

RESEARCH & DISCOVERY

RESEARCHER/SCIENTIST	INSTITUTION	FUNDER/GOVT AGENCY	PUBLISHER
ACTIONS <ul style="list-style-type: none"> Secure grants/funding Conduct research/experiments Collaborate Manage & analyze data Exchange ideas Analyze data from tools (e.g., altmetrics) INVESTMENTS <ul style="list-style-type: none"> Self-fund travel to conferences Invest time in collaboration Invest in research materials Invest in memberships REWARDS <ul style="list-style-type: none"> Enhanced reputation Career advancement / tenure Improved peer network Potential new funding WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Lack of funding opportunities Not complying with OA mandates Bias towards English language Lack of funding for developing countries How to collaborate with Chinese peers No incentives for investment in reproducibility Flawed rankings Administrative and teaching loads Success measured by publishing in high impact journals 	ACTIONS <ul style="list-style-type: none"> Manage research budgets Secure grants for research Provide library support Host research results/data Report and track funds Balance support for established/junior researchers Analyze data from tools (e.g., altmetrics) INVESTMENTS <ul style="list-style-type: none"> Invest in collaboration platforms Invest in research databases/platforms Invest in benchmarking tools Invest in text/data mining tools Fund labs/salaries REWARDS <ul style="list-style-type: none"> Solve global issues Create jobs Attract talent Attract more students Attract more research funding Keep government and administration happy Raise reputation WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Lack of funding opportunities Not complying with OA mandates Bias towards English language Recognizing competition from Chinese peers Flawed rankings Complying with grant guidelines Pressure of university rankings Political and fiscal pressures on government funding 	ACTIONS <ul style="list-style-type: none"> Solicit/review proposals Fund research / award grants Set research policies Vet researchers Raise funds Balance support for established/junior researchers Analyze data from tools (e.g., altmetrics) INVESTMENTS <ul style="list-style-type: none"> Pay and develop staff Host trainings Fund research grants Allocate block grants to institutions Set policy agenda REWARDS <ul style="list-style-type: none"> Fulfill mission and related goals Keep government and administration happy Secure additional funding to provide more grants WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Creating funding opportunities Ensuring that funding supports our goals Bias towards English language Recognizing competition from Chinese peers Securing funding for rare diseases Political and fiscal pressures on government funding 	ACTIONS <ul style="list-style-type: none"> Provide curated resources Submit and revise manuscript/patent/standard Support for scientific networks Provide guidance for researchers Balance support for established/junior researchers Analyze data from tools (e.g., altmetrics) INVESTMENTS <ul style="list-style-type: none"> Investment in staff, technology and infrastructure Invest in research collaboration Invest in development of societies Invest in text/data mining tools REWARDS <ul style="list-style-type: none"> Drive revenue Foster new products Attract new customers Raise reputation Build networks Support new discoveries Engage stakeholders Support society members WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Lack of funding opportunities Threats from non-traditional publishing sources Recognizing competition from Chinese peers Anti-publisher sentiments Non-compliance with OA mandates

TOOLS AND SERVICES
 Examples of organizations that serve research & discovery are: reference manager and collaboration software (Mendeley, F1000Workspace, openAire, Zotero); electronic lab notebooks (Hivebench, OneNote); grant writing software (GrantHub, Oracle PeopleSoft); collaboration networks (ResearchGate, Academia.edu); digital identifiers (ORCID, Ringgold, ISNI); discovery tools (Google Scholar/Google, ProQuest Summon, OCLC WorldCat, Dimensions, Symplectic Discovery, VIVO); A&I services (Scopus, ScienceOpen); data collection of posters/conferences (Morressier); and identifying experts in a specific field (Expert Lookup); non-publishing learned societies providing research collaboration, conferences, education, etc.



AUTHORING & RESEARCH OUTPUT

RESEARCHER/SCIENTIST	INSTITUTION	FUNDER/GOVT AGENCY	PUBLISHER
ACTIONS <ul style="list-style-type: none"> Research publishers Submit and revise manuscript/patent/standard Suggest peer reviewers Collaborate w/wto write up results Seek pre-submission guidance INVESTMENTS <ul style="list-style-type: none"> Invest time/resources in research output Invest in professional development REWARDS <ul style="list-style-type: none"> Enhanced reputation Career advancement/tenure Improved peer network Advance science/knowledge WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Limited career opportunities Predatory journals 	ACTIONS <ul style="list-style-type: none"> Self-publish research Host supplemental data Support peer review & editorial services Provide access to content Provide tools like Symplectic and Pure INVESTMENTS <ul style="list-style-type: none"> Pay salaries Invest in collaboration tools Invest in research databases/platforms Invest in benchmarking tools Invest staff time for OA Invest in text/data mining tools REWARDS <ul style="list-style-type: none"> Solve global issues Attract talent Attract more students Attract more research funding Raise reputation Advance science/knowledge WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Pressure on researchers/talent Understanding open science practices Support for non-native English speakers Pressure on library budgets 	ACTIONS <ul style="list-style-type: none"> Provide submission platform Provide block grants for OA Track compliance with funder mandates Fund further research Publicize funded research Set funding policies INVESTMENTS <ul style="list-style-type: none"> Invest in submission platforms Raise and track funding REWARDS <ul style="list-style-type: none"> Provide access to articles / data sets Enable sharing of research Recognition for advancement of science WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Pressure to ensure open science Understanding open science practices Pressure of faulty research on our reputation 	ACTIONS <ul style="list-style-type: none"> Provide submission/product platforms Provide authoring/collaboration tools Structure OA agreements Provide pre-submission guidance INVESTMENTS <ul style="list-style-type: none"> Invest in research/collaboration platforms Invest staff time in pre-submission activities Invest in reviewer networks Invest staff time for OA REWARDS <ul style="list-style-type: none"> Increase engagement with authors Foster new products Attract new customers Expand society membership Raise reputation Develop scientific networks Drive revenue Advance science/knowledge WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Pressure on publishing ecosystem Understanding open science practices Support for non-native English speakers Competition for top talent

TOOLS AND SERVICES
 Examples of organizations that serve authoring & research output are: editing services (Editage, Scribbr); authoring, reference manager and collaboration software (Mendeley, F1000Workspace, openAire, ReadCube papers, Authora, Overleaf); research and data organization (Ibids, Figshare); licensing services for securing third-party rights to content used in research output (copyright.com, Rightslink, PLS)

POST-PUBLICATION

RESEARCHER/SCIENTIST	INSTITUTION	FUNDER/GOVT AGENCY	PUBLISHER
ACTIONS <ul style="list-style-type: none"> Post article Share content Market content Track impact Track altmetrics INVESTMENTS <ul style="list-style-type: none"> Time/effort REWARDS <ul style="list-style-type: none"> Advance science / solve global issues Enhanced reputation Career advancement/tenure WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Ensuring post-publication compliance 	ACTIONS <ul style="list-style-type: none"> Make articles accessible Archive articles/data Mine data sets Track usage statistics Ensure details are registered in CRIS INVESTMENTS <ul style="list-style-type: none"> Subscription costs Library system technology costs Archiving costs Staffing costs Licensing costs REWARDS <ul style="list-style-type: none"> Advance science / solve global issues Attract talent Attract more students Attract more research funding Raise reputation WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Ensuring post-publication compliance 	ACTIONS <ul style="list-style-type: none"> Measure impact of article Seek additional funding opportunities Check for compliance INVESTMENTS <ul style="list-style-type: none"> Time/effort Staffing costs REWARDS <ul style="list-style-type: none"> Advance science / solve global issues Attract more funding Raise reputation WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Incomplete impact data 	ACTIONS <ul style="list-style-type: none"> Archive articles and data Measure impact factor Track usage statistics Track altmetrics INVESTMENTS <ul style="list-style-type: none"> Marketing costs New product development costs Operational costs for tracking Archiving costs Staffing costs REWARDS <ul style="list-style-type: none"> Drive revenue Advance science / solve global issues Attract new customers Expand society membership Raise reputation Identify future authors WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Sharing sites (Sci-Hub, ResearchGate) threaten revenue and value Pressure from CC-BY and other licensing mandates threatens licensing revenue The demands of negotiating OA Pressure from entities like Sci-Hub

TOOLS AND SERVICES
 Examples of organizations that serve post-publication are: altmetrics (Altmetric, Plum Analytics); reputation management (Kudos, ImpactStory); text & data mining tools, document delivery (RightFind, Reprints Desk); A&I services (Scopus, ScienceOpen); subscription agents (EBSCO, Harasowitz); social media, collaborative networks (ResearchGate, Academia.edu); archiving software (LOCKSS, CLOCKSS); library system technology (ILS), data collection of posters/conferences (Morressier); licensing services (copyright.com, RightsLink, PLS, Creative Commons); CRIS or Research Information Systems (Symplectic, Pure)

PUBLISH & DISTRIBUTE

RESEARCHER/SCIENTIST	INSTITUTION	FUNDER/GOVT AGENCY	PUBLISHER
ACTIONS <ul style="list-style-type: none"> Revise content Review proofs Publish content Publish supplementary data Promote research INVESTMENTS <ul style="list-style-type: none"> Subscribe to marketing tools (e.g., Kudos) Time invested for author profiles, ORCID records, etc. REWARDS <ul style="list-style-type: none"> Advance career/tenure Enhance reputation in institution Enhance reputation outside institution WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Worry about impact of my research Identify future "publish or perish" 	ACTIONS <ul style="list-style-type: none"> Provide platforms to self-publish Host research-related data Catalog, tag, and archive research Assign DOIs for data Incentivize publication of negative results INVESTMENTS <ul style="list-style-type: none"> Invest in websites/platforms/repositories and appropriate processes Invest in integrated library system technology Subscribe to marketing tools (e.g., Kudos) Invest staff time in managing APCs and embargoes REWARDS <ul style="list-style-type: none"> Achieve institutional mission Attract talent Attract more students Attract more research funding Raise reputation WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Flat or diminishing library budgets How to support/fund publication/sharing of research data The demands of negotiating OA Pressure from entities like Sci-Hub 	ACTIONS <ul style="list-style-type: none"> Track research output Track compliance Provide platforms to self-publish research results Support sharing (data, code, MSS, etc.) Incentivize publication of negative results INVESTMENTS <ul style="list-style-type: none"> Invest in platforms that enable self-publishing Invest in websites/platforms/repositories and appropriate processes REWARDS <ul style="list-style-type: none"> Achieve mission Raise reputation WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Change in ecosystem due to OA How to support/fund publication/sharing Pressure on our mission due to disruption of ecosystem 	ACTIONS <ul style="list-style-type: none"> Edit content Design and package Assign metadata / enable discoverability Publish Curate volumes/issues Distribute/host content directly Set up third-party distribution Deposit in repositories, archive content / manage data Manage permissions for reuse Liaise with society partners Market/preview content Incentivize publication of negative results Mine data sets INVESTMENTS <ul style="list-style-type: none"> Invest in editorial and/or production platforms Invest in web sites/platforms/repositories and appropriate processes Pay distribution fees to aggregators Pay annual dues to standards organizations Pay typesetters and metadata taggers Invest in staff Pay other third-party fees REWARDS <ul style="list-style-type: none"> Achieve revenue targets Gain new insights and products Attract new customers Raise reputation Enhanced growth in society membership WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Funder pressure to publish in OA How to support/fund publication/sharing Sharing sites (SciHub, ResearchGate) will reduce revenue The demands of negotiating OA Pressure to meet Horizon 2020/2021 demands

TOOLS AND SERVICES
 Examples of organizations that serve publish & distribute are: digital content development and hosting services (HighWire, Ingenta, Hinari, Research4Life, Esploro, Zotero); open access publishing platforms (F1000Research, eLife); DOI registration (Crossref, DataCite); plagiarism technology (Similarity Check, Turnitin); aggregators (ProQuest, Enago, Scielo, CHORUS); permissions software (Rightslink); open access/institutional repositories (Figshare, Dryad, DIGITAL CSIC, e-IC); discovery tools (Google Scholar/Google, ProQuest Summon, OCLC WorldCat); author marketing tools (Kudos); article level metrics (Altmetrics); open access directories (DOAJ, Sherpa/Romeo); integrated library system technology (GOBI, Innovative, OCLC); sharing "guidelines" (Creative Commons, CCC)

PEER REVIEW

RESEARCHER/SCIENTIST	INSTITUTION	FUNDER/GOVT AGENCY	PUBLISHER
ACTIONS <ul style="list-style-type: none"> Research editorial requirements Submit and revise manuscripts Suggest peer reviewers Seek OA funding once accepted Provide peer review Participate in / create new societies/networks INVESTMENTS <ul style="list-style-type: none"> Invest time in submitting/revising manuscripts Fund APCs and/or seek funding after acceptance REWARDS <ul style="list-style-type: none"> Enhanced reputation Career advancement / tenure Improved peer network Advance knowledge in field Compensation for peer review (when available) WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Lack of peer review transparency Flaws in peer review process Requests to peer review No formal recognition for peer review Pressure on APC funding for research 	ACTIONS <ul style="list-style-type: none"> Self-publish research results Host repositories Enable staff to access peer review services Approve and fund OA charges once accepted Host preprint servers INVESTMENTS <ul style="list-style-type: none"> Pay editorial staff Pay staff to manage APCs Pay OA charges upon acceptance Invest in repositories Pay staff to handle repositories REWARDS <ul style="list-style-type: none"> Fulfill mission for advancing science WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Funder restrictions supporting OA Flaws in peer review process Pressure on APC block grants 	ACTIONS <ul style="list-style-type: none"> Provide submission platform Approve and fund APCs or OA charges Track compliance Host preprint servers INVESTMENTS <ul style="list-style-type: none"> Invest time in tracking compliance Track grants and funding Invest in altmetrics REWARDS <ul style="list-style-type: none"> Provide access to articles / data sets Enable sharing of research Recognition for advancement of science WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Slow peer review practices of publishers Underfunded OA publishing infrastructure of publishers 	ACTIONS <ul style="list-style-type: none"> Manage peer review process Manage quality of science Establish fit with publishing program Accept manuscripts Host preprint servers INVESTMENTS <ul style="list-style-type: none"> Invest in submission/production platforms Invest APC e-committee platforms Pay reviewer/editorial board honoraria (where available) Invest in peer review network Invest in development of altmetrics REWARDS <ul style="list-style-type: none"> Expand scientific networks and brand recognition Identify research that fits editorial goals Uncover new talent Expand society membership Achieve high-quality research evaluation WHAT KEEPS ME UP AT NIGHT <ul style="list-style-type: none"> Funders' restrictions to publish in OA Short funder funding cycles or lack of funding Flaws in peer review process and value

TOOLS AND SERVICES
 Examples of organizations that serve peer review are: workflow software (ScholarOne, BenchPress, Editorial Manager); preprint servers (arXiv, bioRxiv, Authora); peer review tools (PLOS Reviewer Center, SitReviewer, Publons); Open Access payment workflows and management tools (RightsLink, proprietary systems, Apara); identifying experts in a specific field (Expert Lookup); repositories and tools for discovery, annotation, analytics, etc. (DSpace)