

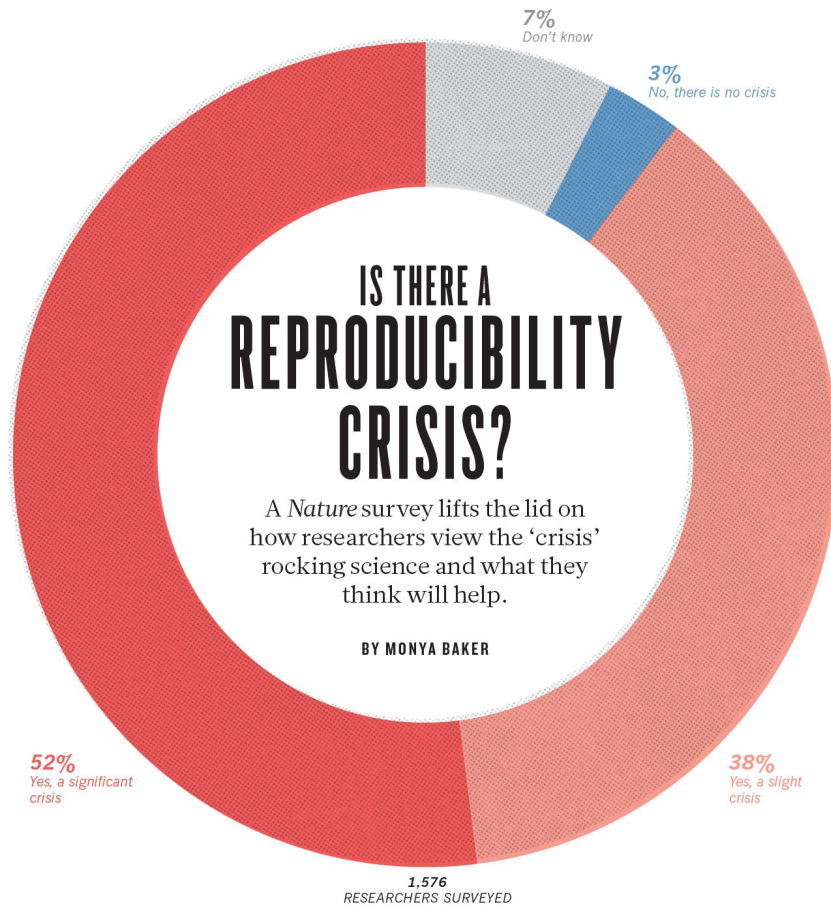
The QUEST Center in Berlin

An institutional strategy to improve the trustworthiness, usefulness, and ethics of biomedical research

Tübingen (online) 7.4.2021

Slides at <http://bit.ly/>

90 % of researchers surveyed by Nature think they are experiencing a ,reproducibility crisis‘



THE CAUSE

The survey asked scientists what led to problems in reproducibility. More than 60% of respondents said that each of two factors — pressure to publish and selective reporting — always or often contributed. More than half pointed to insufficient replication in the lab, poor oversight or low statistical power.

WHAT CAN BE DONE?

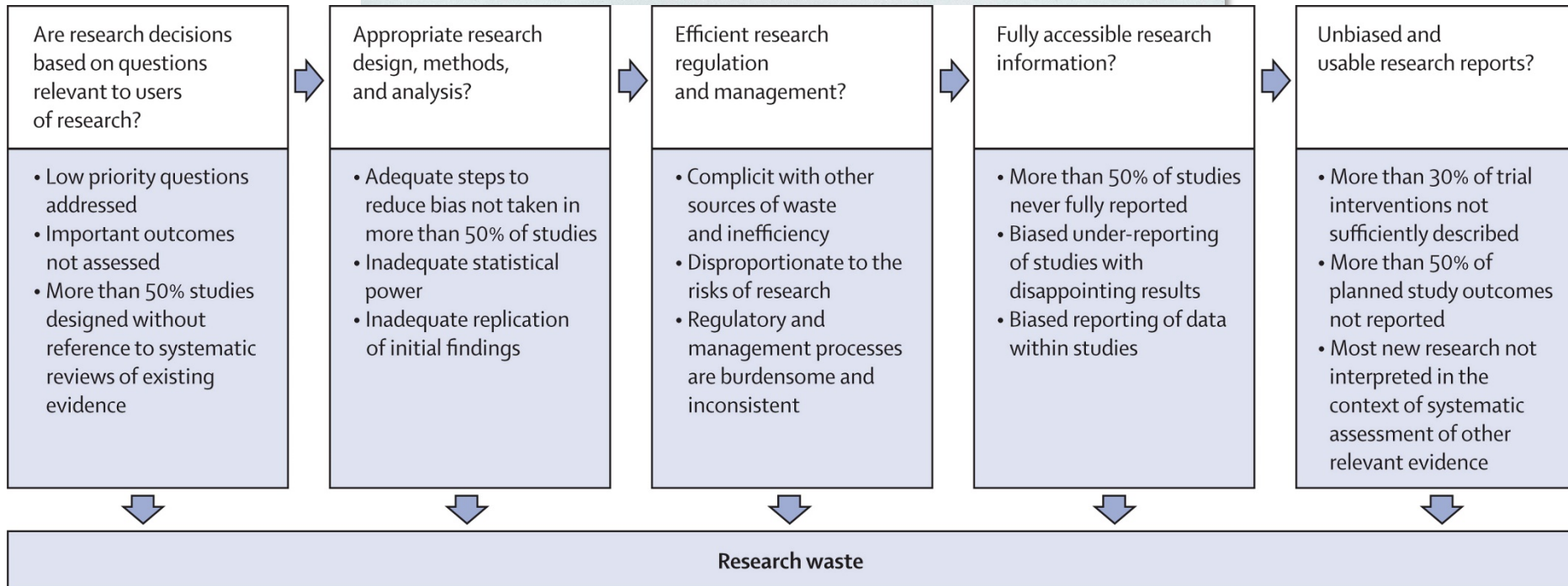
Respondents were asked to rate 11 different approaches to improving reproducibility in science, and all got ringing endorsements. Nearly 90% — more than 1,000 people — ticked “More robust experimental design” “better statistics” and “better mentorship”.

THE LANCET

Research: increasing value, reducing waste · January, 2014

www.thelancet.com

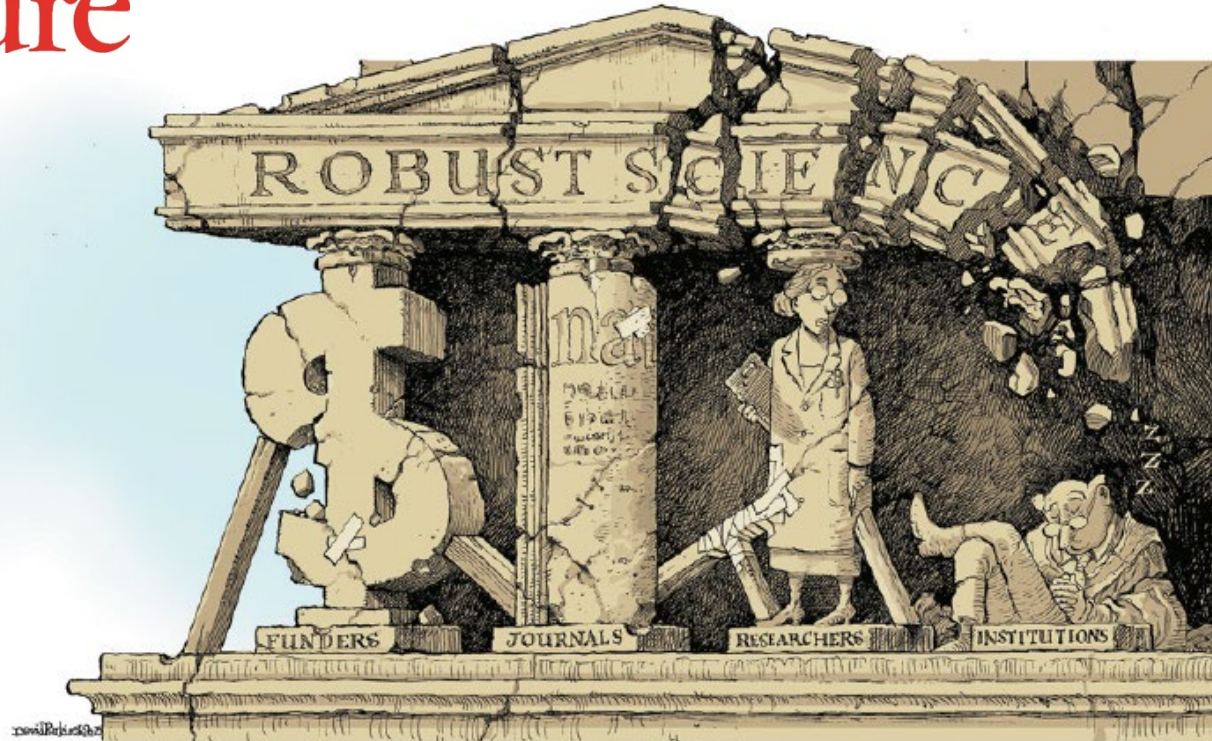
“85% of health research is wasted.”



2014

Research: increasing value, reducing waste

nature



Institutions must do their part for reproducibility

Tie funding to verified good institutional practice, and robust science will shoot up the agenda, say C. Glenn Begley, Alastair M. Buchan and Ulrich Dirnagl.

QUEST (est. 2017) - Quality Ethics Open Science Translation Center for Transforming Biomedical Research



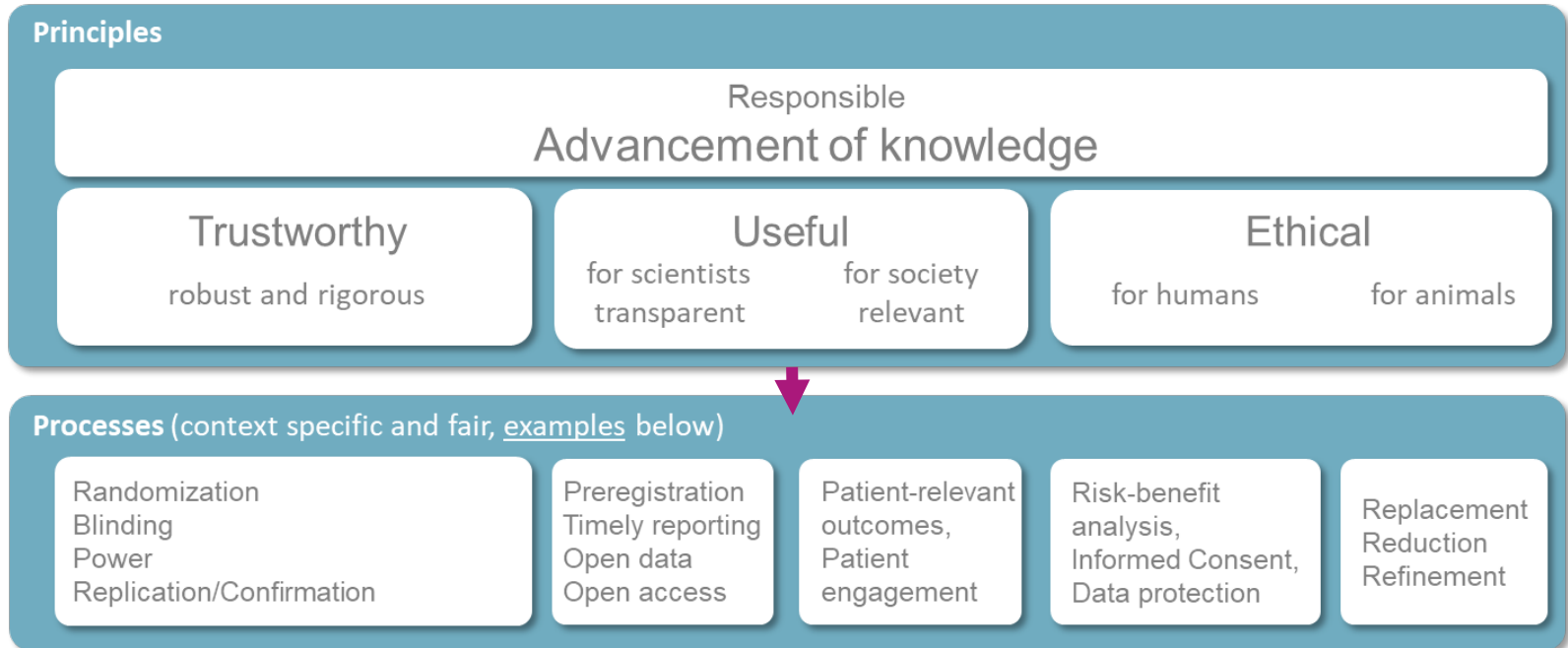
...to increase the trustworthiness and usefulness of biomedical research – at BIH (i.e. Charité and Max Delbrück Center) and beyond – by optimizing its robustness, transparency, patient-orientedness, and ethics.

<http://quest.bihealth.org>

The principles of good biomedical research are based on (context-) specific processes



The principles of good biomedical research are based on (context-) specific processes

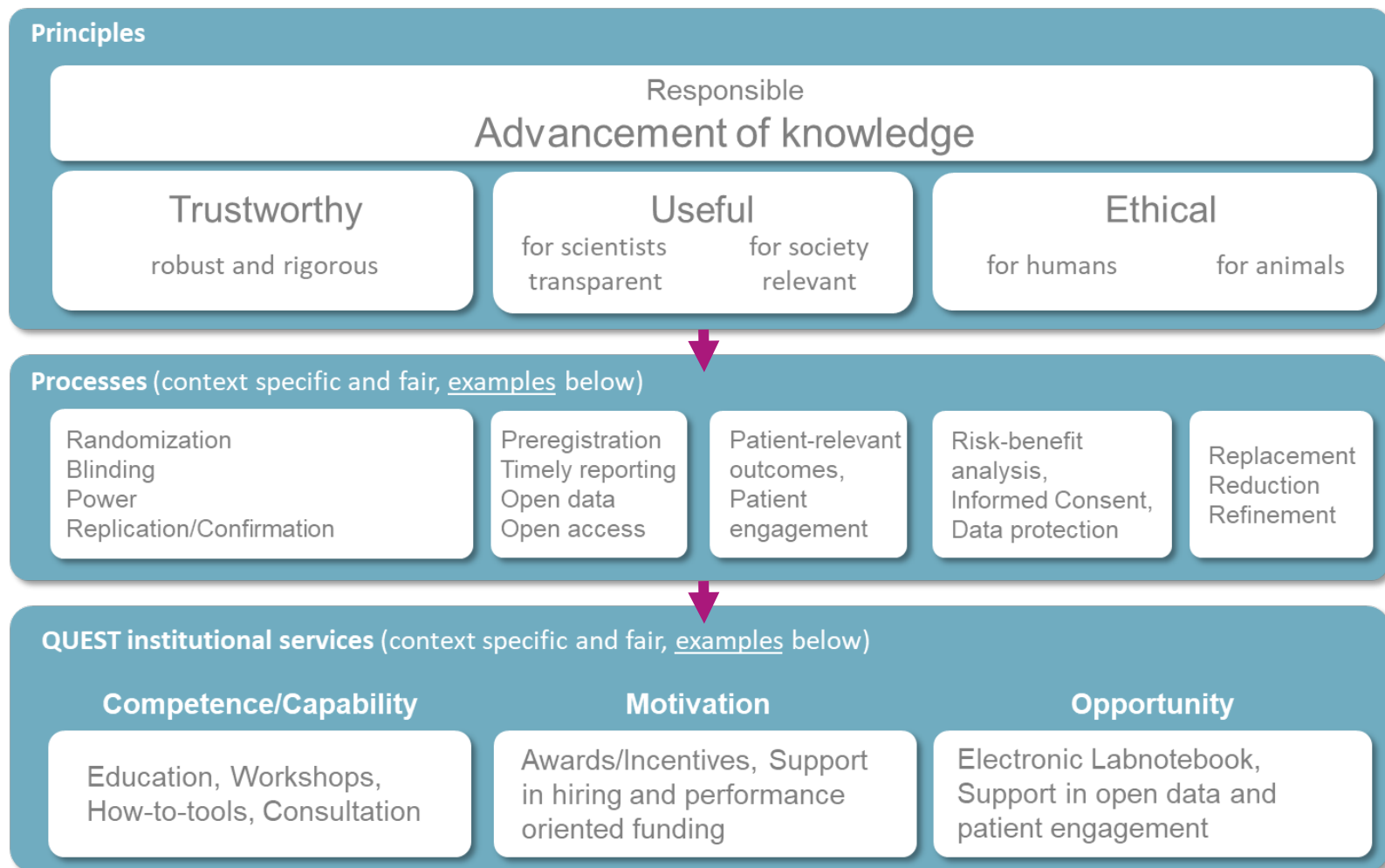


Challenges of research in academic medicine

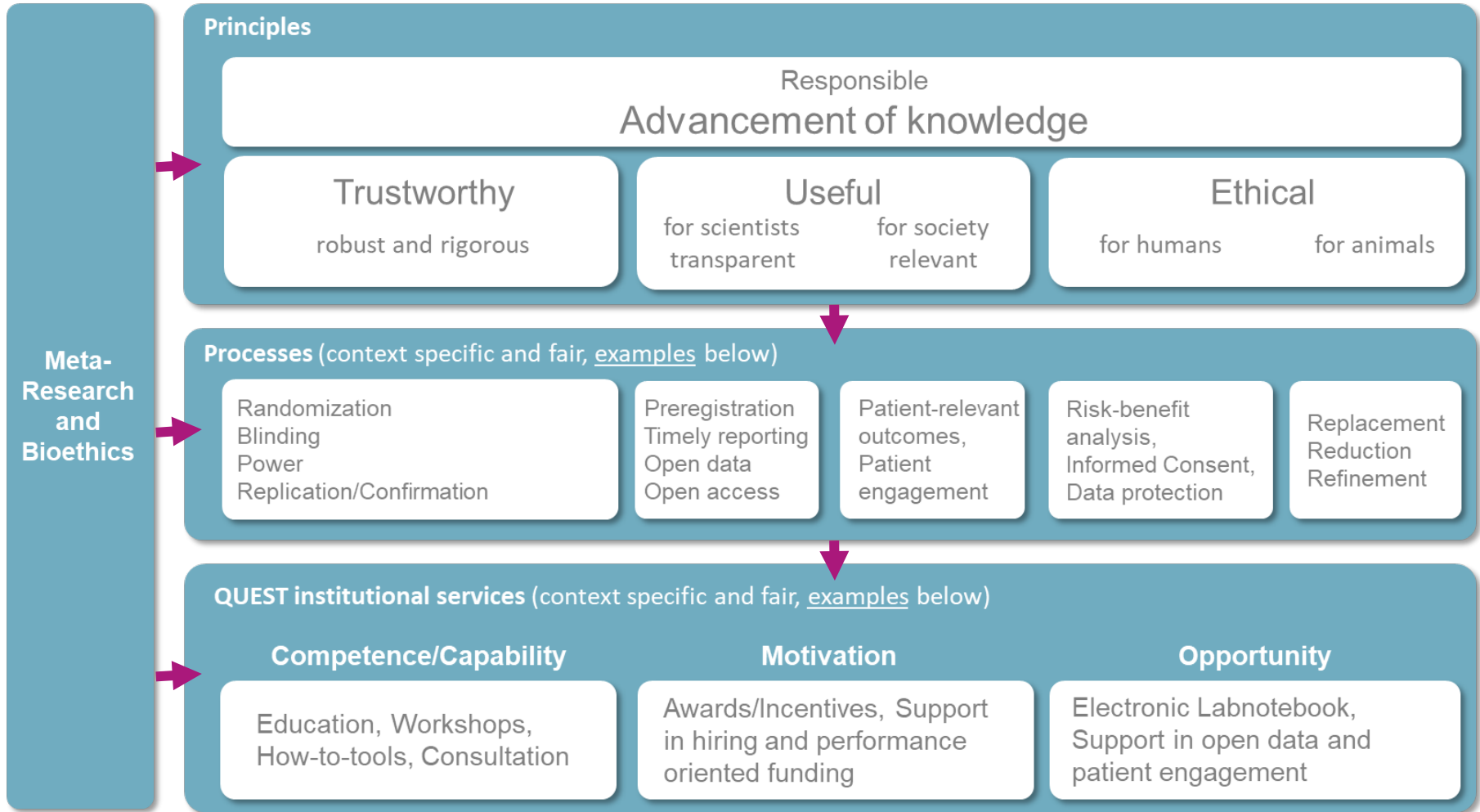
- Patients, research, teaching: „Research after hours“
- Most supervisors have clinical duties
- Many students (often without formal training)
- Little supervision - lack of professionalism
- Short contracts
- Structural underfunding (project funding ok)
- Perverse incentives - publish or perish



The QUEST- Center of the Berlin Institute of Health



The QUEST- Center of the Berlin Institute of Health



QUEST Approaches



- **Quality assurance:** promote compliance of preclinical and clinical research with standards and guidelines on design, conduct, analysis and reporting.



- **Education:** develop and implement training and teaching resources on experimental and study design, methods to reduce bias, new modes of publishing, open science, etc.



- **Open Science:** improve the accessibility and transparency of BIH research and its results through Open access and Open data.



- **Rewards and incentives:** develop, implement, and assess the impact of novel indicators incentives and metrics for rewarding researchers, appropriating funding and awarding academic degrees.

QUEST Approaches



- **Stakeholder engagement:** develop, support, and evaluate patient and stakeholder engagement activities throughout the entire process of biomedical research



- **Meta-Research:** identify opportunities for improving research practice and obtain evidence for the impact of its activities through 'research on research'.

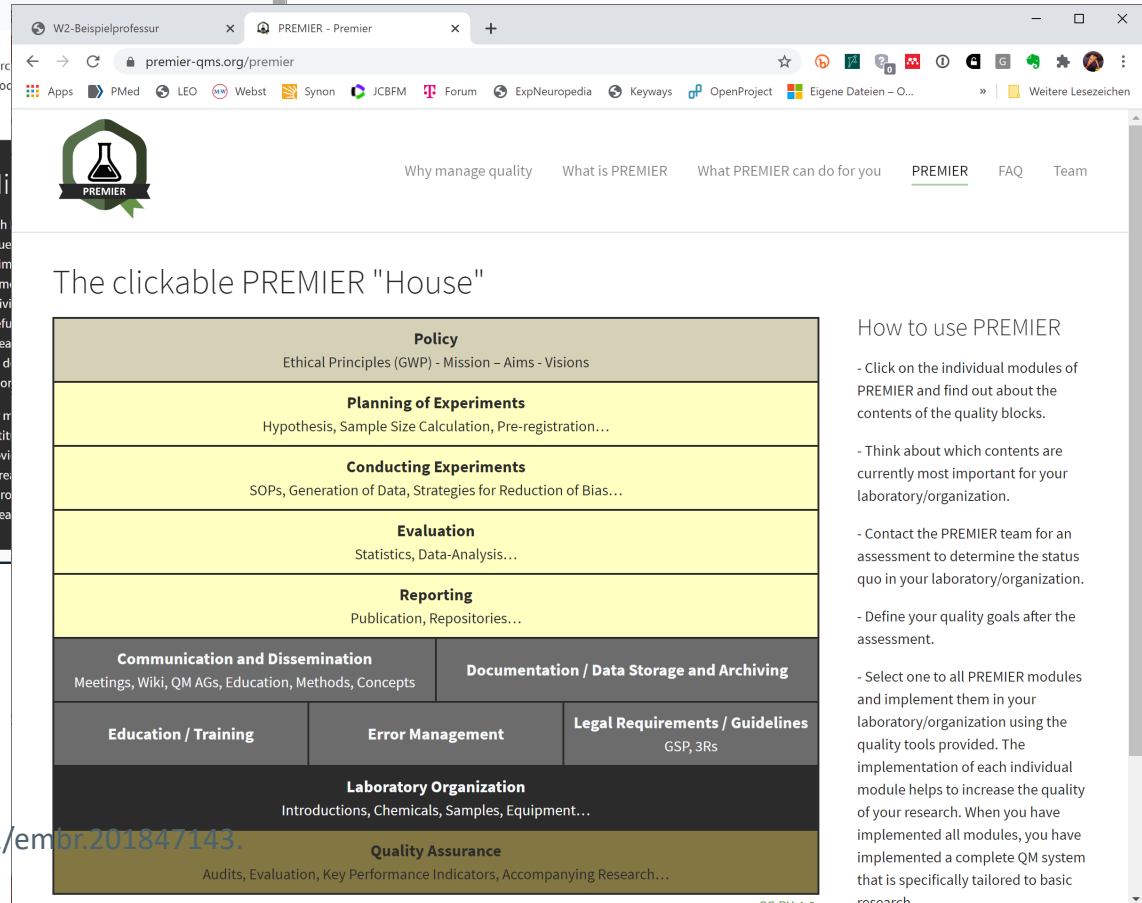
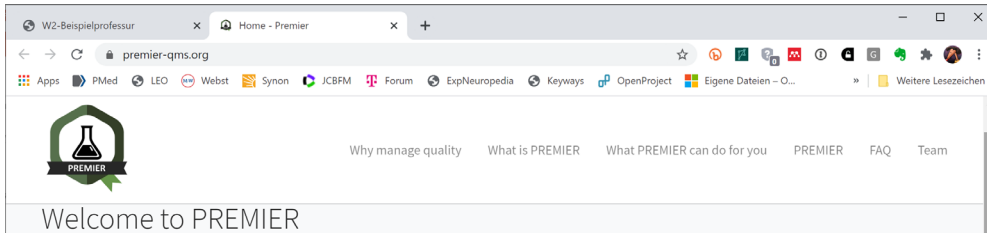


- **Bioethics of translation:** develop scientifically sound and practice-oriented recommendations on ethical requirements for research with humans, animals and sensitive data



- **Think tank:** act as advisors to stakeholders in biomedicine from funders to politics.

Quality assurance – PREMIER QM



Welcome to PREMIER

With PREMIER we would like to introduce an open source tool for quality assurance measures in academic preclinical research. Achieving robust and reproducible research results, we provide first instructions for introducing either individual quality modules specifically tailored to basic research.

Aims

PREMIER (Predictiveness and Robustness through Modular Improvement of Experimental Research) provides the scientific community with structured quality assurance. It consists of modular quality elements that assist researchers in their quest for high-quality preclinical research without stifling their creativity and draining too much resources.

PREMIER is part of an international drive by scientists, journals, funders, and institutions to improve the quality of biomedicine through research-oriented quality management.

Explainer Video



The PREMIER video describes how and why this quality assurance tool should be used.



Claudia Kurreck
Dr. Rene Bernard

Laboratory Critical Incident Reporting (LABCIRS)



Development of a mature error culture...

COMMUNITY PAGE

A Laboratory Critical Incident and Error Reporting System for Experimental Biomedicine

Ulrich Dirnagl^{1,2,3,4,5*}, Ingo Przesadzki¹, Claudia Kurreck¹, Sebastian Major¹

1 Department of Experimental Neurology and Center for Stroke Research Berlin (CSB), Charité Universitätsmedizin Berlin, Berlin, Germany, **2** German Center for Neurodegenerative Diseases (DZNE), Berlin, Germany, **3** German Center for Cardiovascular Diseases (DZHK), Berlin, Germany, **4** Excellence Cluster NeuroCure, Berlin, Germany, **5** Berlin Institute of Health, Berlin, Germany

* ulrich.dirnagl@charite.de



Abstract

We here propose the implementation of a simple and effective method to enhance the quality of basic and preclinical academic research: critical incident reporting (CIR). CIR has become a standard in clinical medicine but to our knowledge has never been implemented in the context of academic basic research. We provide a simple, free, open-source software tool for implementing a CIR system in research groups, laboratories, or large institutions (LABCIRS). LabCIRS was developed, tested, and implemented in our multidisciplinary and multiprofessional neuroscience research department. It is accepted by all members of the department, has led to the emergence of a mature error culture, and has made the laboratory a safer and more communicative environment. Initial concerns that implementation of such a measure might lead to a "surveillance culture" that would stifle scientific creativity turned out to be unfounded.

OPEN ACCESS

Citation: Dirnagl U, Przesadzki I, Kurreck C, Major S (2016) A Laboratory Critical Incident and Error Reporting System for Experimental Biomedicine. PLoS Biol 14(12): e2000705. doi:10.1371/journal.pbio.2000705

Published: December 1, 2016

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Funding: Hermann and Lilly Schilling Foundation (grant number). The funder had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. Deutsche Forschungsgemeinschaft (grant number Eac 257). The funder had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. Berlin Institute of Health (grant number). The funder had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. Bundesministerium für Forschung und Technologie (grant number 01 EO 08 01). The funder had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Competing Interests: The authors have declared that no competing interests exist.

"Learning without thought is labour lost; Thought without learning is perilous."
—Confucius, 551–479 B.C. (cited after [1])

The realization that only a disappointingly small fraction of preclinical studies can be replicated ("replication crisis" [1–3]) and the exceedingly low rate of preclinically very successful treatment strategies that actually end up benefiting patients ("translational roadblock" [4]) have kindled a discussion questioning the robustness, rigor, and productivity of current experimental biomedical research. Numerous systematic reviews and meta-analyses in various medical fields have exposed a prevalence of low internal validity of this type of research resulting from bias (such as selection, performance, outcome, and reporting bias) in addition to exceedingly low sample sizes and consequently low statistical power. Alarmed by the waste of resources and the harm to patients this might cause, researchers, journals, funders, and

Open Science Services, e.g. Electronic Laboratory Notebook



F1000Research

F1000Research 2016, 5:2 Last updated: 25 JUL 2016

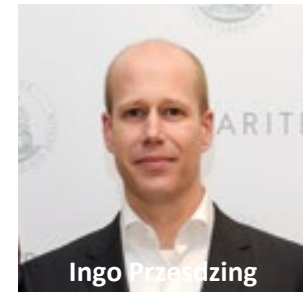


OPINION ARTICLE

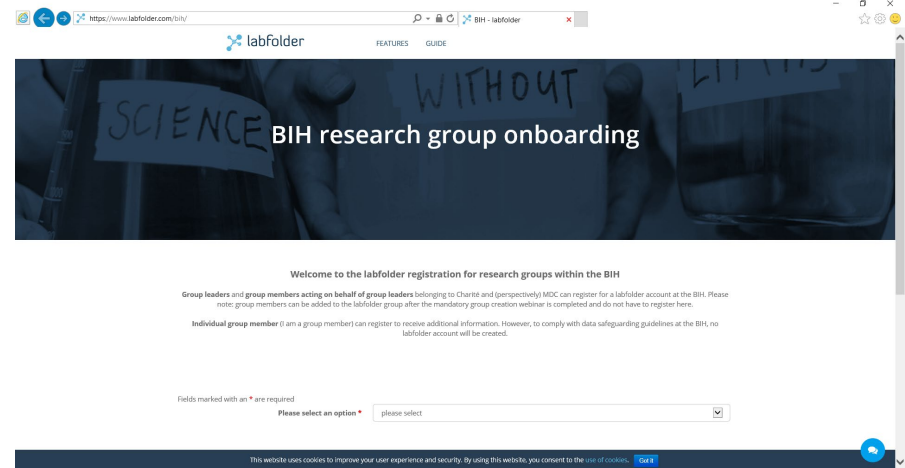
A pocket guide to electronic laboratory notebooks in the academic life sciences [version 1; referees: 4 approved]

Ulrich Dirnagl¹⁻⁵, Ingo Przesdzing¹

F1000Research 2016, 5:2 (doi: [10.12688/f1000research.7628.1](https://doi.org/10.12688/f1000research.7628.1))



- Onboarding
- Training
- Support
- First exposure to research data management (RDM)
- > 2000 registered users at Charite/MDC
- Evaluation



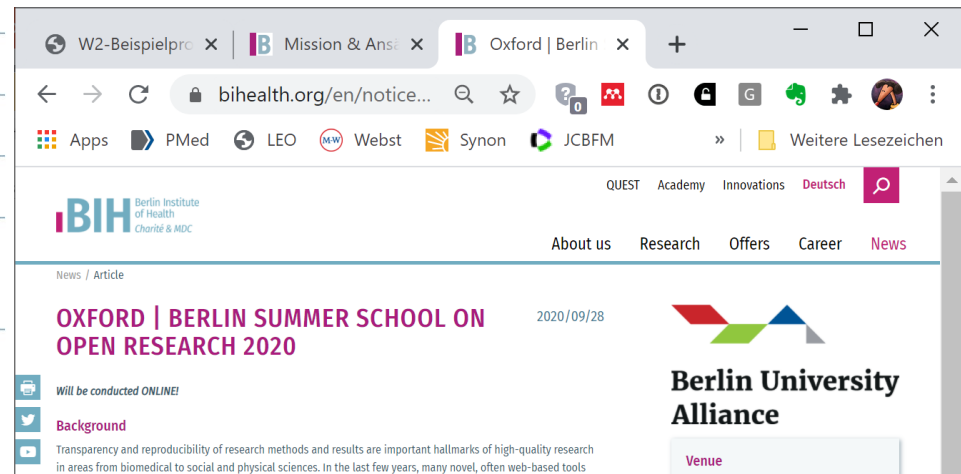
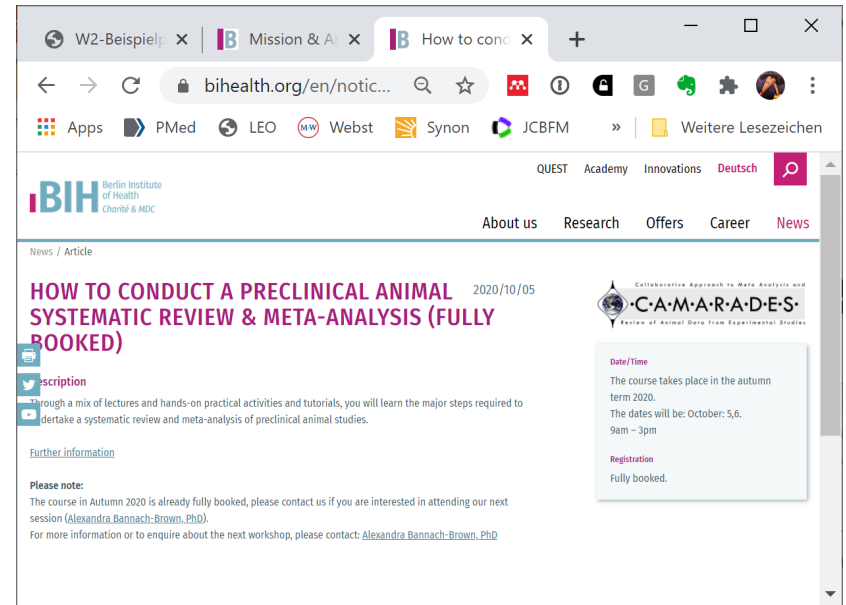
OVERVIEW ON REPEATING COURSE PROGRAM



- ✓ Advanced Reproducible Research with R
- ✓ Fortbildungsinitiative Fakultät: Statistik
- ✓ Fortbildungsinitiative Fakultät: Qualitätssicherung
- ✓ Introduction to Reproducible Research with R
- ✓ Introduction to electronic labbooks
- ✓ Open Data Workshop
- ✓ Presentation of QUEST activities to research groups
- ✓ QUEST criteria information
- ✓ Statistical Lit
- ✓ PhD course of research mod bedside.



Dr. Ulf Tölich



Open Science: QUEST Toolbox - Fiddle (shiny app)

Where and how to publish null / neutral results



This "match-making" tool helps you to identify alternate ways of publishing information from well-designed experiments that is often difficult to publish in traditional journals (i.e. null or neutral results, datasets, etc.). Choose the criteria that are most relevant to you, or choose the scenario that best reflects your situation. The tool will highlight the most suitable options. Check out our explainer video [here](#).

Options

Choose the criteria that are most important to you.

I have a

- unanalyzed dataset
- stand-alone finding or results from a small study
- results from a full-scale study
- rejected manuscript

Money I have to cover publication cost

- 0
- up to 1000 EUR/1100 US\$
- up to 2000 EUR/2200 US\$

I want the outcome to be indexed in

- Pubmed
- Pubmed Central
- Web of Science
- Scopus
- CrossRef
- Google scholar

I want my outcome to be peer-reviewed

- any
- yes
- no

I want my publication or dataset to appear immediately

- yes
- no

If these options aren't helpful, try our list of scenarios instead:

[Go to scenarios](#)

Dr. Evgeny Bobrov



	Data Repository	Micropublication	Preprint publication	Data journals	Publishing platform	Journal open to null results
Description	Platforms that allow upload of research datasets to make them citable and reusable.	Designed for unpublished observations, negative/neutral results that do not require a narrative story.	Platforms for unpublished research manuscripts that allow others to immediately view the manuscript.	Journal article that focuses on presenting a dataset with metadata and the methods used to acquire the dataset.	Articles are published without editorial filtering; peer-review happens after (immediate) publication of the article.	Traditional journals that also publish null results.
Providers	Zenodo , FigShare or Dryad , use re3data to search for disciplinary repositories	ScienceMatters , BMC Research Notes	biorxiv , medRxiv , osf.io	Scientific Data , Data, Data in Brief , F1000 Data Note , many disciplinary journals (e.g. GigaScience)	F1000Research , Open Research Central	PeerJ , PLoS One , multiple BMC journals and many other disciplinary journals
Effort	low effort	low effort	medium effort	some effort to prepare manuscript/data	some effort to prepare manuscript/data	some effort to prepare manuscript/data
Costs in EUR	free of charge	600 - 1300 €	free of charge	up to 1500€	up to 1000€	up to 1600€
Costs in US\$	free of charge	670 - 1440 \$	free of charge	up to 1670\$	up to 1100\$	up to 1780\$
Time to publication	immediate	typically 1-3 months	immediate	typically 1-4 months	immediate	typically 1-6 months
Recognition	citations of the dataset	citations of article, article can be listed in CV (future handling of such articles is open)	citations of article, article can be listed in CV (not universally accepted at this point)	citations of article, article can be listed in CV	citations of article, article can be listed in CV (not universally accepted at this point)	citations of article, article can be listed in CV
Publishing venue can have Impact Factor	no	yes	no	yes	no	yes
Peer-review	no	peer-review	post-publication review possible	peer-review	peer-review	peer-review
DOI	yes	yes	yes	yes	yes	yes
Versioning	yes	no	yes	yes	yes	no
Indexing:						
Pubmed	no	no	no	yes	yes	yes
Pubmed Central	no	some	no	some	yes	yes
Web of Science	no	some	no	most	no	yes
Scopus	no	some	no	some	no	yes
CrossRef	no	some	yes	some	yes	yes
Google Scholar	no	yes	yes	yes	yes	yes
Additional information		integrated open data upload, reviewer compensation, often only one reviewer	preprint deposit accepted by large majority of journals and often offered as integral step in submission process (see SHERPA/RoMEO)			

<http://s-quest.bihealth.org/fiddle/>

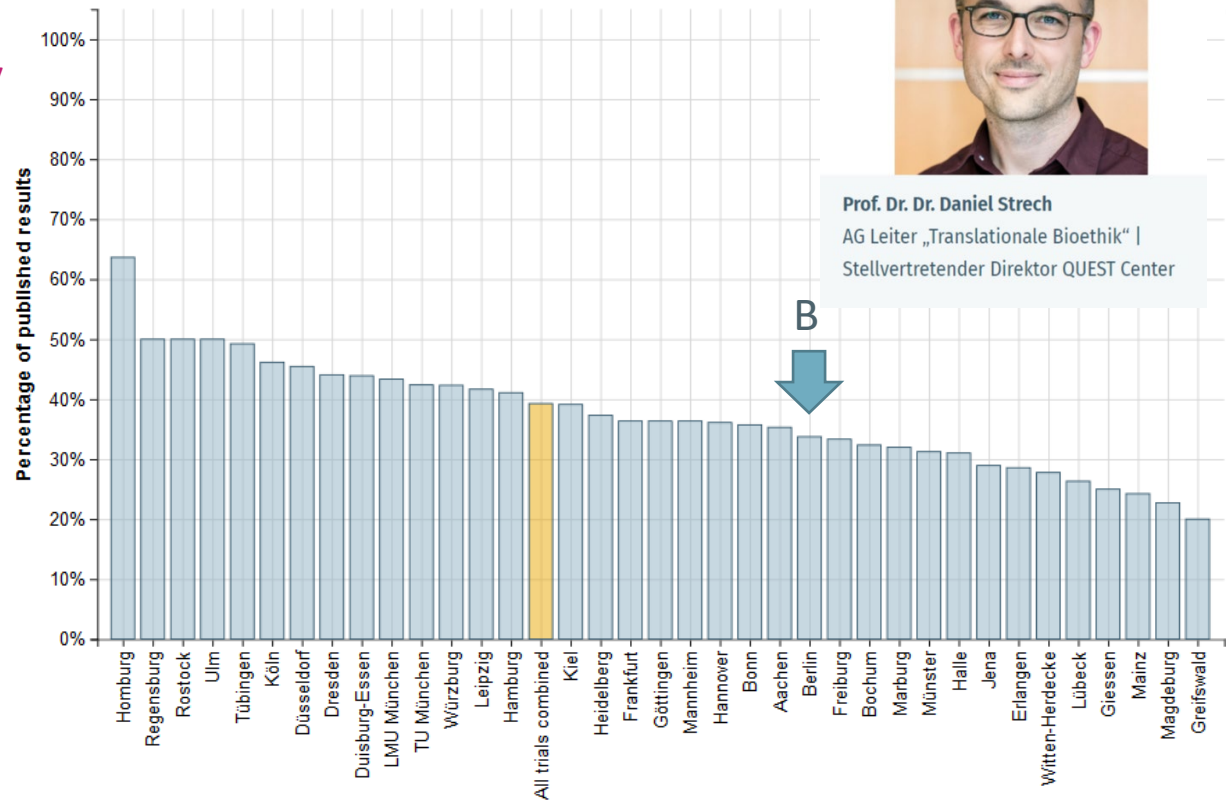
(Non) Publication of clinical study results of University Medical Centers (UMCs) in Germany



2 years after study completion
(summary results in registry or publication or internet)

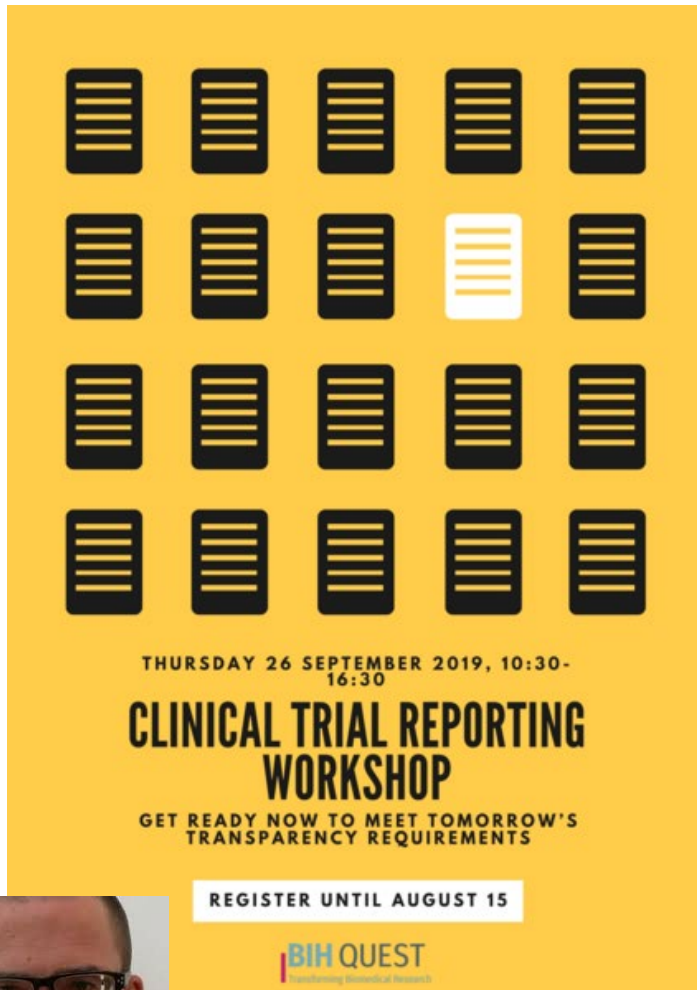
39%

Result dissemination from clinical trials conducted at German university medical centers was delayed and incomplete, Wieschowski, Susanne et al. Journal of Clinical Epidemiology, Volume 115, 37 - 45



Prof. Dr. Daniel Strech
AG Leiter „Translationale Bioethik“ |
Stellvertretender Direktor QUEST Center

How to improve result dissemination?



THURSDAY 26 SEPTEMBER 2019, 10:30-16:30

CLINICAL TRIAL REPORTING WORKSHOP

GET READY NOW TO MEET TOMORROW'S TRANSPARENCY REQUIREMENTS

REGISTER UNTIL AUGUST 15

BIH QUEST
Transforming Biomedical Research

The poster features a 4x5 grid of 20 document icons. The icon in the second row, fourth column is white, while all other icons are black. The text is centered and uses a clean, sans-serif font.



Dr. Till Bruckner

Are many of your university's clinical trials missing results on trial registries?

Find practical guidance for:

- ✓ Adopting strong policies
- ✓ Establishing oversight over all your clinical trials
- ✓ Uploading results onto trial registries



BIH QUEST
Transforming Biomedical Research
Quality | Ethics | Open Science | Transparency

<https://bit.ly/3qkKorr>

At Charité:

- Trial registry
- Obligatory registration in DRKS, EUDRACT oder Clinicaltrials.gov (tied to ethics approval)
- Assistance with registration and study results upload (automated checks)

Patient & Stakeholder Engagement



Patient-led research #WeAreNotWaiting: „Do-it-Yourself Artificial Pancreas“-Systems



Trainings:

- Digital research workshop
„Patient & Stakeholder Engagement @Charité“
- Implementation of a national Training
Programm

Goal:

- PSE as ‚natural‘ element of the research
process
- QUEST PSE connects researchers and
patients



Stakeholder Engagement

Was ist Stakeholder Engagement?

Unter Stakeholder Engagement in der Gesundheitsforschung verstehen wir die aktive Beteiligung von Patient*innen und anderen Stakeholdern am Forschungsprozess. Hierbei ist nicht der Einschluss von Proband*innen in Studien gemeint, sondern es geht darum, dass der Forschungsprozess mit den Stakeholdern gemeinsam gestaltet wird.

[Weitere Informationen](#)



Projekte im Bereich Patient & Stakeholder Engagement

Hier finden Sie Informationen zu Projekten im Bereich Patient & Stakeholder Engagement des QUEST Center for Transforming Biomedical Research.

[Weitere Informationen](#)



Stakeholder Engagement im BIH-Forschungsraum

Hier finden Sie Informationen zu aktuellen und abgeschlossenen Projekten im Bereich Patient & Stakeholder Engagement im Forschungsraum des BIH (Charité und MDC).

[Weitere Informationen](#)



Forschungspolitik und Förderung von Stakeholder Engagement in der Gesundheitsforschung

Während die aktive Beteiligung von Patient*innen und weiteren Stakeholdern an Studien in der Gesundheitsforschung in anderen Ländern teilweise schon zum Standard gehört, gibt es in Deutschland noch Nachholbedarf. Aber auch hierzulande gibt es Ausschreibungen und Fördermöglichkeiten, die den besonderen Erfordernissen von Partizipation in der Forschung Rechnung tragen.

[Weitere Informationen](#)



Dr. Sarah Weschke



Incentives and Rewards



Source: Slate

Open data LOM 2020



- 290.000 Euros for 2020 (200.000 in 2019)
- publications with open data 2016-2018
 - with first and/or last author with Charité, MDC or BIH affiliation
 - between 500 – 2000 Euros per publication with open data (depending on number of shared 1st/or last authorships positions and final number of eligible persons for LOM 2020)
- allocated on institutional level („Einrichtungsebene“) to incentivize the set up of open data facilitating structures, knowledge base, support etc...

Dr. Evgeny Bobrov



Currently available QUEST awards



The QUEST 1,000 € Patient & Stakeholder
Engagement Award

***Foster the involvement of patients and other
stakeholders in the research process!***

The QUEST 1,000 € Open Data Reuse Award
Make use of Open Data!

The QUEST 1,000 € Preregistration Award
***Preregister your preclinical studies challenge
– Increase the credibility of your results and
get early credit for your ideas!***

The QUEST 1,000 € NULL Results And
Replication Study Award
***Publish your NULL results – Fight the negative
publication bias!
Publish your Replication Study – Fight the
replication crises!***

Professorship Application Service Portal

Applicants

Professorship Application Service

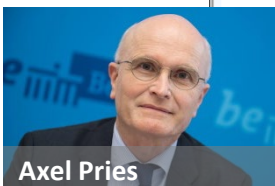
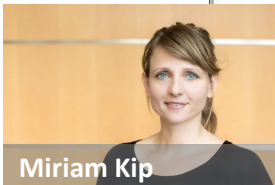
Home Registration Login FAQ

Applicants-Management Charité

Currently Vacant Professorships

Description of Professorship	calls	notes	date due
W3 Universitätsprofessur für Hämatologie und Onkologie m. S. Lymphome/Multiples Myelom	call for applications	application notes	28.09.2017
W3 Universitätsprofessur für Onkologie			
Further vacancies at Charité			

“The Charité attaches great importance to transparent, replicable research and supports the objectives of Open Science (Open Access, Open Data). This includes the registration of studies in registries (clinicaltrials.gov, DRKS, etc.), the preregistration of studies, and the publication of negative and zero results. **How have you been pursuing these goals so far and what are your plans for the future?**”





Indikatoren für C x | Indikatoren für C x | H Helmholtz Open x | H Horizont Europa x | Indikatoren für C x | MERIT-PROF x | MERIT-PROF x

s-quest.bihealth.org/MERIT_Test/

Apps | PMed | LEO | Synon | OpenPaymentsData... | JCBFM | Forum | ExpNeuropedia | Keyways | OpenProject | Webst | Weitere Lesezeichen

W2 - Beispielprofessur

- Startseite
- Datenschutz und Verswiegenheit
- Ausschreibungstext
- Bewerbungen
- Auswahl Bewerber*innen
- Wissenschaftliches Profil
- 5 wichtigsten wissenschaftlichen Beiträge
- Wichtigste Drittmittelprojekte
- Patente, Ausgründungen & Innovationen
- Beitrag Offene Wissenschaft
- Kollaborationen & Interaktionen
- Publikationen
- Lehrverzeichnis, Lehrevaluation & Kommentar
- Lehrkonzepte
- Klinisches Profil
- Gleichstellungskonzepte
- Führungsqualitäten
- Professurkonzepte
- Curriculum vitae
- Protokolle
- Externe Gutachten
- Literatur

Beitrag Offene Wissenschaft

Hier kommt ein Text über offene Wissenschaft.

1. Bitte wählen Sie die gewünschten akademischen Altersgruppen der Bewerber*innen:

- 2-7 Jahre
- 8-12 Jahre
- =>13 Jahre

Anwenden

Bitte wählen Sie die gewünschte Filtermöglichkeit:

- Alle Publikationen
- Nur Erst- oder Letztautorenschaft
- Nur Ko-Autorenschaften

Bitte wählen Sie die gewünschte Filtermöglichkeit:

- Alle Jahre
- Die letzten 5 Jahre

Show **10** entries Search:

Bewerber*in	Beitrag Offene Wissenschaft (Eigenangabe)
Anonym	<p>f8bs5af8bs5a</p> <p>Die Ziele von Open Science begrüße ich und registriere daher klinische Studien und auch experimentelle Studien bereits seit Jahren bei clinicaltrials.gov. Die BMBF-geförderte SIMCODE-Studie wird nach finaler Genehmigung durch LAGESO und BfArM ebenfalls dort registriert und individuelle Patientendaten dieser Studie nach vollständiger Anonymisierung gemäß den Empfehlungen des International Committee of Medical Journal Editors mit interessierten Wissenschaftler*innen geteilt (Open Data). Zudem werden experimentelle Studien in unserer AG regelhaft in OSF prä-registriert. Auch die Publikation von Null-Ergebnissen halte ich für sehr wichtig. Daher publizieren wir diese regelmäßig und haben auch bereits den QUEST Null Results Award erhalten. Ferner publizieren wir zunehmend in Open Access Journals und haben eine Open Science-Beauftragte in</p>

Auswahl Indikatoren

Open Data

Open Data Proportion of Publications

Identifier	Proportion
f0qxpbf0qxp	0.25
25ednu25ednu	0.35
v296mpv296mp	0.40
2cnfrz2cnfrz	0.20
f8bs5af8bs5a	0.15
k2vruck2vruc	0.10
q8d1pcq8d1pc	0.10
l1munw11munw	0.10
zdk0buzdk0bu	0.25
4aax484aax48	0.10
sijskysjskys	0.35
l1f3n1l1f3n	0.10
lcs7o6lcs7o6	0.10
ndn6whndn6wh	0.10
mnzc35mnzc35	0.10
198ean198ean	0.10
5273ek5273ek	0.10
3eu96m3eu96m	0.10
2kapwl2kapwl	0.25
cc2whoc2who	0.10

Open Data

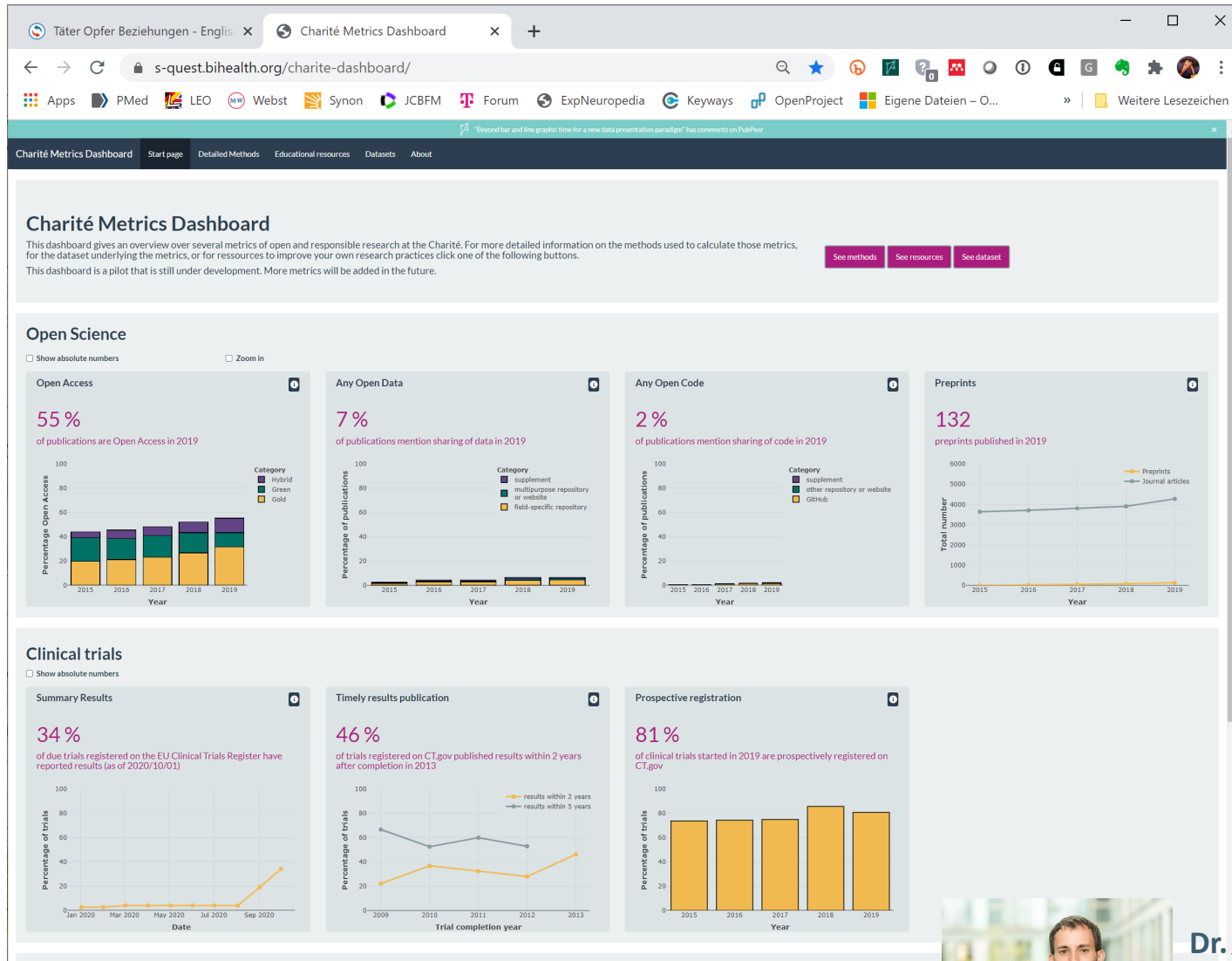


MERIT Bewertungstool für Berufungen (MERIT-PROF)

biometrie-formbl...docx

Alle anzeigen

Open Science – Charité Dashboard



Dr. Nico Riedel
BIH QUEST
 Transforming Biomedical Research

SPOKES: Stimulating grassroots activities

1. SPOKES Fellows

Five selected SPOKES Wellcome Trust Translational Fellows (**mid career**) receive up to 25 000 Euros over 18 months to undertake projects that add value to their own research 'micro-environment' (i.e. research group, department, or clinic). Value will be defined as improving the quality, reproducibility, generalizability or the validity of the fellows' own research.

2. SPOKES Think Tank

Twelve selected **ECRs** are tasked with identifying and tackling local hurdles to high value translational research. During twelve monthly full-day meetings, the Think Tank analyzes hurdles/bottlenecks for high-quality research and subsequently propose and (where possible) implement solutions. This will be supported by a small budget ('seed money') allocated at the joint discretion of all participants.



Dr. Tracey Weissgerber



SPOKES Fellows 2020/21



Katarina Braune + Hanne Ballhausen

The OPEN Project

- Study of DIYAPs users and investigation of barriers to access



Felix Fischer

PROM2PRO

- Calibrating scales for patient-reported outcome data with new tools



Sophie Piper

iBike Smart Learner

- Development of new statistics teaching tool for research community



Toivo Glatz + Jessica Rohmann

PEERSpectives

- Expansion of peer review course pairing ECRs with journal editors



Wolf-Julian Neumann

FAIR Translational Neuromodulation

- Implementation of transparency + open science practices in new lab

More Info:

http://tiny.cc/SPOKES_Fellows_en

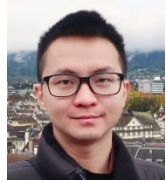
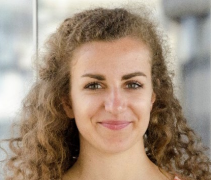
http://tiny.cc/SPOKES_Fellows_de

Think Tank (12 Fellows selected)

- A podcast on the topic of research culture in Berlin, and
- A new platform for early-career researchers to connect across the clinical – preclinical “divide” and share expertise



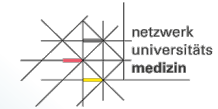
Philipp Van Kronenberg
Deetje Iggena
Gabriel Janach
Christine Knoll



Evelyn Medawar
Hung Lo
Constantin-Yves Plessen
Daniel Parthier



Marta Oliveira
Andrea Salazar-Lazaro
Joachim Fuchs
Alexandra Damerau



Robustness

Transparency

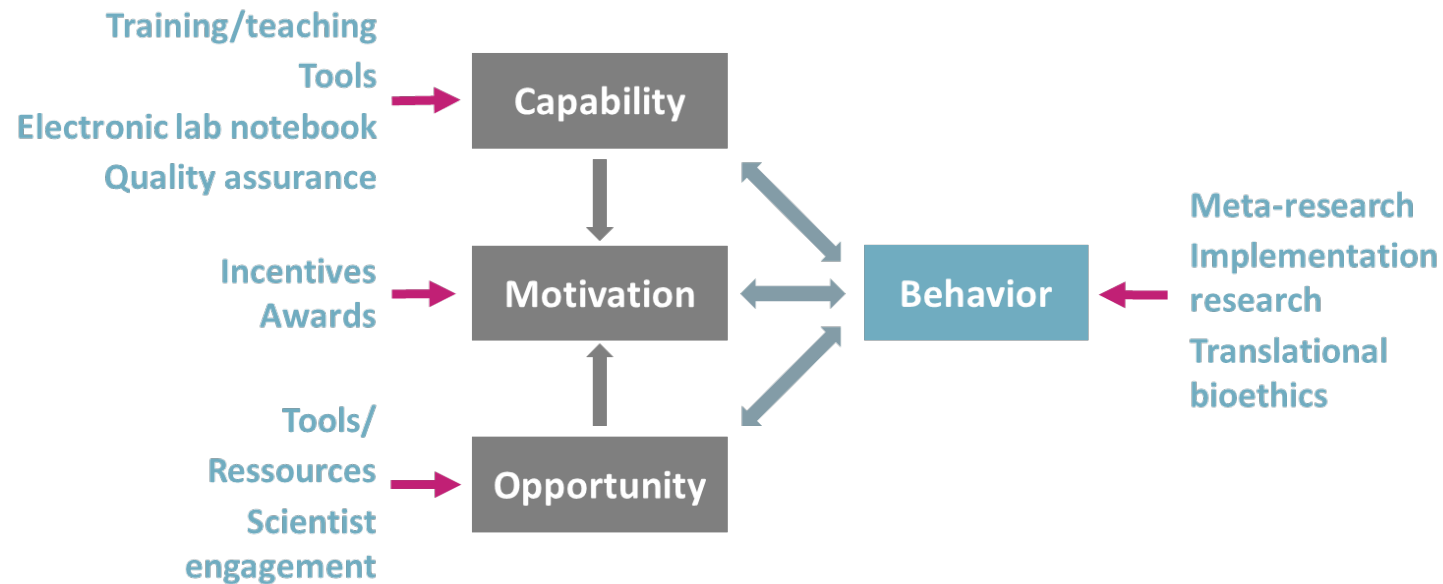


Ethics

Relevancy

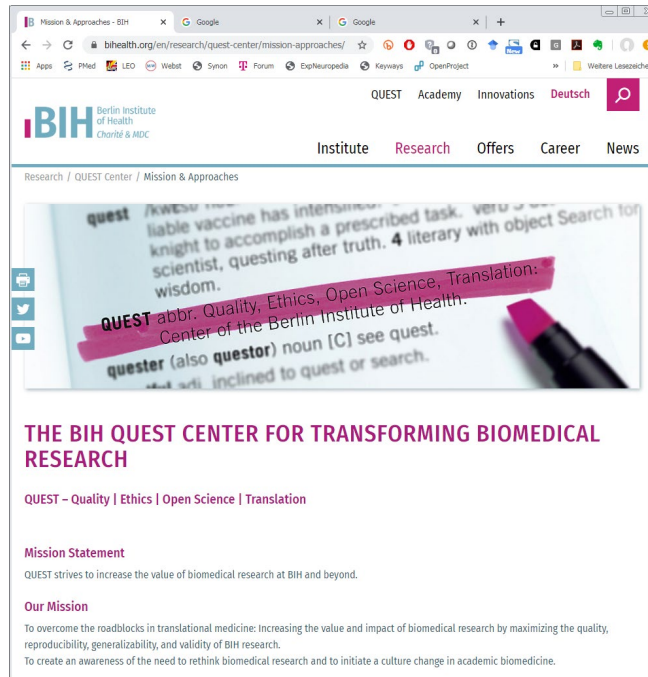


QUEST - A complex behavior change intervention



Slides at <http://bit.ly/>

quest.bihealth.org



The screenshot shows a web browser window displaying the website quest.bihealth.org. The page title is "Mission & Approaches - BIH". The navigation menu includes "QUEST", "Academy", "Innovations", "Deutsch", "Institute", "Research", "Offers", "Career", and "News". The main content area features a large image of a dictionary page with the word "quest" highlighted in pink. Below the image, the text reads: "QUEST abbr. Quality, Ethics, Open Science, Translation: Center of the Berlin Institute of Health." and "quester (also questor) noun [C] see quest." Below this, the heading "THE BIH QUEST CENTER FOR TRANSFORMING BIOMEDICAL RESEARCH" is displayed, followed by the tagline "QUEST – Quality | Ethics | Open Science | Translation". The "Mission Statement" section states: "QUEST strives to increase the value of biomedical research at BIH and beyond." The "Our Mission" section states: "To overcome the roadblocks in translational medicine: Increasing the value and impact of biomedical research by maximizing the quality, reproducibility, generalizability, and validity of BIH research. To create an awareness of the need to rethink biomedical research and to initiate a culture change in academic biomedicine."



@dirnagl