CAPTURING AND COMMUNICATING THE IMPACT OF ACADEMIC RESEARCH

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DEFINING IMPACT

The Oxford English dictionary gives two definitions of the word impact:

1. the action of one object coming forcibly into contact with another; and,
2. a marked effect or influence.
RESEARCH EXCELLENCE FRAMEWORK (REF)

• Country-wide initiative to assess the quality of research in UK higher education institutions.

• The UK has conducted these type of assessments approximately every five years since 1986

• The results are used to allocate research funds to universities.
154 UK institutions made submissions in 36 subject-based units of assessment (UOAs).

Research was assessed and weighed on the basis of three main criteria:
1. the quality of research outputs – 65%;
2. the vitality of the research environment – 15%;
and,
3. the wider impact of research – 20%.
IMPACT – REF’S DEFINITION

Demonstrable contribution that research makes beyond academia

• To the economy, society, culture, national security, public policy or services, health, environment, quality of life, etc.

• Return on investment for taxpayer
REF 2014
CASE STUDY FOR IMPACT

King’s College London

• Increased to 7th overall (REF2014) from 22nd (RAE2008)
• Increased in power ranking (measure of research impact) to 6th (REF2014) from 11th (RAE2008)
• These increases resulted in an increase share of public funds available to higher education institutions:
  • 2.37% to 2.85%
  • Total funding from UK gov’t: £1.6 billion annually
  • Increase for King’s: £38 million to £46 million (+$13.4M CAD)
POTENTIAL PARTNERS AND THEIR NEEDS & INTERESTS

- Knowledge
- Society
- Your Research
- Economy
- People
HOW TO PLAN AND DEVELOP RESEARCH IMPACT ACTIVITIES

Knowledge:
• Scientific Advancement
• Techniques

People:
• Skills
• People Pipeline

Economy:
• Wealth creation
• Inward investment
• New companies
• Products and procedures

Society:
• Quality of life
• Health
• International development
• Policy
http://www.rcuk.ac.uk/innovation/impacts/
WHAT DOES IMPACT MEAN?
RESEARCHER VERSUS FUNDER
WHAT DOES IMPACT MEAN? RESEARCHER VERSUS FUNDER

H-Index: On average represents publication productivity but can be skewed by many factors (e.g. length of career, reviews versus original research, lag phase between publication and citation.

Citation Benchmarking: Where does a particular paper sit within the field? Takes into account age of paper, citation count and discipline.
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Funders Determination of Impact:
• Does the research improve products, competitiveness, productivity, etc?
• Has the funding been a good value to the taxpayer, shareholder, industry, etc?
• Does society benefit from outcomes of the research?
• How accessible are the research outputs to the general public, other researchers, other interested parties?
WHAT DOES IMPACT MEAN?
RESEARCHER VERSUS FUNDER

ACADEMIC: within a discipline; significant advances in understanding, methods, theory and application.

ECONOMIC & SOCIETAL: research-related knowledge and skills benefit individuals, organisations and nations; fostering global economic performance, and specifically the economic competitiveness of home nation; increasing the effectiveness of public services and policy; enhancing quality of life, health and creative output.
UK EXAMPLE – BBSRC

• be project specific and have very clear deliverables
• describe societal and economic deliverables and milestones instead of focussing on just scientific deliverables
• plan to deliver activities pertinent to the project instead of a focus on track record or routine activities for university post
• consider broader beneficiaries, likely impact on them and appropriate mechanisms for realising these potential impacts
• be focussed on knowledge exchange and impact generation rather than narrowly focused, end focused or purely for dissemination purposes
• be clearly laid out in terms of timelines when each impact activity will be carried out

https://www.bbsrc.ac.uk/funding/apply/application-guidance/pathways-impact/
HOW TO DEMONSTRATE IMPACT?
RESEARCHER OR INSTITUTION

Who is responsible for identifying, planning, implementing, promoting, highlight and archiving research impacts?
AUSTRALIA

• National Innovation and Science Agenda (NISA)
• Impact and engagement assessment, which “will examine how universities are translating their research into economic, social and other benefits and encourage greater collaboration between universities, industries and other end-users of research”
• Pilot was undertaken in 2017
• National roll-out in 2018
MILLIONS OF YOUR TAX DOLLARS TO...
EXERCISE SHRIMP

...AND OTHER NATIONAL SCIENCE FOUNDATION WASTE
The STAR METRICS (Science and Technology for America's Reinvestment: Measuring the Effects of Research on Innovation, Competitiveness, and Science)

- Developed by the National Institutes of Health (NIH) and the National Science Foundation (NSF)
- Goal is to work with research institutions to build a scientific data infrastructure
- Federal RePORTER is a searchable database of scientific funding from NIH and NSF
- Created for transparency and to engage the public, the research community, and funding agencies regarding federal science research investments
An unidentified government official stated: “Canada has been lagging behind other nations in terms of applied scientific research and putting it to commercial use. Our government is taking steps to correct that — but not at the expense of basic research.”

Gary Goodyear, minister of state for science and technology, defended the government, saying the Tories have made historic investments in science, technology and research to create jobs and grow the economy.
PILOT PROJECT
FACULTY OF ENGINEERING AND
APPLIED SCIENCE
TYPES OF RESEARCH IMPACTS

Academic impact – demonstrable contribution that research makes to scientific advances, across and within disciplines, including significant advances in understanding, methods, theory and application.

Economic and societal impact – demonstrable contribution that research makes to society and the economy, of benefit to individuals, organizations and nations.
QUANTITATIVE MEASUREMENTS

- Citation counts
- Journal impact factors
- Book impact factors
- Book reviews
MEASURES OF ESTEEM

• International conference organization, keynotes and plenary lectures
• Invitation to participate in global research initiatives
• Influence on industry/government/public policy/community/cultural organizations
• Successfully acquired research grants
• Successfully acquired research projects
• Awards and prizes
• Partnerships
MEASURES OF ESTEEM

- Editorships
- Research fellowships
- Membership in learned academies and research councils
- Membership in statutory committees
- Patents (that are being used)
- Registered designs
- Research commercialization income
- Literary and artistic exhibitions
- Regional economic development forums
TRAINING AND EDUCATION

• HQPs
• Major course / curriculum development
ENGAGEMENT

• Direct service (people)
• Direct Service (product)
• Community research
• Community building
• Community education
• Economic development
• Community organization
PROJECT RESULTS

≈ 95% of FEAS participated
Used for Marketing and Communication purposes
Committees feedback:
• Change activity reports to reflect impacts
• Add to faculty webpages
• Helped them write for the layperson
• Faculty need training for writing and media
• Need to invest in staff
CHALLENGES

• Huge time and financial commitment
• Academic time constraints and priorities
• Ability to translate research into impacts
• Institutional culture – impacts can be good for research
• Achieving impacts can take a long time – time lag
• Who is responsible for identifying, planning, implementing, promoting, highlighting and archiving research impacts?