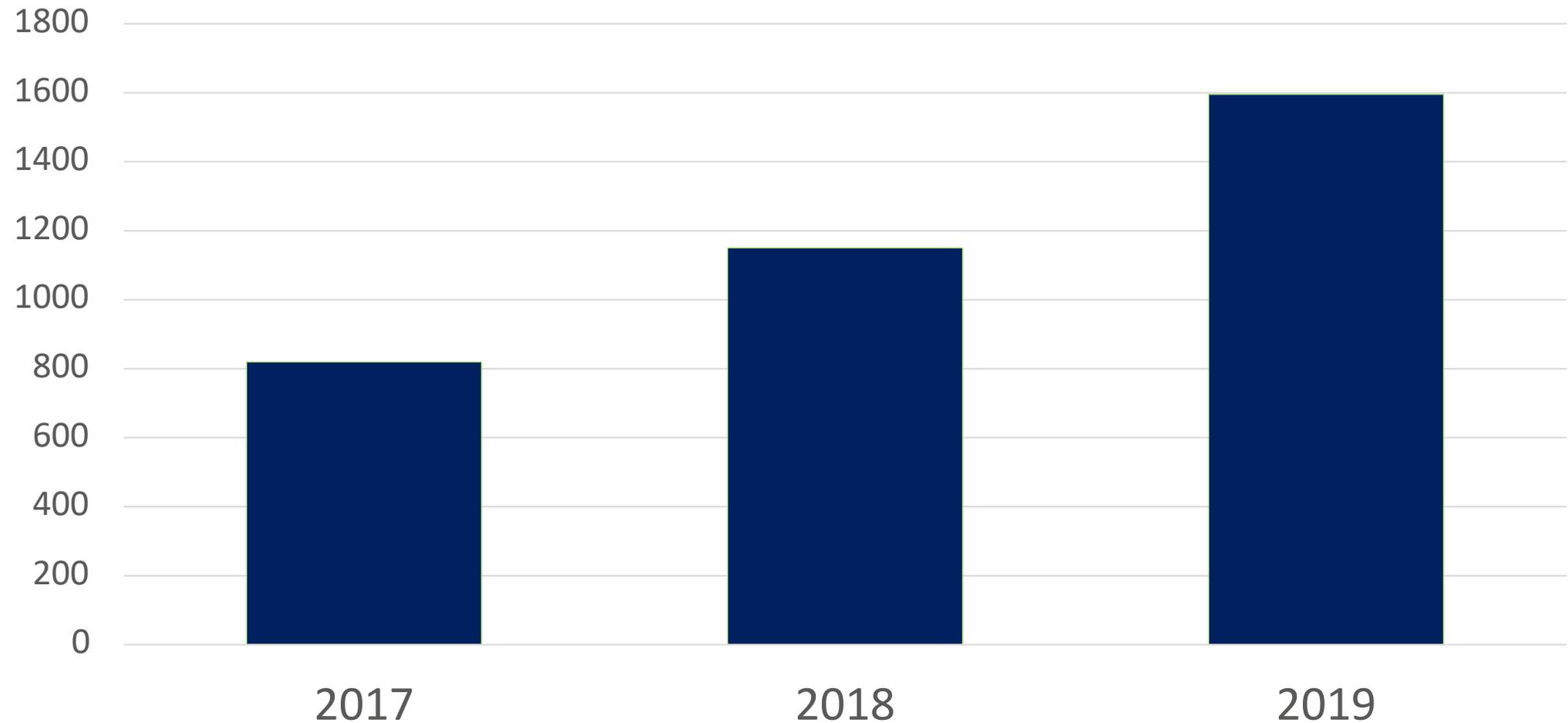


ORCID: Global Picture

- 6.6m+ ORCID iDs
- 1000+ Members
- 20 national consortia
- 590+ Integrations



Number of ORCID IDs with auburn.edu email addresses



It's often required

- Journals
- Grant applications
- University IDs



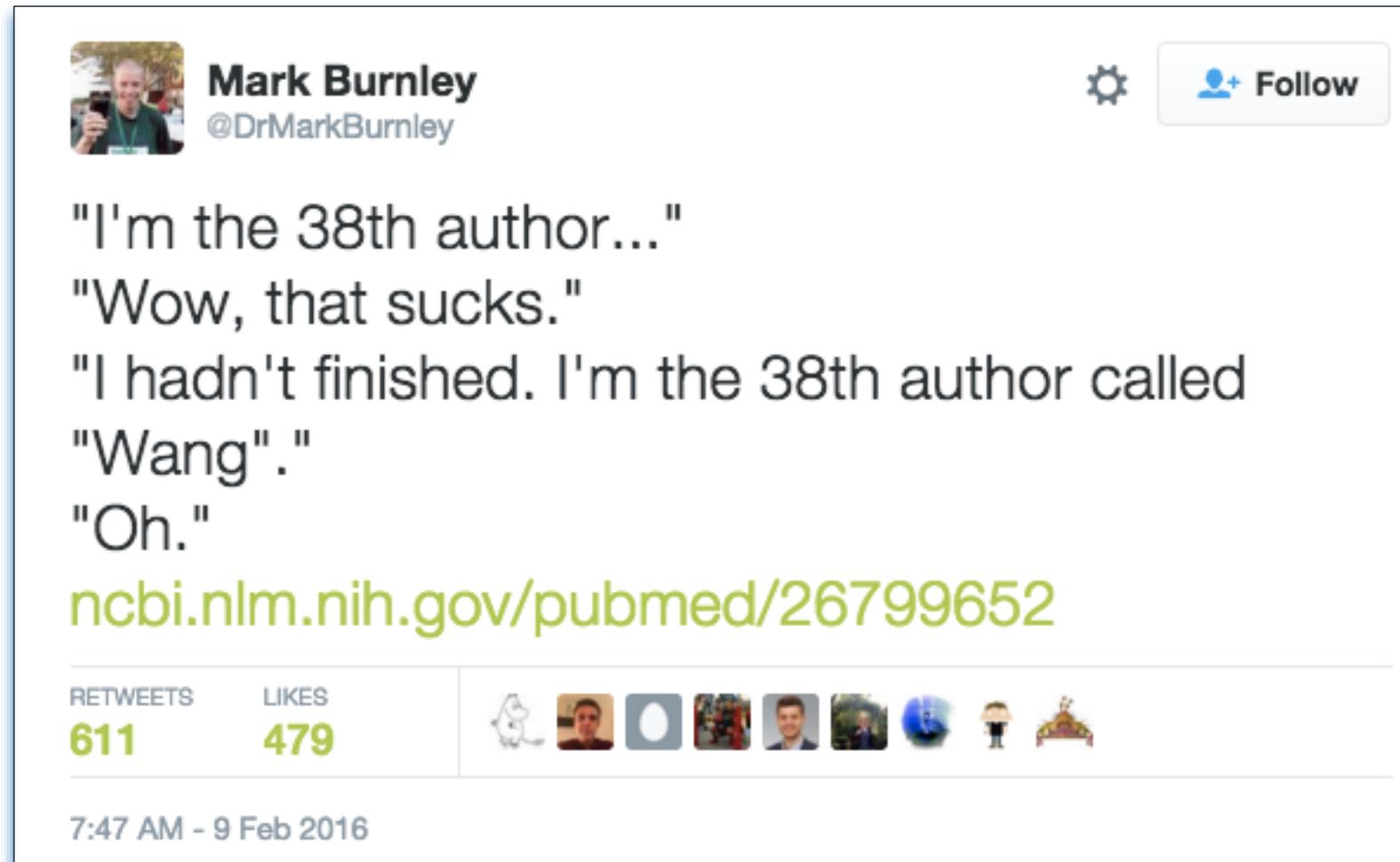
Integration with organizations, publishers and associations

ORCID Open Letter - Publishers

Join the many publishers that have committed to requiring ORCID IDs in the publishing process for their journal(s)!

- Required (**80 signatories**)
 - Science
 - IEEE
 - Springer Nature
 - Wiley
 - The Royal Society
 - PLoS
 - BMJ Journals
 - Cambridge Univ Press
 - The Company of Biologists...
- Optional
 - **Many** academic societies
 - Nature Publishing Group
 - Taylor & Francis
 - *Proceedings of the National Academy of Sciences*
 - Oxford University Press

Why *else* would you want an ORCID ID?



 **Mark Burnley**
@DrMarkBurnley

  Follow

"I'm the 38th author..."
"Wow, that sucks."
"I hadn't finished. I'm the 38th author called
"Wang"."
"Oh."
ncbi.nlm.nih.gov/pubmed/26799652

RETWEETS **611** LIKES **479**



7:47 AM - 9 Feb 2016

Resolves name ambiguity issues

- Shared names
- Different versions
- Transliteration
- Accents or other ALT characters
- Name changes

EJC de Geus

ORCID ID
ID orcid.org/0000-0001-6022-2666

Also known as
Eco JC de Geus

Country
Netherlands

Email
j.c.n.de.geus@vu.nl

Other IDs
ResearcherID: M-9318-2015
Scopus Author ID: 7006594888

Mogens Sandfær

ID <http://orcid.org/0000-0001-8436-5346>

Also known as:
M. Sandfaer
M. Sandfær
Mogens Sandfaer

Country: Denmark

Websites:
[My LinkedIn profile](#)

Other IDs:
Scopus Author ID: 34168257000

Soichi Tokizane

ID <http://orcid.org/0000-0003-1236-1930>

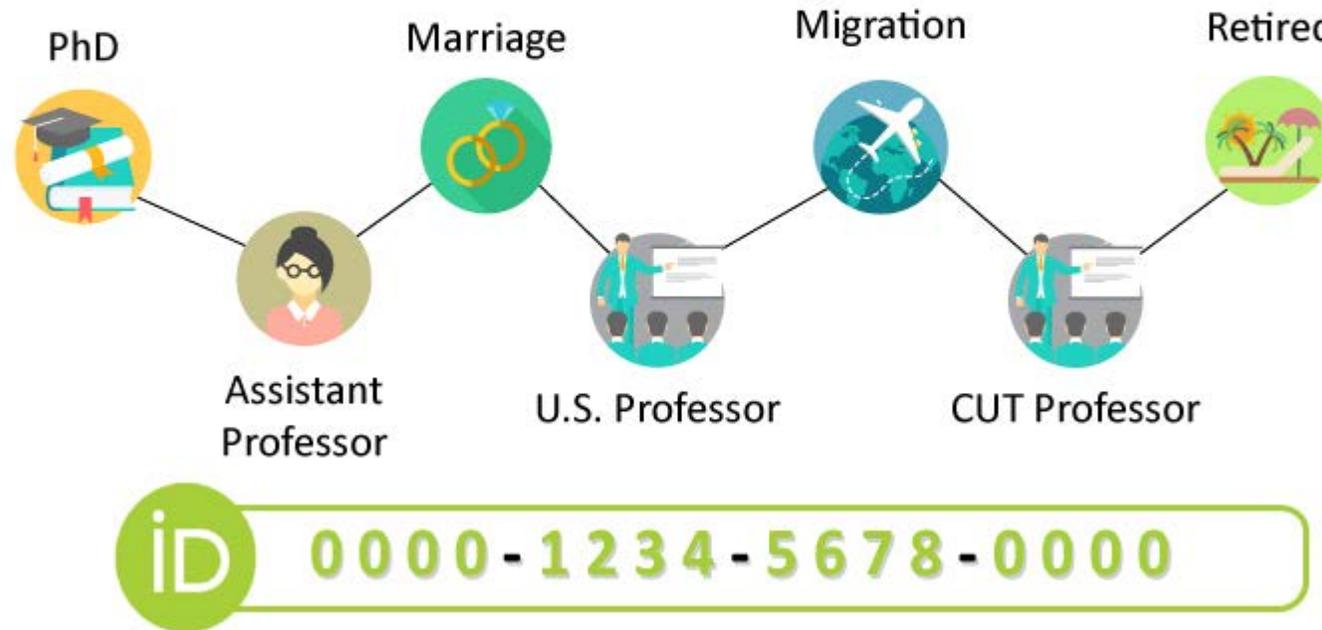
Also known as:
時実 象一

Country: Japan

Other IDs:
Scopus Author ID: 8144570900

Stays with you wherever you go

ORCID



Credit for different types of work

- Articles
- Books
- Grants
- Software
- Musical scores
- Conference posters
- Peer-review



```
26 function mkthumb($file, $size=128, $color='')
27 {
28     echo '<br />'. $file;
29     if ($color!='' && (strlen($color)!=6 || !ctype_xdigit($color))
30         || intval($size)<=0) return FALSE; /* $size or $color is not valid */
31     $size=intval($size); $color=lower($color); $ic=hexdec($color);
32     if (is_dir($file) || preg_match('/^_thumb_[0-9]+(_[0-9a-f]{6})?_/',
33         basename($file) || (substr($file, -4)!='.gif' && substr($file, -4)!='.png'
34         && substr($file, -5)!='.jpeg' && substr($file, -4)!='.jpg' &&
35         substr($file, -4)!='.bmp')) return FALSE; /* skip non-images and thumbs */
36     $thumbn = dirname($file).'_thumb_'. $size. ($color?'_'.lower($color):
37         '').'_'.substr(basename($file), 0, strrpos(basename($file), '.')).'.gif';
38     if (file_exists($thumbn)) return FALSE;
39     if (substr($file, -4)=='gif') $srct = imagecreatefromgif($file);
40     else if (substr($file, -4)=='png') $srct = imagecreatefrompng($file);
41     else if (substr($file, -4)=='bmp') $srct = imagecreatefrombmp($file);
42     else $srct = imagecreatefromjpg($file); /* import to GD */
43     $srcw = imagesx($srct); $srch = imagesy($srct); /* get img dimensions */
44     $desti = imagecreatetruecolor($size, $size);|
```

nature
cell biology

Spatial regulation of VEGF receptor endocytosis in angiogenesis

Masanori Nakayama^{1,8}, Akiko Nakayama¹, Max van Lessen¹, Hiroyuki Yamamoto¹, Sarah Hoffmann¹, Hannes C. A. Drexler², Norimichi Itoh³, Tomonori Hirose⁴, Georg Breier⁵, Dietmar Vestweber⁸, Jonathan A. Cooper⁷, Shigeo Ohno⁴, Koza Kaibuchi³ and Ralf H. Adams^{1,8}

Activities as diverse as migration, proliferation and patterning occur simultaneously and in a coordinated fashion during tissue morphogenesis. In the growing vasculature, the formation of motile, invasive and filopodia-carrying endothelial sprouts is balanced with the stabilization of blood-transporting vessels. Here, we show that sprouting endothelial cells in the retina have high rates of VEGF uptake, VEGF receptor endocytosis and turnover. These internalization processes are opposed by atypical protein kinase C activity in more stable and mature vessels. aPKC phosphorylates Dab2, a clathrin-associated sorting protein that, together with the transmembrane protein ephrin-B2 and the cell polarity regulator PAR-3, enables VEGF receptor endocytosis and downstream signal transduction. Accordingly, VEGF receptor internalization and the angiogenic growth of vascular beds are defective in loss-of-function mice lacking key components of this regulatory pathway. Our work uncovers how vessel growth is dynamically controlled by local VEGF receptor endocytosis and the activity of cell polarity proteins.

The biological activity of growth factor receptors is tightly controlled during growth and patterning processes. While internalization is often seen as a means of terminating signals or degrading receptors, it can also generate qualitatively or quantitatively distinct signalling responses¹⁻³. Consequently, the positive or negative regulation of endocytosis might facilitate specialized biological activities of certain cells or cell groups within a larger population, as they are frequently seen in morphogenesis⁴. In the angiogenic vasculature, sprouting involves the specialization of endothelial tip cells, which are highly motile and invasive, and extend filopodia to detect tissue-derived cues such as vascular endothelial growth factors (VEGFs). These ligands (primarily VEGF-A and VEGF-C) trigger the homo- or heterodimerization of their cognate endothelial receptors (VEGFR2/Flk1 and VEGFR3/Flt4, respectively) and thereby activate downstream signal transduction cascades that control sprouting and proliferation⁵⁻⁷. Tip cells are thought to have the highest levels of VEGF receptor signalling because they lead sprouts and might therefore encounter higher ligand concentrations than trailing stalk cells. The latter form the sprout base, maintain a lumenized connection to the existing vasculature and lack long filopodia. Tip and stalk cell behaviours are presumably not fixed and rather reflect transient, in-

terconvertible phenotypes and constant competition of endothelial cells for the tip position⁸. This process involves the Notch pathway, which is thought to downregulate VEGF receptor expression and is therefore presumably less active in tip cells⁹⁻¹¹. Another cell-contact-dependent signalling molecule, the Eph receptor ligand ephrin-B2 (encoded by the *Efnb2* gene), promotes the invasive behaviour of endothelial cells and is required for normal VEGF receptor endocytosis and signalling¹²⁻¹⁴.

Physiological angiogenesis also involves the gradual conversion of growing vessels into a stable and mature tubular network, in which endothelial cells are increasingly quiescent, show a palmar-like morphology and are devoid of VEGF-induced activities such as the extension of filopodia or proliferation¹⁵. The postnatal vascularization of the retina in the mouse is an excellent model system for angiogenic sprouting and maturation, because sequentially occurring processes are spatially separated and can be imaged at high resolution¹⁶. Tip- and stalk-cell-containing sprouts can be found at the peripheral edge of the growing vascular plexus next to VEGF-producing tissue regions, whereas the previously established, more mature vessels are located in the central retina.

Here, we show that angiogenesis is controlled by spatially regulated endothelial endocytosis. We identify Disabled 2 (Dab2),

¹Max Planck Institute for Molecular Biomedicine, Department of Tissue Morphogenesis, and University of Muenster, Faculty of Medicine, D-48149 Muenster, Germany. ²Max Planck Institute for Molecular Biomedicine, Bioanalytical Mass Spectrometry Facility, D-48149 Muenster, Germany. ³Department of Cell Pharmacology, Nagoya

Increases discoverability of your work

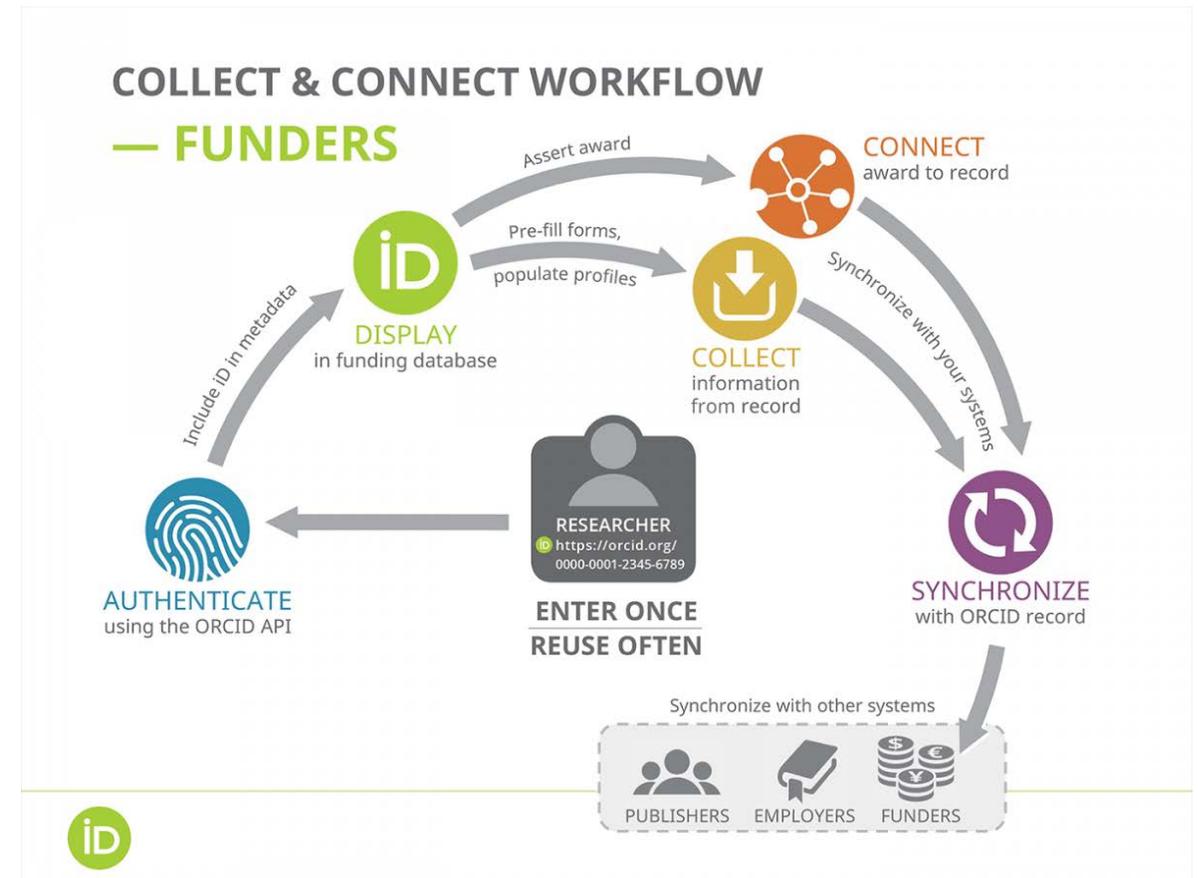
- Citable
- Sharable
- Searchable in databases
- Under your control

ORCID iDs are being embedded in articles

The image shows a screenshot of a journal article page. At the top, there is a green banner that reads "ORCID iDs are being embedded in articles". Below this, the article's title is "Ab initio intermolecular potential energy surface of Ne--NCCN van derWaals complex: effect of the place of midbond function on the interaction". The authors listed are Mohammad Solimannejad, Hamidreza Jouypazadeh, and Hossein Farokhpour. The article is published in "COMPUTER METHODS IN BIOMECHANICS AND BIOMEDICAL ENGINEERING: IMAGING & VISUALIZATION", Volume 26, No. 5, 1663-1703. The page also features a Taylor & Francis logo, an OPEN ACCESS badge, and a CrossMark logo. On the right side, there is a list of authors with their ORCID iDs: Soo-Mee Bang, Moon Ju Jang, Kyoung Ha Kim, Ho-Young Yhim, Yoo-Kyeesung Kim, Seung-Hyun Nam, Han Gyu Heung, Sung-Hwa Bae, and Sung-Hyun Kim. At the bottom, there is a section for "Prevention of Venous Thromboembolism, 2nd Edition: Korean Society of Thrombosis and Hemostasis Evidence-Based Clinical Practice Guidelines" with a list of authors including Soo-Mee Bang, Moon Ju Jang, Kyoung Ha Kim, Ho-Young Yhim, Yoo-Kyeesung Kim, Seung-Hyun Nam, Han Gyu Heung, Sung-Hwa Bae, Sung-Hyun Kim, Seung-Chul Wan, Yang-Ki Kim, Inho Kim, Won-I Choi, Chul Won Jang, Nam Hee Park, Nam-Kyong Choi, Byung-Joo Park, and Doyeun Oh.

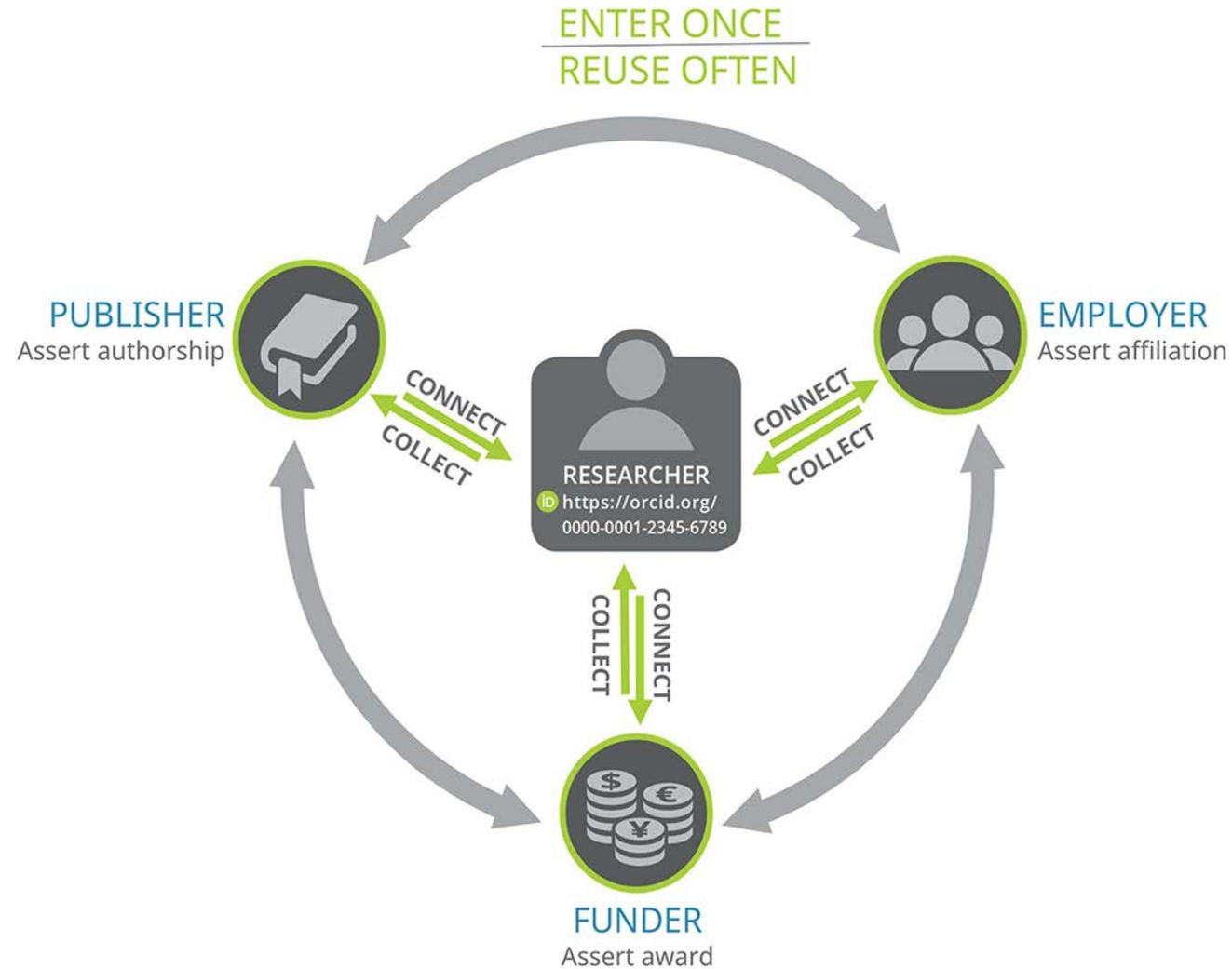
Funding Agencies

- Included in application process
 - National Institute of Health
 - CDC
 - NSF
 - NASA
 - Department of Energy
 - Health Research Alliance
 - World Health Organization
 - ...many more!



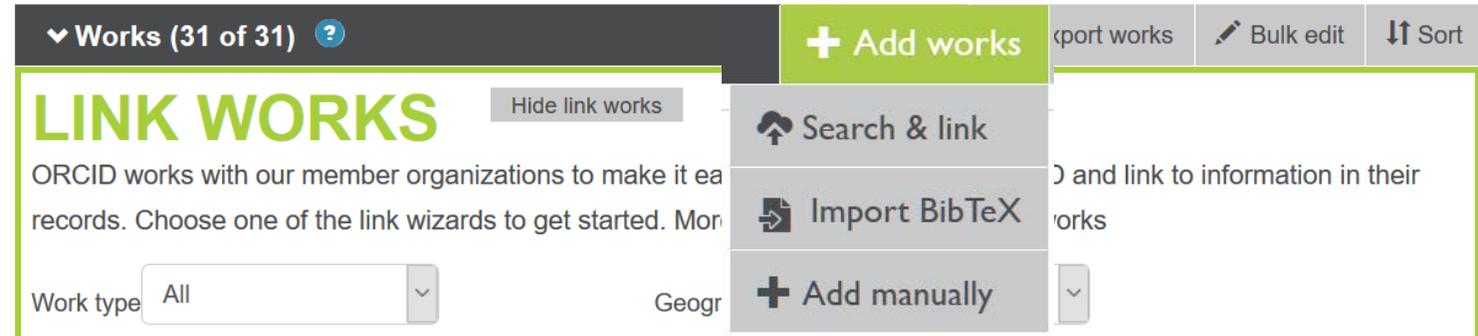
Not in place for all granting agencies **YET**, but it will be a reality soon.

Spend more time working, less filling out forms



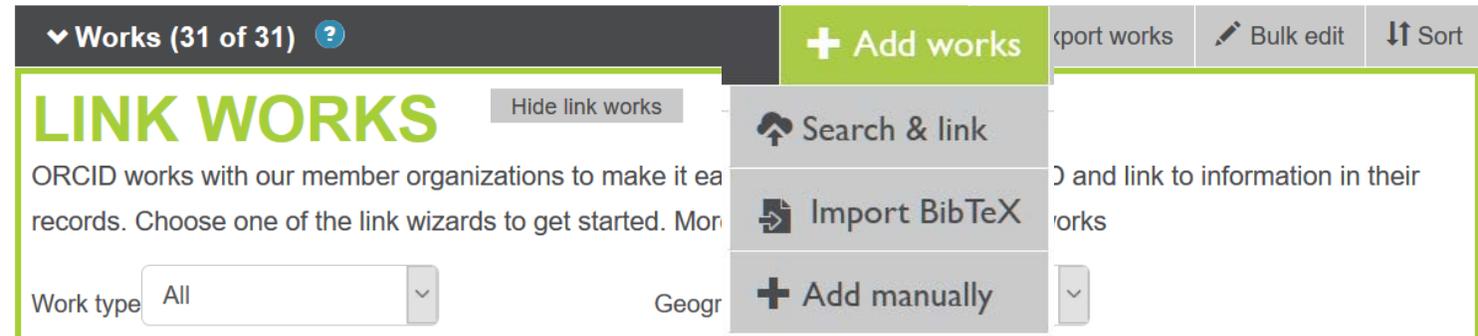
Easy to Add Existing Works

- Google Scholar
- Researcher ID/
Publons ID
- Scopus
- DataCite
- CrossRef



Easy to Add Existing Works

- Google Scholar
- Researcher ID/
Publons ID
- Scopus



SEND US YOUR CV!

****Add ulysses@auburn.edu as a trusted user for assistance****

ORCID Benefits for Research Institutions

Mitigate confusion caused
by name ambiguity

Assess individual
contributions & measure
institutional impact



iD

Assert trustworthy &
accurate affiliations

Save time & reduce
administrative burden

Integrating with AU's research processes

- We are members of the US Community Consortium
 - 88 are R1 institutions
- As members, we have 5 application programming interfaces (APIs) at no additional charge



Create or connect your ORCID iD

Institutions with existing ORCID integrations

- **Total: 75+**
- **R1 Institutions: 58 and growing**

Early adopters

Boston University

Cornell

Duke

University of Michigan

SEC Schools

Mississippi State

Texas A&M

University of Missouri

University of Tennessee

Others are in development

How Can Auburn University Use ORCID?

- Create and connect to institutional account
- As members of the US ORCID Community (108 members), we have access to features we are not taking advantage of



Identity Management

- Standardize institutional affiliation data
- Pull ORCID data directly
- More reliable metadata
- Display in directory
- Showcase researchers



AUrrora & ETDs

- Allows automatic addition to ORCID record

The screenshot shows the 'Item submission' page on the AUrrora website. At the top, there is the Auburn University logo and the word 'AUBURN UNIVERSITY'. To the right, the word 'AUrrora' is displayed. Below the logo, there is a navigation bar with links for 'AUrrora HOME', 'FAQS', 'SUBJECT LIBRARIANS/DEPARTMENTAL LIAISONS', and 'CONTACT'. The main content area is titled 'Item submission' and includes a breadcrumb trail: 'AUrrora Home / Auburn University Libraries / Auburn University Libraries / Item submission'. There is a search bar on the right with the text 'Search AUrrora' and a magnifying glass icon. Below the search bar, there is a 'BROWSE' section with a list of categories: 'All of AUrrora', 'Communities & Collections', 'By Issue Date', 'Authors', 'Titles', 'Subjects', and 'Series'. To the right of the 'BROWSE' section, there is a 'MY ACCOUNT' section with links for 'Logout', 'Profile', and 'Submissions'. The main form area has tabs for 'Describe', 'Upload', 'Review', and 'Complete'. The 'Describe' tab is selected. Below the tabs, there is a 'Describe Item' section. It includes a 'Contribution Type(s)*:' dropdown menu with options: 'Afterword', 'Article, Reference Book', 'Biography', 'Book Review', 'Book, Chapter in Non-Scholarly Book-New', and 'Book, Chapter in Non-Scholarly Book-Revised'. Below the dropdown, there is a 'Type of work:' label. There are two 'Author(s)*:' sections. Each section has a 'Last name, e.g. Smith' input field, a 'First name(s) + "Jr.", e.g. Donald Jr.' input field, and an 'Add' button. Below the first 'Author(s)*:' section, there is a 'Format: Last name, First name and initial plus Jr, II, etc.' label. Below the second 'Author(s)*:' section, there is an 'Alternate Form of Author's Name:' label. At the bottom of the form, there is a note: 'Alternate form of author's name(s): Last Name First. Ex. Maiden or married name, different form of name; pseudonym.'

Examples of ORCID-Integrated Repositories

Colorado State University

Virginia Tech

University of Florida

University of Michigan

Duke University

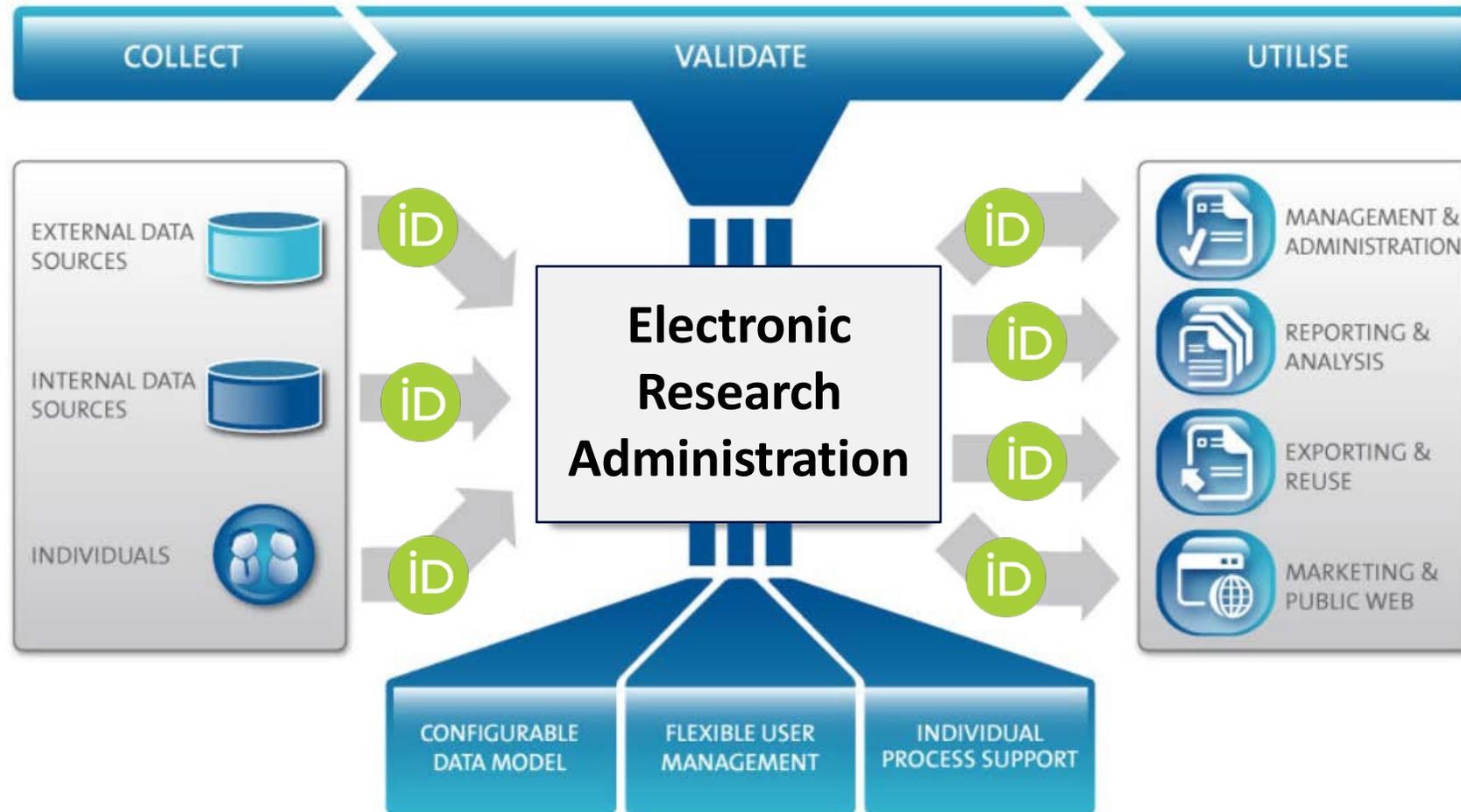
University of Notre Dame

Purdue University

University of Missouri

Texas A&M University

Electronic Research Administration



- Reduces process delays
- Increases consistency
- Improves reporting compliance and accuracy

Status of ORCID Integration at AU

- Administrative support
 - Vice-President for Research
 - Associate Deans for Research
- OIT
 - Banner integration in development
- AU Libraries
 - Prepared to support faculty and students
 - Integrate with AUrora and ETDs

Thank you!

For more information about ORCID at AU, please visit

libguides.auburn.edu/ORCID



Questions? Contact Patricia Hartman (pjh0011@auburn.edu)