European research integrity initiatives and their potential impacts at national and local level

Dr Maura Hiney, Health Research Board

HRB Health Research Board

Research. Evidence. Action.

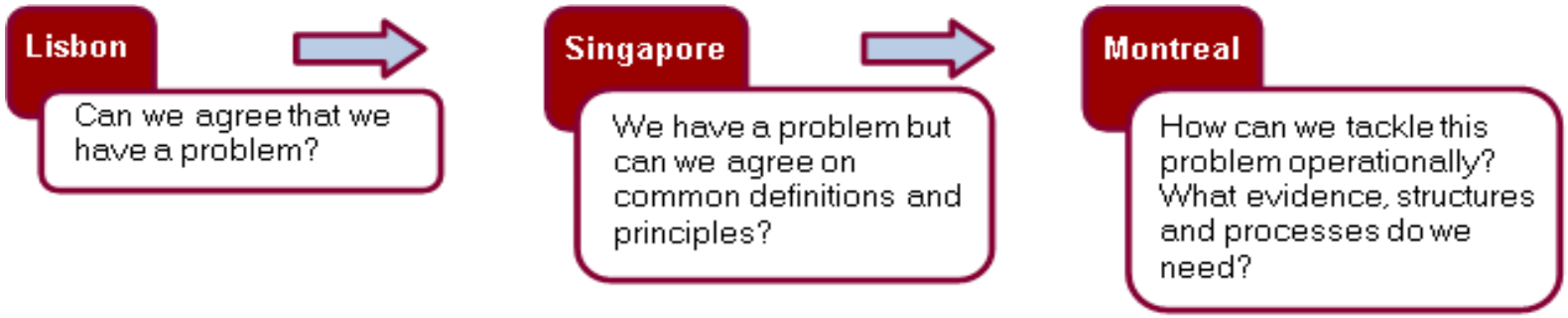
Research Integrity: What I mean by it

Responsible decisions on, planning, conduct and dissemination of research*

Proposal → Research/ Experimentation → Analysis → Dissemination

* Definition curtesy of Sabine Kleinerd, Lancet Editor-in-Chief

Evolution in thinking about RI



How can we tackle this problem: what evidence, structures and processes do we need?

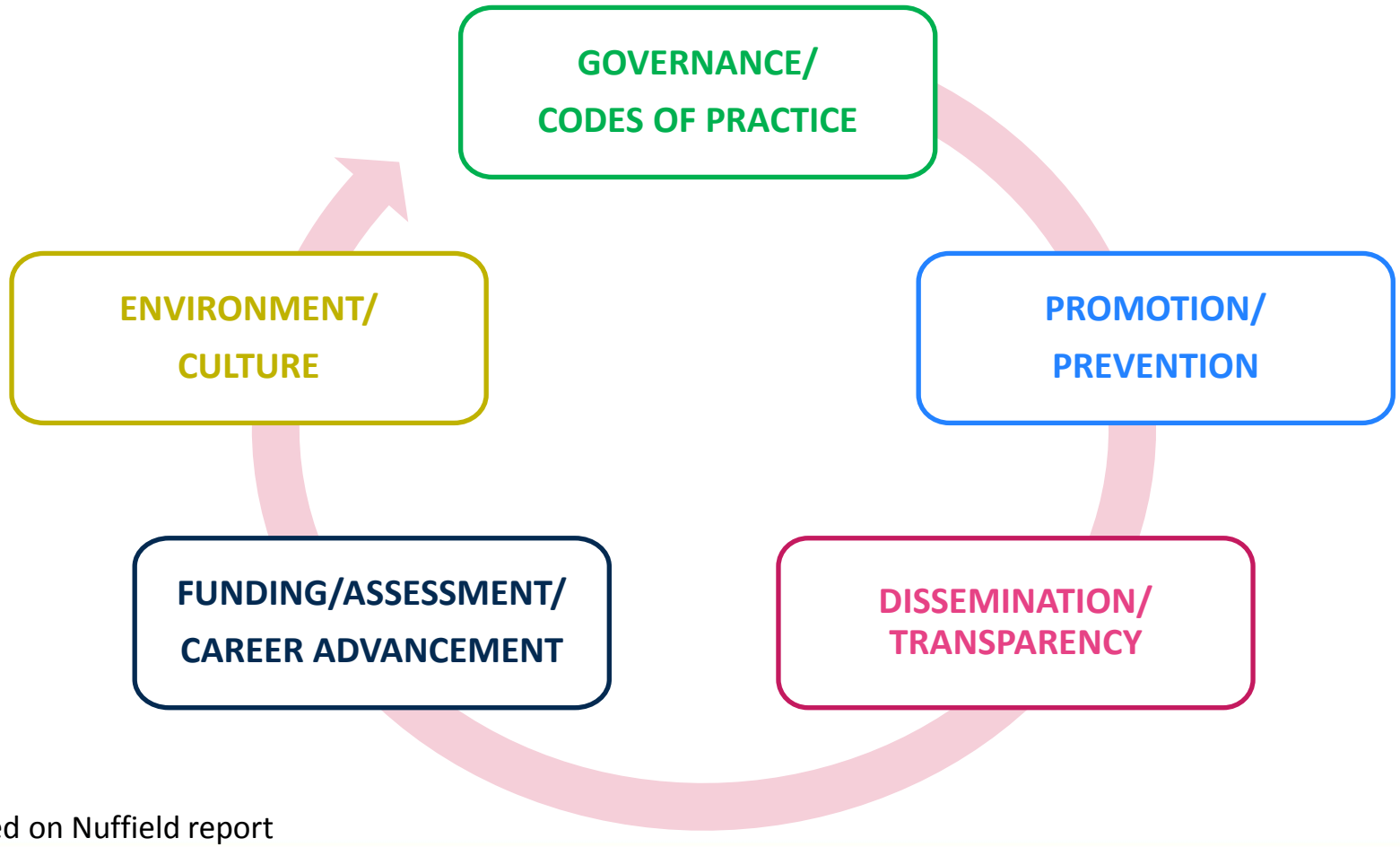
- Montreal focused on cross-national, cross-disciplinary and cross-sector partnerships
- Rio focused on Improving Systems to Promote Responsible Research
- Amsterdam will focus on Transparency and Accountability

When research integrity fails

Most common factors identified in literature for misconduct

- Absence of robust policies at a national or institutional level
- Academic career system and metrics used to assess research quality and excellence
  - Competition to attract funding (for research and sometimes salary)
  - Funded research must be innovative and important
  - Emphasis on publication in high impact journals
  - Pressure to produce ‘publishable’ results
- Socio-cultural background (e.g. ‘developmental’ versus ‘regulatory’ environment)
- Lack of promotion, preventative training and mentoring
- Career stage: early vs later career stage

Research integrity has many dimensions*



* Modelled on Nuffield report

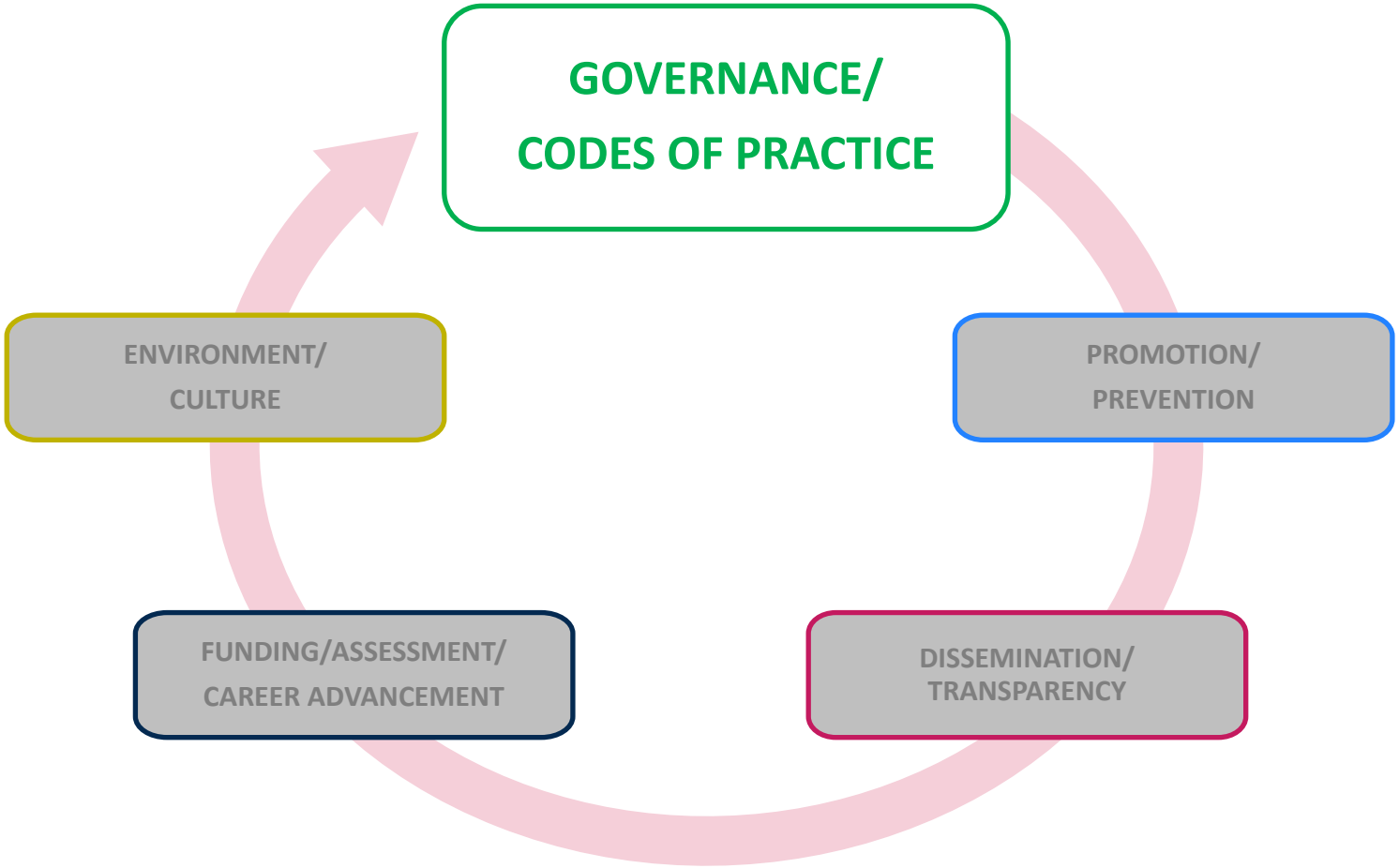
National/international players in this space

Governmental organisations

a. European Commission
b. OECD
c. UNESCO (COMSET)
d. Funding agencies
e. Research ministries
f. Universities
g. Etc. ……

Non-governmental organisations

a. ESF/Science Europe
b. ALLEA
c. InterAcademy Partnership
d. ENRIO (+ ENERI)
e. Editorial bodies: COPE; Council of Science Editors
f. GRC/Global Conferences
g. RIOs/Commissions
h. Etc. ……


GOVERNANCE/
CODES OF PRACTICE
PROMOTION/
PREVENTION
DISSEMINATION/
TRANSPARENCY
FUNDING/ASSESSMENT/
CAREER ADVANCEMENT
ENVIRONMENT/
CULTURE

A typology of European RI governance structures (ESF 2009)

High

Level of risk

Low

Level	Type of structure/supporting guidelines and policies	Responsibility for implementation
1. No formal structures	No guidelines on handling of allegations of misconduct	Dependent on peer review to identify issues
2. Individual Institutions	Guidelines adopted locally for good research practice (GRP) and handling of allegations of misconduct	Either ad hoc or standing committee within institution
3. Agency/academy/learned society	Policy/guidelines for GRP and handling of allegations of misconduct proposed by funding agencies/bodies	Standing committee within institution, with possibility of appeal to agency/academy/learned society in some instances
4. Local with national oversight	Policy/guidelines agreed nationally for handling of allegations of misconduct	National body oversight but local implementation (standing committee) with possibility of appeal to regional or national standing committee
5. National	National legislation/charter approach to GRP and handling of allegations of misconduct	National office or standing committees but cases may be initiated locally.

SE survey on RI processes in Europe (2014)

Key findings

- Most organisations have agreed definitions of research integrity and misconduct – although some confusion still exists between research integrity and research ethics
- Most organisations have a policy or code of conduct on research integrity – although not all were actively promoting awareness of either their policy or research integrity issues in general e.g. through their website
- Very few organisations ask employees to make an implicit or formal commitment to the principles of research integrity e.g. in contracts of employment
- Just over half of organisations had in place established procedures for dealing with allegations of misconduct but only some make these available on their website or through other means

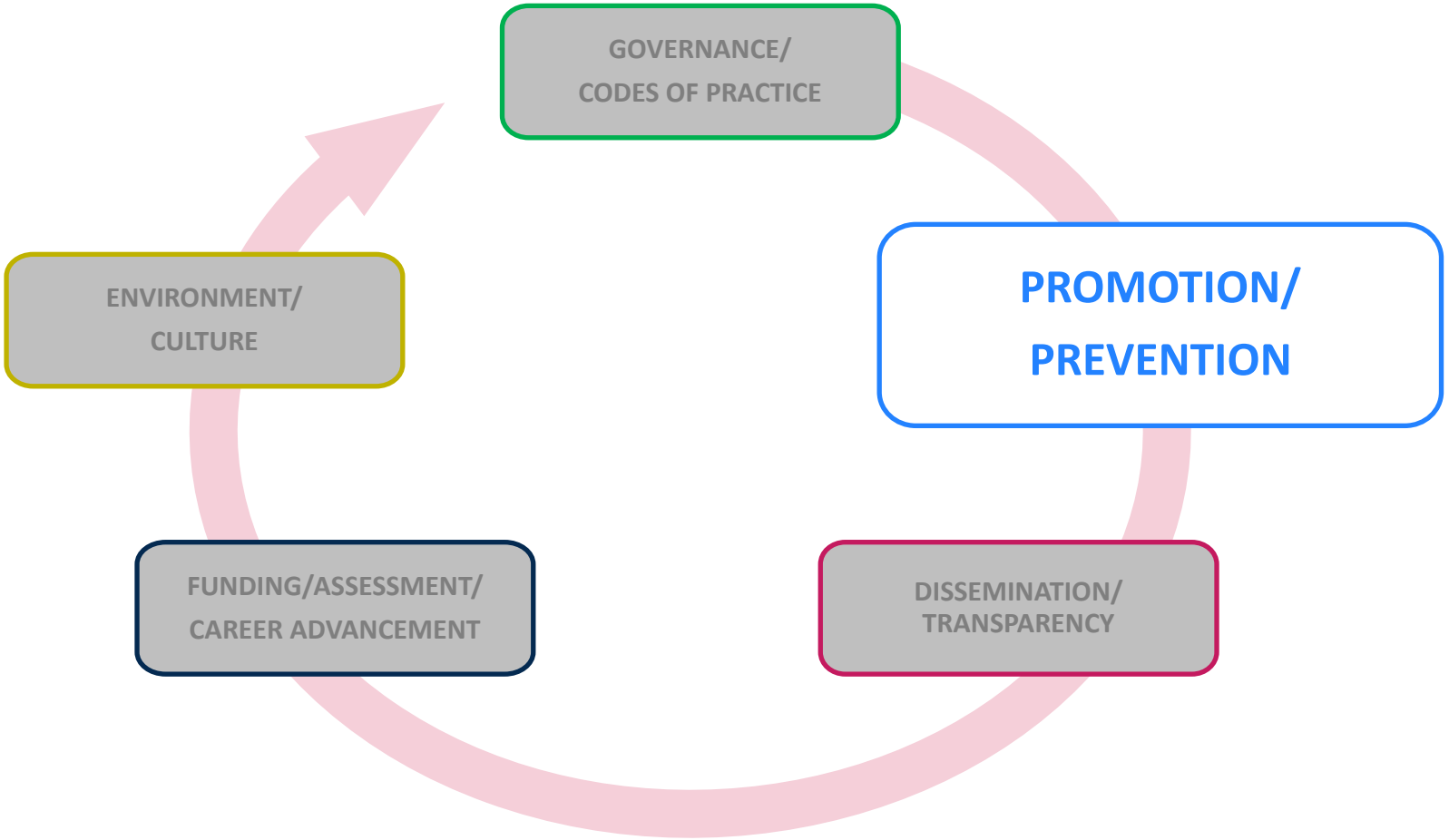
Governance Frameworks

International and national considerations

- Research is increasingly a multi-national endeavour
- Differences with and between national policies create challenges:
  - What happens when allegations of misconduct are raised against international collaborations?
  - Which country conducts the investigation or should all?
  - How far should countries go in assisting other countries investigations
  - What happens when two relevant national policies are at odds with each other?
  - How can you respond if the different disciplines within a multidisciplinary project have different interpretations of misconduct?

But there has been progress ……

- There are now some excellent Guidelines and Codes of Conduct
  - ESF/ALLEA European Code of Conduct – currently being revised by ALLEA
  - COPE guidelines on publication ethics – constantly being improved and updated
  - OECD defined types of misconduct and ‘boiler-plate clause’ for collaborations
- Most European countries have now, or are in the process of, developing policies and guidelines that use the above as a basis
- Better awareness and understanding of the importance of good governance in national research systems and at local level to mitigate against the impacts of misconduct


GOVERNANCE/
CODES OF PRACTICE
PROMOTION/
PREVENTION
DISSEMINATION/
TRANSPARENCY
FUNDING/ASSESSMENT/
CAREER ADVANCEMENT
ENVIRONMENT/
CULTURE

Approaches being taken to promotion and prevention

- Describing good research practices than can guide the behaviour of researchers
  - Singapore and Montreal statements
  - Global Research Council principles
  - ESF/ALLEA European Code of Conduct
  - Science Europe activities (research funders)
- Raising awareness of the importance of research integrity in the research community and the institutions and political systems within which they operate
  - Competitiveness Council Resolution
  - Funding of research on research integrity by European Commission
- Placing emphasis on teaching of good research practice to influence the behaviour of researchers

Achieving consensus on what constitutes GRP is challenging

'Good research practice/Good scientific practice' may reflect differences in what is considered misconduct or QRP

- Different scientific norms (e.g. public universities and private R&D)
- Different cultural norms (e.g. different customary practices and assumptions)
- Different disciplinary norms (e.g. scientific and humanities disciplines)
- Different scientific models (PI as god, Academy member or member of a scientific team)
- Different training and supervisory models (PhD supervisor as god or supervision through a team approach)
- Different scientific hierarchies, methods of hire and promotion etc.

Individual drivers of misconduct*

- **The desperate** – those whose fear of failure overcame a personal code of morality
- **The perfectionist** – for whom failure was a catastrophe
- **The ethically challenged** – who succumbed easily to temptation
- **The grandiose** – who believed that his or her superior judgement did not require verification
- **The sociopath** – who did not have a conscience (fortunately very rare)
- **The uninitiated** – support staff lacking sufficient information on the ethical issues and scientific consequences of their actions

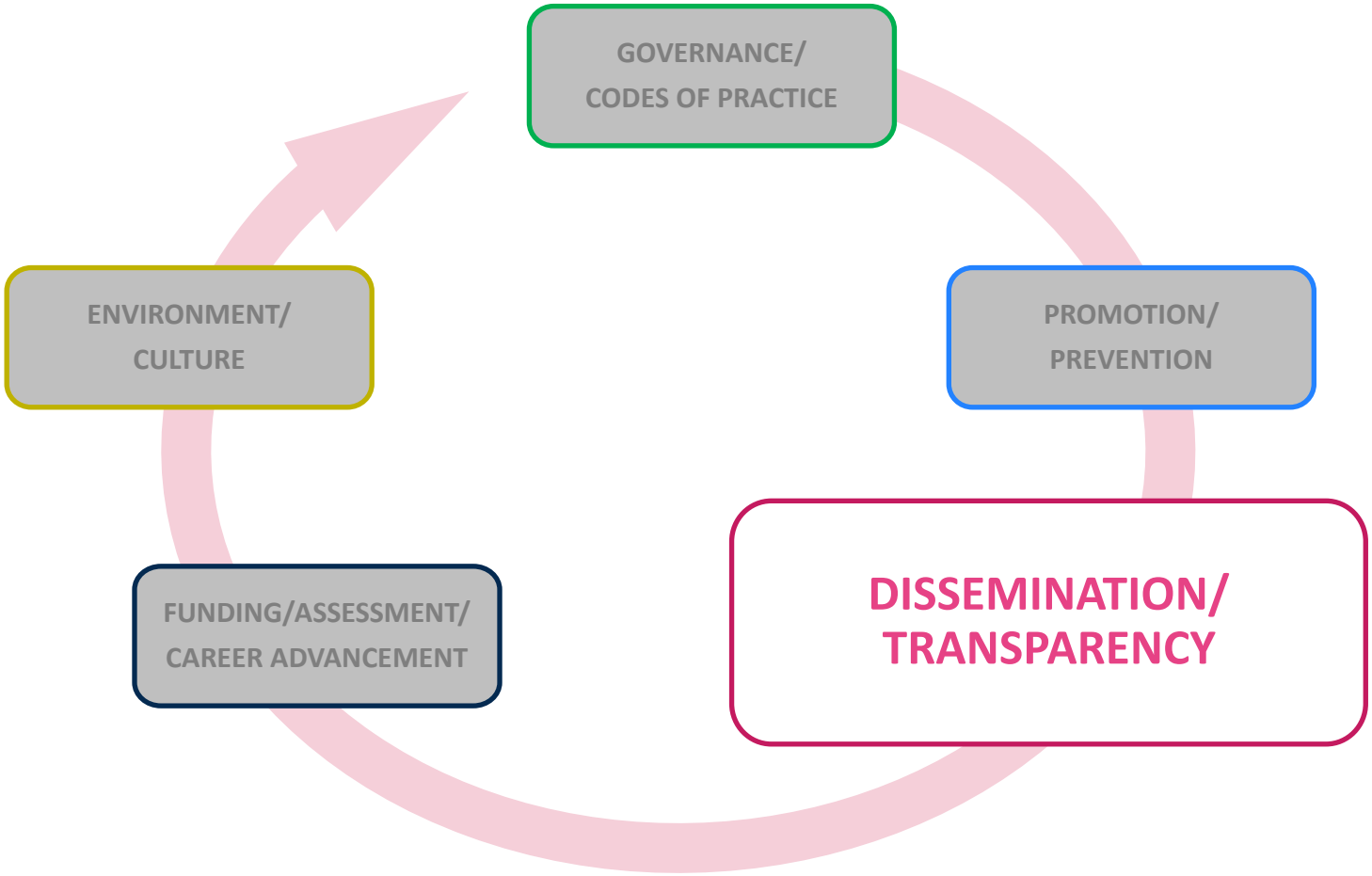
*David S Kornfled (2012) Research Misconduct: The Search for a Remedy. *Academic Medic*ine, Vol. 87, No. 7 / July

Challenges for training in research integrity

- Not all poor behaviours can be changed through training and education
- Little or no evidence of what really works to change behaviour
- Curricula patchy and often not evidence based
- Training is often poorly resources/supported at institutional level (not seen as a priority)
- Approaches to graduate education very fragmented
- Quality of teaching variable and few train-the-trainer initiatives (in what?)
- Little or no training available to senior researchers, who have a key role in mentoring the next generation
- Not yet seen as part of continuing professional development

But there has been progress …

- GRP and research integrity modules are now part of the education of most graduates
- Some really good models emerging around Europe e.g.:
  - German Science Integrity group providing training and curricular development
  - 'Dilemma Game' in University of Rotterdam
  - US Office of Research Integrity interactive film on misconduct 'The Lab'
  - Epigeum on-line training resources
  - Moral Deliberation approach to training in University of Amsterdam
- Training and train-the-trainer identified as key recommendations in 2015 Competitiveness Council Resolution
- European Commission plans to fund a 'train-the-trainer' initiative in GARRI 2017 WP

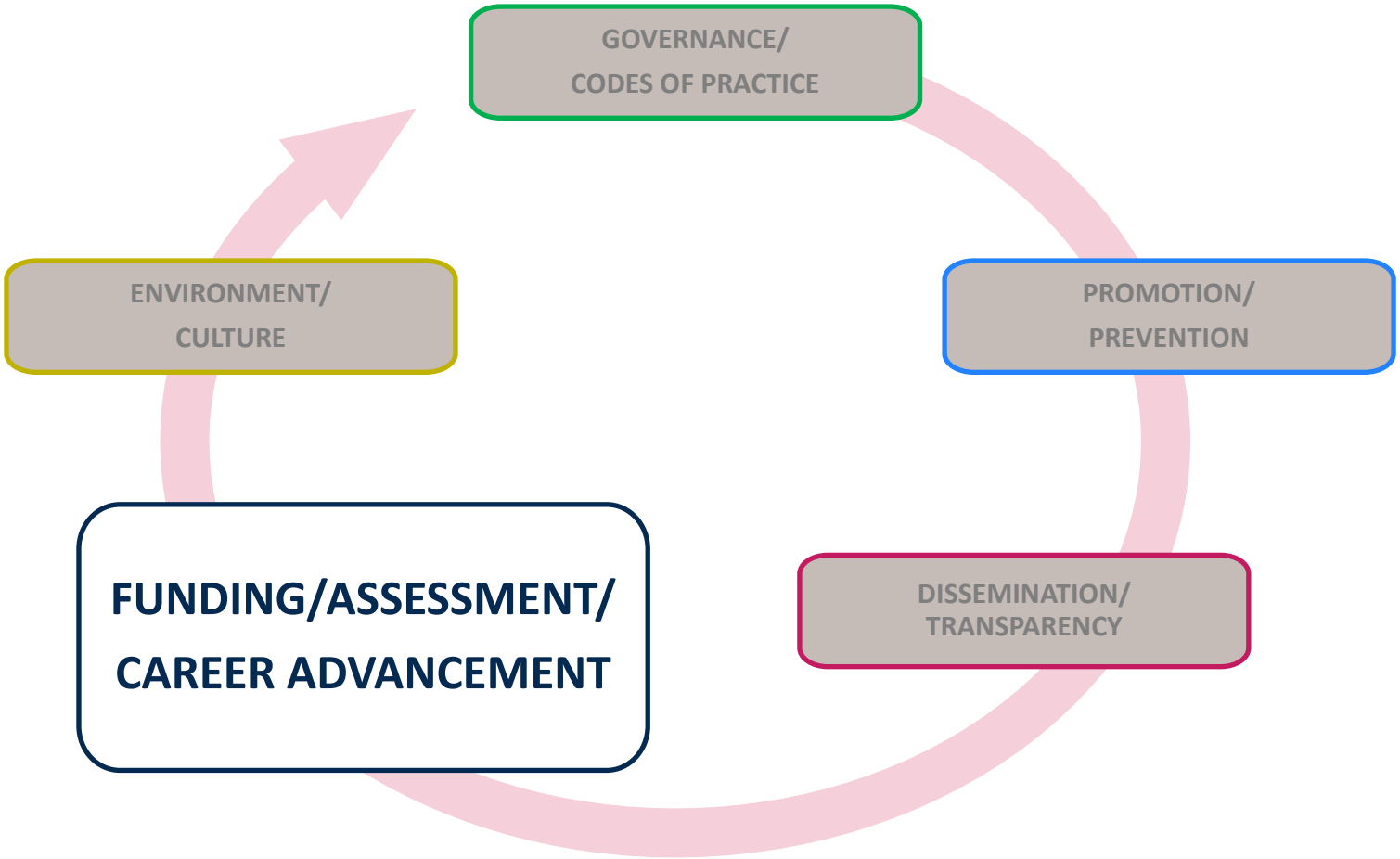

GOVERNANCE/
CODES OF PRACTICE
PROMOTION/
PREVENTION
DISSEMINATION/
TRANSPARENCY
FUNDING/ASSESSMENT/
CAREER ADVANCEMENT
ENVIRONMENT/
CULTURE

Systemic challenges for transparency

- Hard to publish replication studies or studies that report negative or statistically non-significant results
- Open data/open access to publications still not the norm
- Considerable legal and regulatory barriers to be overcome in creating an open data environment
- Good data management/curation/access planning often not a standard criteria for obtaining funding
- Data repository infrastructure/availability of repositories still weak and poorly resourced
- Quality and reliability of available research data dependent on the capacity of researchers and institutions to manage, curate and preserve potentially very large or complex data sets
- Significant skills gaps in terms of information management and curation

But there has been progress…

- Becoming increasingly possible to publish negatives results
- Becoming more acceptable to publish in Open Access digital journals such as PLOS
- Funders looking at introducing mandatory registration of clinical trials and publication of study results and data
- Publishers facilitating pre-registration, review and publication of study protocols
- Many funders now have mandatory Open Access policies for publications
- European initiatives such as the European Open Science Cloud, H2020 Open Data Pilot (OpenAIRE) advancing data repository infrastructure
- Initiatives such as Lancet REWARD Alliance, open peer-review and post-publication peer-review encourage transparency


GOVERNANCE/
CODES OF PRACTICE
PROMOTION/
PREVENTION
DISSEMINATION/
TRANSPARENCY
FUNDING/ASSESSMENT/
CAREER ADVANCEMENT
ENVIRONMENT/
CULTURE

Challenges for RFOs and RPOs

Research funders

- How can we ensure that we fund the best or the right people?
- How can we ensure high standards and quality in the outputs of the research that we fund?
- How can we allocate our resources most effectively to ensure impact and socioeconomic benefit?

Institutions

- How can we ensure that we employ the best or the right people?
- How can we ensure that we are not incentivising poor behaviours through our reward and promotion systems?
- How do we ensure that as an institution we are contribution to both science and society?

How are RFOs and RPOs responding?

Research funders

- Narrow view of track record: funding, publications (lazy proxies of success)
- Scrutiny of quality/robustness of applications for funding: national or international peer review or a blend
- Requirements for/evaluation of knowledge transfer as a measure of success
- Requirement for robust policies on promotion and training, GRP and handling of allegations – although we rarely check compliance!

Institutions

- Narrow view of track record for hiring and promotion: H Factor, publications etc. (lazy proxies of success)
- Emphasis on ability to generate research funding with possible link to salary in some cases
- Industry engagement seen as a measure of success
- Other activities such as high-quality teaching, public engagement seen as less important
- Introducing policies and process on RI

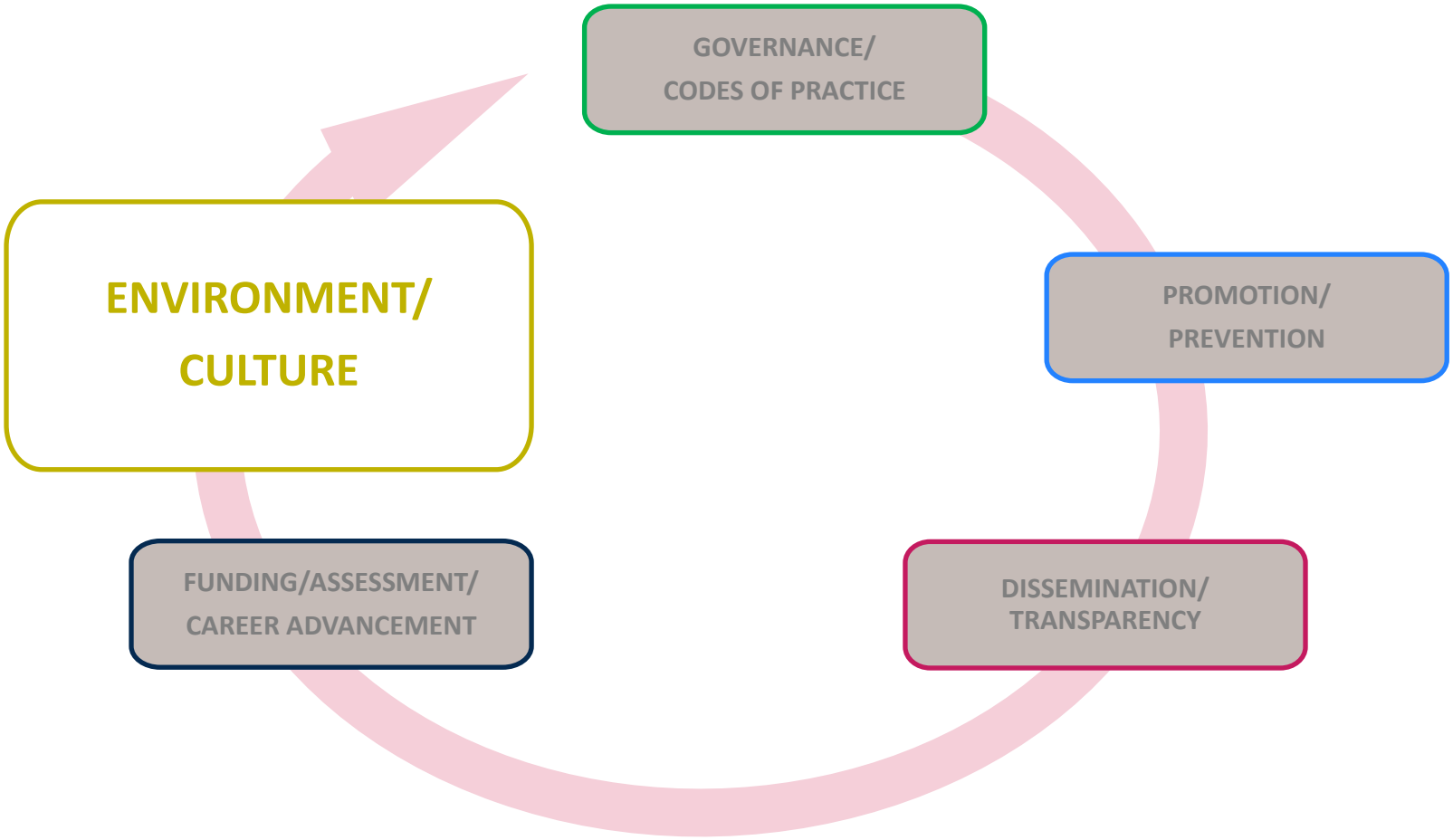
What can we do to reduce perverse incentives – a few suggestions

Research funders

- Change the way we assess publications (e.g. more emphasis on quality rather than quantity)
- Reward open access approaches to publication of papers and data and rate publication of negative results
- Broaden the assessment criteria
  - Individual versus team science
  - Short-term versus long-term output
- Look at existing peer-review models and seek more transparent/fairer methods

Institutions

- Shift the emphasis away from publication in high impact journals as an indicator of productivity
- Broaden the criteria for hiring and promotion to include 'public good' metrics (public and policy engagement, teaching innovation etc.)
- Resource training at a local level – people and curricular development
- Encourage good quality mentoring (offer training if necessary)


GOVERNANCE/
CODES OF PRACTICE
PROMOTION/
PREVENTION
DISSEMINATION/
TRANSPARENCY
FUNDING/ASSESSMENT/
CAREER ADVANCEMENT
ENVIRONMENT/
CULTURE

It is not just about individual behaviour!

"Efforts to reduce and prevent misconduct might be more effective if focused on promoting research integrity polices, improving mentoring and training, and encouraging transparent communication among researchers."

Fanelli *et al*. (2015)

"In a supportive environment, colleagues, supervisors and assistants who work with, near or in the same discipline as researchers contemplating or committing misconduct constitute a powerful and potentially valuable resource to minimise and correct behaviour, especially where the misconduct may not be intentional."

Koocher and Keith-Spiegal (2010)

Creating a positive climate for RI

The characteristics of the research environment may be just as important as training in determining a researchers behaviour

- Evidence that perceptions of the normative social environment are related to ethical decision-making
- Dimensions of the social environment include:
  - Egoism (e.g. self-interest, efficiency, company profit)
  - Benevolence (e.g. friendship, team interest, social responsibility)
  - Principle (e.g. personal morality, rules, law)
  - Organisation (e.g. fairness organisational commitment, openness)
- For early career researchers exposure to mentoring, intense educational experiences, laboratory quality can have long-term positive impacts on both behaviour and creative performance

Some international initiatives

- **European Commission** High Level Open Science Advisory Group looking at how to embed Open Access, Open Data and Research Integrity in research culture by removing barriers and promoting incentives in research funding, career advancement and publishing.

- **PRINTEGER** project (funded under GARRI) to enhance research integrity by promoting a research culture in which integrity is part of what it means to do excellent research – the approach will be to catalogue practices and responses of institutions, the media, journals and national systems and to increase understanding of how researchers experience research integrity from a work floor perspective.

*http://ec.europa.eu/research/swafs/pdf/pub_rri/rri_indicators_final_version.pdf

How can we tell if what we are doing makes a difference?

Indicators of success

- **European Commission**: Recent report* on indicator development with eight criteria considered important to creating and sustaining a supportive environment: governance; public engagement; gender equality; science education; open access/open science; ethics; sustainability; and social justice.
- **US Survey of Organisational Research Climate** (SORC): Measures seven dimensions of research climate (ethical leadership; socialisation and communication processes; policies, procedures, structures and processes to address risks to research integrity) – provides a baseline for improvement and a tool to monitor progress

*http://ec.europa.eu/research/swafs/pdf/pub_rri/rri_indicators_final_version.pdf

A few final thoughts …

In the coming years we will require some **fundamental changes** in how we fund, reward, disseminate and govern research. Otherwise, efforts to promote, encourage and enhance research integrity may ultimately have little impact.

In an increasingly collaborative research ecosystem the challenge will be for national governments, funding agencies and research institutions to **move in the same direction** and learn from each other – the problems are too many and too complex to tackle alone**.**

Thank you for your attention!

"All along I thought our level of corruption was consistent with community standards."