

**SCIENCE INTEGRITY POLICY AND INSTRUCTIONS  
TO THE DEPARTMENT OF NATIONAL DEFENCE (DND) EMPLOYEES AND  
CANADIAN ARMED FORCES (CAF) MEMBERS**

## FOREWORD

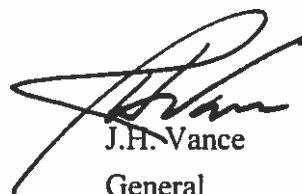
The Canadian Armed Forces (CAF) and the Department of National Defence (DND) perform key roles at home and abroad to protect Canada and Canadians. The Department of National Defence and its employees, and the Canadian Armed forces and its members are committed to the highest ethical standards in all decisions and actions. These standards encompass ethical practices in the workplace and in operations. They also include expectations with regards to the ways science and research are carried out and used in support of our evidence-based decision making. This is in line with the Government of Canada's commitment to strengthen the role of science in decision-making and to support the vital work of our scientists. The Treasury Board Secretariat has addressed these commitments in collaboration with the Chief Science Advisor and the Professional Institute of the Public Service of Canada, mandating departments and agencies to develop and implement a Science Integrity Policy to ensure that government science is accessible to the public and that federal scientists remain free to speak about their work.

The *Science Integrity Policy and Instructions* aims to ensure that expectations regarding the ethical conduct of research are clear, that our research is trustworthy, and that we make decisions based on sound science. To achieve this, we need fidelity in data generation and scientific analysis, impartiality in drawing conclusions, mechanisms for dealing with breaches of scientific integrity, and discussions around different interpretations of research results which will move science forward and strengthen evidence. The Policy clearly articulates the right of scientists to speak openly about their research and release scientific information to the public for the benefit of Canada. These bedrock principles of scientific integrity have now been enshrined in this Policy, which will be implemented over the coming years across DND and the CAF.

The *Science Integrity Policy and Instructions* applies to all DND employees and CAF members and it allows us to proactively shape our culture of high ethical standards, including science integrity. The Policy also affords an opportunity to reflect on research and science and will enhance our ethical culture to support the values and ethics of the Public Service and the CAF.



Jody Thomas  
Deputy Minister



J.H. Vance  
General  
Chief of the Defence Staff

## 1. Effective date

1.1 This policy takes effect on 1 April 2019, understanding that implementation of its associated processes, directives and guidelines will be gradual, and may take up to two years.

## 2. Context

2.1. The Policy and Instructions are issued in accordance with the May 15, 2017 and June 1, 2017 Memoranda of Agreement between the Treasury Board and the Professional Institute of the Public Service of Canada (PIPSC) in respect of Scientific Integrity.

## 3. Authorities

3.1. This Policy should be read in consultation with *the Security of Information Act*<sup>1</sup> and *the National Defence Security Orders and Directives*<sup>2</sup>, the *Values and Ethics Code for the Public Sector*<sup>3</sup> and the *Department of National Defence and Canadian Forces Code of Values and Ethics*<sup>4</sup>, the *Directive on the Management of Communications*<sup>5</sup>, and the *Policy on Conflict of Interest and Post- Employment*<sup>6</sup> as well as the Defence Administrative Orders and Directives (DAODs) as referenced in Section 11.

3.2. Where there is conflict or incompatibility between this Policy and legislation and/or a provision of any relevant collective agreement, the provisions of the legislation and/or relevant collective agreement take precedence.

3.3. Where there is conflict or incompatibility between this Policy and a mandatory Policy instrument of the Treasury Board (i.e., policy, directive or standard), the provisions of the Treasury Board mandatory Policy instrument take precedence.

3.4. Where there is conflict or incompatibility between this Policy and a voluntary Policy instrument of the Treasury Board (i.e., guidelines or tools), the provisions of this Policy take precedence.

3.5. Responsibility for maintaining a record of all instances of noted conflict or incompatibility between this Policy and legislation, collective agreements, or Treasury Board policy instruments and/or DND/CAF policy instruments, and submission of this record as part of the performance evaluation as per paragraph 7.9 of this Policy rests with the Deputy Minister and the Chief of the Defence Staff.

3.6. The Deputy Minister and the Chief of the Defence Staff have assigned the functional

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<sup>1</sup> Security of Information Act; <https://laws-lois.justice.gc.ca/eng/acts/O-5>

<sup>2</sup> National Defence Security Orders and Directives; <https://collaboration-admpa.forces.mil.ca/sites/DI/SafetySecurity/vcds-ndsod-glossary.pdf>

<sup>3</sup> Values and Ethics Code for the Public Sector ;<https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=25049>

<sup>4</sup> Department of National Defence and Canadian Forces Code of Values and Ethics: <http://www.forces.ca/en/about/code-of-values-and-ethics.page>

<sup>5</sup> Directive on the Management of Communications; <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=30682>

<sup>6</sup> Policy on Conflict of Interest and Post- Employment <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=25178>

authority in the area of defence and security science and technology to the Assistant Deputy Minister (Science and Technology) including establishing standards for science integrity in regard to the design, conduct, management, review, use and communication of research and science.

#### **4. Objectives and expected results**

The objectives of the Policy and Instructions are to:

- 4.1. Foster a culture that supports and promotes scientific integrity in the design, conduct, management, review, use and communication of research, science, and related activities.
- 4.2. Increase public, employee and stakeholder trust in the credibility and reliability of defence research and scientific activities.
- 4.3. Set out expectations regarding the design, conduct, management, review and communication of research, science, and related activities.
- 4.4. Enhance employee understanding of the contributions of research and science to evidence-informed decision-making, as well as the role of managers, communication specialists, researchers and scientists in the development of government policy and advice.
- 4.5. Ensure that DND employees and CAF members are aware of, and have access to, resources, support, and training to enable implementation of this Policy in the design, conduct, management, review, use or communication of research, science, or related activities.

The expected results of these Policy and Instructions are that:

- 4.6. DND employees and CAF members involved in the design, conduct, management, review, use or communication of research, science, or related activities understand and conduct themselves in a manner consistent with the principles of scientific integrity.
- 4.7. DND and the CAF are recognized by its employees, its members, stakeholders, and the public as a reliable and credible source of research and scientific information.
- 4.8. As appropriate and to the extent possible, allegations of breach of the principles of scientific integrity as defined in s. 6 are addressed through a fair, impartial, efficient, confidential and respectful process.
- 4.9. DND employees and CAF members understand and seek to enhance the contributions of research and science advice to DND and the CAF, government policy and evidence-informed decision-making.

## 5. Application

The Policy and Instructions apply to DND employees and CAF members who design, conduct, communicate, manage, review or make use of defence and security research, science or related activities, and/or DND research facilities (e.g. contractors, visiting scientists and students, collaborators, clients).

## 6. Scientific integrity principles

Stakeholder trust in the research and scientific information provided by governments depends upon the integrity of the process by which such information is produced, managed and communicated. So too does trust in the decision-making process that makes use of such information.

Furthermore, scientists and researchers must uphold and conform to standards of excellence accepted by the wider research and scientific community.

To this end, in designing, conducting, managing, reviewing, using or communicating research, science and related activities, DND employees and CAF members must:

6.1. Ensure that all such activities are carried out in a manner that is consistent with all relevant and applicable standards of scientific excellence, research ethics, and responsible research conduct.

6.2. Ensure that the conduct of defence and security research and science and any research or scientific products, as well as any associated use and communications, are free from political, commercial, client and stakeholder interference.

6.3. In the absence of clear and compelling reasons for limiting disclosure, ensure that research and scientific information produced or commissioned by DND or the CAF is made available to the public in a timely manner and in keeping with the Government of Canada's *Directive on Open Government*<sup>7</sup>.

6.4. In the presence of reasons for limiting disclosure, ensure that research and scientific information produced by DND/CAF is made available in a timely manner to authorized stakeholders with the adequate security clearance and need-to-know.

6.5. Accurately represent and appropriately acknowledge the contributions of both themselves and others to their research or scientific work.

6.6. Avoid conflicts of interest, and ensure that any real, potential or apparent conflict of interest is explicitly recognized, reported and appropriately managed.

6.7. Encourage discussion based on differing interpretations of research and scientific

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<sup>7</sup> *Directive on Open Government*; <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=28108>

evidence as a legitimate and necessary part of the research and scientific processes and, where appropriate, ensure that these differences are made explicit and accurately represented.

6.8. Ensure that significant contributions of researchers and scientists to government programs, policies, regulations, and decision-making are acknowledged in official publications or communications to the extent practical, including the names and roles of those who made significant contributions to these products and activities.

6.9. Report any breach of these principles (i.e., a breach of scientific integrity) to their supervisor, manager or designated official.

## 7. Requirements

### 7.1. *Implementation*

7.1.1. The Policy and Instructions will be communicated to all DND employees and CAF members through the Departmental Ethics Program with special attention to its implications to communications policies.

7.1.2. DND and the CAF will continue to develop and implement the additional procedures, policies, guidelines, tools, training and professional development opportunities as necessary to support the Policy and Instructions.

7.1.3. DND and the CAF will ensure that contractors and/or collaborators involved in, or providing services in support of, research, science or related activities are informed of the Policy and Instructions and that they are expected to comply with its provisions and intent.

### 7.2. *Fostering a culture of science integrity*

Two complementary approaches to fostering a culture of scientific integrity are taken. One focuses on instilling the virtues that underlie responsible conduct in research, science and related activities (para. 7.2.1). A second focuses on the procedure for bringing allegations of breaches of scientific integrity forward, the investigation of these allegations, and the consequences of a finding that a breach has occurred (para. 7.2.2).

#### 7.2.1. *Science virtues*

In accordance with the TBS *Policy on Learning, Training and Development*<sup>8</sup>:

7.2.1.1 Research networking with national and international peers and active participation in the business and organization of relevant scientific and professional societies form an important part of ensuring scientists and researchers understand and are held to the standards of their communities.

7.2.1.2 The virtues underlying scientific excellence, including intellectual curiosity and honesty, constructive skepticism, meticulousness, avoidance of bias, humility in the

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<sup>8</sup> *Policy on Learning, Training and Development*: <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12405>

discovery and fidelity in the use of science evidence, and the limitations of scientific enquiry are important. To this end, DND and the CAF will ensure that learning policies support training, education and professional development that allow employees to further their understanding of, and appreciation for, these virtues.

7.2.1.3 DND and the CAF will ensure its learning policies support training, education, and professional development to inform and educate DND employees and CAF members about responsible conduct in research, research ethics, and the annotation, management and archiving of research and scientific data.

7.2.1.4 DND and the CAF will incorporate scientific integrity mentorship for researchers and scientists in their existing mentorship programs.

### *7.2.2. Breaches of scientific integrity*

7.2.2.1 The Deputy Minister and the Chief of the Defence Staff via ADM (S&T) will appoint a Science Integrity Lead to work with the Departmental Ethics Program to provide education on the Policy and Instructions and to address allegations of breaches of the Policy and Instructions.

7.2.2.2 In cases of alleged breaches of scientific integrity, DND employees and CAF members shall seek to resolve the issue in a fair and respectful manner. They are encouraged to consider informal processes such as dialogue or mediation to resolve the matter. They can also seek advice and support from the Science Integrity Lead.

7.2.2.3 The Science Integrity Lead will ensure that alleged breaches of these Policy and Instructions are promptly and thoroughly reviewed, will notify all parties involved of the allegation and will ensure an informal or formal investigation by appropriate independent and competent experts.

7.2.2.4 DND and the CAF will protect personal information and otherwise provide safeguards to ensure that DND employees and CAF members may bring forward, in good faith, allegations of breach of scientific integrity or participate in an investigation procedure without prejudice or fear of reprisal.

### *7.3. Openness, transparency and timeliness*

Openness and transparency in all elements of the research and scientific process are important as well as the timely release of scientific and research information. Nonetheless there may be legitimate and compelling reasons that may limit the disclosure or availability of research or scientific information to DND employees, CAF members, stakeholders or the public.

7.3.1. The Policy and Instructions, as well as any associated policies, directives or guidelines, may be posted on the departmental public website in permission-less downloadable form.

7.3.2. As the Policy and Instructions, and any associated policies, guidelines or tools are

amended and revised, an annotated electronic archive of all such changes, with all archived elements in permission-less downloadable form will be maintained.

7.3.3. No DND employee or CAF member shall suppress, alter or otherwise impede the timely release of research or scientific information in the absence of clear and compelling reasons for doing so.

7.3.4. DND employees and CAF members must ensure that research and scientific information (including that produced by contractors, grantees, or other partners who participate in, or assist with, the design, conduct, use or management of research, science or related activities) is produced and disseminated in a timely and transparent manner, in the absence of clear and compelling reasons for not doing so which would include, but not be limited to, ownership of such information by persons other than the Crown, prohibitions against disclosure contained in contractual, license, non-disclosure or similar agreements and reasons of national security.

#### 7.4. *Public communication of research and scientific information*

The right to freedom of expression by researchers and scientists<sup>9</sup> on matters of research or science is paramount. The important role of researchers and scientists in communicating research and scientific information to the public is herewith underscored.

Moreover, as public servants, scientists, researchers and indeed all DND employees and CAF members are subject to *the Values and Ethics Code for the Public Sector* and the *DND and CAF Code of Values and Ethics* respectively. There is a need for caution and prudence in public communication of sensitive scientific or research information, as well as existing legal constraints on information disclosure. DND employees and CAF members must respect all applicable laws, regulations, orders and instructions, including *DAOD 2008-2, Media Relations and Public Announcements*<sup>10</sup>, which provides guidance on public speaking. Finally, effective public communication requires certain skills, and as researchers and scientists may have different degrees of comfort with such tasks, ADM (PA) will provide advice, guidance, and where appropriate training to support researchers and scientists.

7.4.1. Researchers and scientists shall have the right, and are encouraged, to speak about or otherwise express themselves on science and their research without approval or pre-approval and without being designated as an official spokesperson. In doing so, they must respect all relevant acts, regulations, policies and directives as referenced in para. 3.1.

7.4.2. In any public communication, DND employees and CAF members must be familiar with and respect any legal restriction on information disclosure such as information which is classified or protected, privacy rights, matters before the courts, and cabinet confidences. They must also respect all applicable Acts, Policies and Directives as referenced in para 3.1.

7.4.3. In the case of planned formal public communication events with sufficiently long lead

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<sup>9</sup> For the purposes of Article 7.4, the terms “researcher(s)” and “scientist(s)” are understood to mean researchers (RE) and applied scientists (SP) as specified in the occupation group definitions for the public service – see s. 9 of the Policy. This definition may expand as additional bargaining units sign on to similar scientific integrity agreements.

<sup>10</sup> DAOD 2008-2 Series; <http://www.forces.gc.ca/en/about-policies-standards-defence-admin-orders-directives-2000/2008-2.page>



times (e.g., public talks or lectures), DND employees should notify their supervisor/manager of the upcoming event in line with the *Directive on the Management of Communications*<sup>5</sup> and *DAOD 2008-2*<sup>10</sup>, and provide a copy of their communication material for information purposes only. CAF members will follow DND/CAF instructions including DAOD 2008-2.

7.4.4. In the case of formal public communication events with short lead times (e.g., media interviews) that effectively preclude prior notification, DND employees should notify their supervisor/manager as soon as possible after the event for information purposes only and respect all applicable Acts, Policies, and Directives as referenced in 3.1.

7.4.5. Pursuant to paragraphs 7.4.2 and 7.4.3, DND employees will be provided with Guidelines consistent with relevant collective agreements and the *Directive on the Management of Communications*<sup>5</sup> and the *DAOD 2008-2*<sup>10</sup>, to assist them in determining the types of public communications for which supervisor/manager notification is desirable or required, and the appropriate timing and form of any such notifications<sup>11</sup>.

7.4.6. Researchers and scientists are under no obligation to act as public DND/CAF subject matter experts or appear in public fora, and may decline any such invitation or request without prejudice, unless explicitly given this task by management.

7.4.7. Any public communication which describes the work conducted by researchers or scientists must be reviewed and approved by them or their designates before publication or dissemination and must acknowledge their contribution(s). In cases where a researcher or scientist does not wish authorship and/or their contribution to be acknowledged, they should be consulted as to whether, in their view, the work is accurately described and findings interpreted appropriately.

7.4.8. Researchers and scientists are encouraged to participate in media training provided by ADM(PA) which is designed to support them as they express themselves about science or their research. This is, however, not a requirement.

7.4.9. Where a researcher or scientist is speaking in the role of an official spokesperson, they must identify themselves by name and position and speak on the record for public attribution and follow the DAOD 2008 series, Public Affairs Policy guidelines.

## 7.5. *Dissemination of research and scientific findings*

Communication among researchers and scientists is critical to the development of scientific and scholarly knowledge. Moreover, defence scientists are part of a global community of scientific and scholarly expertise, their contribution to which is critical to maintaining and enhancing the credibility and reputation of DND and the CAF, and Defence's contribution to the knowledge economy.

As with public communications, researchers or scientists disseminating or communicating information through research or scientific media are subject to, and bound by, the *Access to Information Act*, the *Security of Information Act*, and the *Values*

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<sup>11</sup> Guidelines will be forthcoming with examples.

*and Ethics Code for the Public Sector and the Department of National Defence and Canadian Forces Code of Values and Ethics*, and must abide by the Treasury Board of Canada's *Directive on the Management of Communication*. To this end, publication approval processes must be compatible with the relevant collective agreements. Approval to publish will not be unreasonably withheld.

When DND/CAF research or scientific communication contains classified information related to the *Security of Information Act* or the provisions outlined in the *Access to Information Act*, the principles of communication and dissemination of this Policy should be applied within the approved audience with the adequate security clearance and need-to-know.

DND/CAF publication policies shall be examined to ensure that they are consistent with the following principles and procedures:

7.5.1. Drafts of publications authored and co-authored by DND or CAF researchers or scientists should be submitted through the approved publications process, supervisor, or release authority<sup>12</sup> as appropriate, in a timely fashion. An electronic copy of the final version should be provided to appropriate Departmental Authorities.

7.5.2. Any communication that includes explicit comments or recommendations on, or explicit discussions about, federal statutory, regulatory or policy matters requires approval through the approved publication process or by the manager/supervisor as appropriate.

7.5.3. DND and CAF research or scientific communications that do not contain explicit comments or recommendations on, or explicit discussions about, federal statutory, regulatory or policy matters require approval by the release authority. The approval process shall adhere to and enforce the principles of this policy.

7.5.4. For communications that do require approval, managers, supervisors or other relevant personnel may require revisions or editorial changes. In the event that approval is contingent upon incorporation of such revisions or changes, and the author(s) are not in agreement with the suggested changes, the work will not be attributed to the employee if the employee so requests and will not be distributed. In such cases, if author(s) are disagree with the suggested changes, the author(s) may consider informal processes, such as dialogue or mediation, or seek appropriate sources to resolve the issue in a fair, respectful and timely manner. In the event that approval is withheld, the author(s) shall be so informed in writing of the reasons.

7.5.5. In support of paragraphs 7.5.2 -7.5.4 and in consultation with PIPSC representatives, guidelines will be provided to assist researchers, scientists, managers and supervisors in identifying and distinguishing communications that do/do not require manager or supervisor approval.

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<sup>12</sup> National Defence Security Orders and Directives, <https://collaboration-admpa.forces.mil.ca/sites/DI/SafetySecurity/vcds-ndsod-glossary.pdf>

7.5.6. The responsible author(s) of any research or scientific communication must ensure that:

- Approval of all listed authors and contributors is obtained;
- The work in question is not a republication of original work except when the republication involves translation or dissemination to diverse audiences and is consistent with existing standards on republication;
- All contributions to the work are appropriately acknowledged in a manner conforming to accepted standards of the relevant discipline(s) and publication(s);
- DND or CAF author's federal affiliation is listed;
- The communication has been subjected to appropriate independent peer review (when applicable) and that technical and/or editorial changes that may result from this review have been addressed;
- Matters related to acknowledgements and official languages have been appropriately managed and administered;
- The possibility of publishing in Open Access journals for scientific and technical papers has been explored;
- Due diligence has been exercised in ensuring that all issues related to intellectual property and related matters have been resolved; and
- Relevant terms and conditions for publishing, including Crown copyright, and appropriate approvals have been respected.

Moreover, researchers and scientists must seek credible and reputable outlets for academic publication that conform to established practices and standards of academic publishing, including particularly rigorous peer review practices (when applicable).

7.5.7. In cases where DND or CAF scientists or researchers have provided data or information to be used in a government document (e.g., a report, briefing note, etc.), management and those responsible for preparing the documents should consult with the scientist or researcher concerned to ensure that the data/information is used and interpreted appropriately.

## 7.6. *Contributions to the scientific community*

The participation of DND and CAF researchers and scientists in the global scholarly community depends upon domestic and international collaboration and partnerships. Such collaborations and partnerships provide important opportunities for DND and CAF researchers and scientists to leverage their expertise, knowledge and infrastructure in developing research and scientific knowledge to the benefit of Canadians.

To this end, the Deputy Minister and the Chief of the Defence Staff via ADM(S&T) will:

7.6.1. Encourage and facilitate domestic and international research or scientific collaborations and partnerships between DND or CAF researchers and scientists and the external research and development communities in Allied defence research organizations, universities and colleges; provincial, territorial or indigenous governments; industry and business; and civil society.

7.6.2. Make a reasonable effort to appropriately resource participation in relevant scientific and professional societies, working committees, conferences, workshops and symposia identified by both researchers and scientists as well as management.

7.6.3. Make a reasonable effort to ensure appropriate engagement or participation of researchers and scientists in international science and research-based fora of which Canada is a formal member.

Furthermore:

7.6.4. Activities related to collaboration with the extramural research and development communities are encouraged, including the appointment of DND or CAF researchers and scientists to adjunct professorships. In this context, the *Policy on Conflict of Interest and Post-Employment* and *DAOD 7021- Conflict of Interest and Post Employment* must be respected.

#### *7.7. Role of DND employees and CAF members in science advice and evidence-informed decision-making*

Researchers and scientists have important roles to play in providing advice that informs federal programs, policy, regulations and law. Research and scientific findings are an important source of evidence that must be appropriately considered in evidence-informed decision-making.

Moreover, researchers and scientists have an important role to play in providing advice not only on the research required to resolve today's issues, but also to identify emerging scientific and technical issues, research directions and opportunities.

To this end, and in consultation with PIPSC representatives, transparent and systematic mechanisms and procedures will be developed and deployed for:

7.7.1. Gathering, evaluating and incorporating scientific advice into the DND and CAF decision-making process.

7.7.2. Engaging DND employees and CAF members in the design, development, and evaluation of robust and resilient research programs that will be able to meet the research needs of the future.

7.7.3. Identifying and prioritizing areas of federal authority for which the current federal science or research capacity is inadequate or where federal investment in research and development is likely to provide substantial benefits to Canadians.

In addition, the Deputy Minister and the Chief of the Defence Staff via ADM(S&T) will:

7.7.4. Support the development of training and professional development opportunities devoted to the roles of science and research in developing evidence to support evidence-informed decision-making. Such opportunities may be made available to all DND employees and CAF members who engage in, supervise, manage, support, review, use or report on research and scientific activities; analyze, curate or communicate data or

information generated by these activities; and/or seek to use information derived from these activities in decision-making.

### 7.8. *Responsible conduct of research*

DND and the CAF are committed to ensuring that defence and security research and science conforms to the highest standards of responsible research conduct and must strive to follow the relevant and applicable research practices honestly, accountably, openly and fairly in the development and dissemination of research and scientific knowledge.

7.8.1. Scientific integrity involves the application of concepts of transparency, openness, high quality work, avoidance of conflict of interest and ensuring high standards of impartiality and research ethics. DND employees and CAF members involved in science or research must conform to the standards of responsible research. Such standards include, but are not limited to ensuring that:

- (i) All research and scientific activities (including study design and implementation; recording, analyzing, and interpreting data; and in reporting and publishing data and findings) are conducted with the highest scientific rigour;
- (ii) Complete and accurate records of data, methodologies and findings, including graphs and images, are maintained in a manner consistent with best practices. This curation is essential to the verification and/or replication of the work by others;
- (iii) Referencing and, where applicable, obtaining permission for use of all published and unpublished work, including data, source material, methodologies, findings, and images as appropriate;
- (iv) Authorship consent is obtained, and that all those and only those who have made a substantial (conceptual and/or material) contribution to, and who accept responsibility for, the contents of the publication or document are included as authors;
- (v) Individuals, organizations or institutions who have sponsored and/or funded the research are appropriately described and acknowledged;
- (vi) All and only those individuals who have participated in the research are appropriately recognized and acknowledged;
- (vii) The contribution of those and only those who have contributed to research, including funders and sponsors, is appropriately described and acknowledged;
- (viii) Any real, perceived or potential conflict of interest is reported and appropriately managed;
- (ix) Information included in grant or award applications is accurate and complete, including information on partners, collaborators, co-applicants, and that their permission to be listed has been obtained.
- (x) Research involving humans or animals conforms with the Tri-council principles and procedures as specified in the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*<sup>13</sup> and the *Canadian Council on Animal Care Guide to the Care and Use of Experimental Animals*<sup>14</sup> respectively and follow relevant

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<sup>13</sup> *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*: <http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/Default/>

<sup>14</sup> *Canadian Council on Animal Care Guide to the Care and Use of Experimental Animals*, Vol. 1 (2<sup>nd</sup> edition): [https://www.ccac.ca/Documents/Standards/Guidelines/Experimental\\_Animals\\_Vol1.pdf](https://www.ccac.ca/Documents/Standards/Guidelines/Experimental_Animals_Vol1.pdf)

DAODs<sup>15</sup>.

7.8.2. DND employees and CAF members involved in science or research must avoid breaches of responsible research conduct. Such breaches include, but are not limited to:

- (i) *Fabrication*: Making up data, source material, methodologies or findings, including graphs and images;
- (ii) *Falsification*: Manipulating, changing, or omitting data, source material, methodologies or findings, including graphs and images, without acknowledgement and which results in inaccurate findings or conclusions;
- (iii) *Destruction of research records*: The destruction of one's own or another's research data or records to specifically avoid the detection of wrongdoing or in contravention of this or any other applicable policies and/or laws, regulations and professional or disciplinary standards;
- (iv) *Plagiarism*: Presenting and using another's published or unpublished work, including theories, concepts, data, source material, methodologies or findings, including graphs and images, as one's own, without appropriate referencing and without permission where required;
- (v) *Redundant publication or self-plagiarism*: The re-publication of one's own previously published work or part thereof, including data, in any language, without adequate acknowledgment of the source, or adequate justification;
- (vi) *Invalid authorship or contributions*: Inaccurate attribution of authorship, including attribution of authorship to persons other than those who have made a substantial contribution to, and who accept responsibility for, the contents of a publication or document. Invalid authorship also includes the failure to acknowledge those who have made substantial contributions to the work in question;
- (vii) *Mismanagement of conflict of interest*: Failure to appropriately identify and address any real, potential or apparent conflict of interest;
- (viii) *Inaccurate grant and awards application*: Providing incomplete, inaccurate or false information in a grant or award application or related document, such as a letter of support or a progress report;
- (ix) *Inaccurate statement of collaborations*. Listing of co-applicants, collaborators or partners without their agreement.

#### 7.9. *Monitoring the implementation of the Policy and Instructions*

The Deputy Minister and the Chief of the Defence Staff via ADM S&T will periodically review this and associated policies, guidelines or tools to ensure they remain relevant and will seek employee and applicable bargaining agent input and feedback on the implementation of the Policy and Instructions and provide performance indicators as practical.

##### 7.9.1. In consultation with the Office of the Chief Science Advisor (OCSA) and PIPSC

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<sup>15</sup> DAOD 5061-0, Research Involving Human Subjects; DAOD 8014-1, Management of Animal Use in Research, Teaching and Testing; DAOD 5062-0, Social Science Research

representatives, ADM(S&T) will develop and implement a monitoring plan within 12 months of it coming into force for the Policy and Instructions to assess a) compliance of DND and CAF activities with the Policy and Instructions and b) the extent to which policy objectives have been attained.

7.9.2. Any plan developed under paragraphs 7.9.1 will explicitly identify (a) activities to be monitored; (b) appropriate indicators for monitoring and assessing compliance and achievement of policy objectives, including how the data on these indicators will be collected, annotated and curated and baseline characterized and changes from baseline estimated and evaluated; (c) compliance/results issues; (d) corrective actions to address them and expected results; and (e) responsible organizations for these actions.

7.9.3. A copy of all data and information collected as part of monitoring will be forwarded annually to the Office of the Chief Science Advisor (OCSA), the appropriate National Union-Management Consultation Committee and the Governance Committee for Implementation of Government-Wide Scientific Integrity Policy comprised of the Secretary of the Treasury Board, the Chief Science Advisor and the President of the Professional Institute of the Public Service of Canada.

## **8. Responsibilities**

### *Deputy Minister and Chief of the Defence Staff*

The Deputy Minister and the Chief of the Defence Staff and their delegates are responsible for fostering an environment that encourages excellence and integrity in research, science and related activities, and for promoting a culture of open communication where DND employees and CAF members may disclose, in good faith, information concerning breaches of scientific integrity. The Deputy Minister and the Chief of the Defence Staff are also responsible for:

- ensuring that the Policy and Instructions are communicated to all DND employees and CAF members;
- monitoring compliance with the Policy and Instructions within DND and the CAF and taking corrective action as needed;
- performance evaluation of the Policy and Instructions;
- providing an annual confirmation of the compliance and reporting with the Policy and Instructions as requested by the Governance Committee for Implementation of Government-Wide Scientific Integrity Policy.

### *Directors, managers and supervisors*

Directors, managers and supervisors are responsible for implementation of these Policy and Instructions. Such responsibilities include:

- informing DND employees and CAF members about the Policy and Instructions and ensuring that they are aware of their rights and responsibilities and obligations under the Policy;

- ensuring compliance with the Policy and Instructions, providing to DND employees and CAF members information about the processes available to them if they wish to make an allegation under the Policy and Instructions, and addressing all allegations of breach of scientific integrity that are brought to their attention or of which they are aware including advising the Science Integrity Lead;
- ensuring that DND employees and CAF members are aware of professional development and training opportunities that may be available in support of the Policy and Instructions.

Specific responsibilities will be articulated in procedures and guidelines that will be developed to support the Policy and Instructions.

*DND employees and CAF members who conduct research, science or related activities or use research or science activity outputs*

All DND employees and CAF members involved in the design, conduct, management, review, use or communication of research, science or related activities, and all persons conducting research, science or related activities under the auspices of DND/CAF will have primary responsibility for:

- ensuring their behaviour and conduct conforms to the principles of scientific integrity;
- ensuring that they design, conduct, manage, review, use or communicate research or science in a manner fully consistent with the Policy and Instructions;
- reporting a suspected breach of scientific integrity as soon as possible; and
- participating in good faith in any inquiry or investigation conducted pursuant to the Policy and Instructions.

## 9. Definitions

*Alteration* (of a scientific or research work): any change in the form or content of a research or scientific work that may affect the interpretation of the work and/or its implications.

*Breach* (of scientific integrity): failure to abide by any of the provisions of the Policy and Instructions.

*Classified or sensitive research or scientific information*: research or scientific information which would normally be exempt from disclosure under the *Access to Information Act*.

*Clear and compelling reasons* (for withholding publication of scientific or research information): legitimate reasons include, but are not limited to: (a) disclosure of such information is exempt under the *Access to Information Act* or the *Security of Information Act*; (b) technical or technological constraints limit or prevent making the information available; (c) quality/value of the publication was defined as being inadequate by independent peers.

*Client*: any person, institution or organization, whether internal or external to government, who



is the recipient and/or user of research or scientific data, products, services or information, and who is involved with establishing the question or topic of the research or scientific work in question.

*Collaborator*: any person, organization or institution with whom/which a DND employee or CAF member undertakes the design, conduct, management, review or communication of research, science, or related activities and who/which does not receive direct or indirect remuneration.

*Communication (of science)*: science communication involves any exchange of scientific or research information (including research results and interpretations thereof, methods, protocols, data, and products) in any form, between or among researchers or scientists (science and research producers) and the consumers or users of this information, including CAF members, other scientists or researchers, other government employees, and the public.

*Compelling evidence*: evidence of sufficient strength to convince the decision-maker that it is likely that the claim for which the evidence is adduced is true.

*Evidence-informed decision taking*: evidence-informed decision making involves integrating the best available research evidence into the decision-making process.

*Interference*: any action that alters or suppresses the work or the impartiality of a scientist or researcher, as understood within the *Values and Ethics Code for the Public Sector* and the *Department of National Defence and Canadian Forces Code of Values and Ethics* including the expectation that they provide decision makers with all the information, analysis and advice they need, while striving to be open, candid and impartial. Interference also includes alteration or inappropriate suppression of research methodology and results or dissuasion of reporting of results by any party, including clients.

*Related activity*: any activity that (a) supports science or research (e.g. laboratory operations and management; infrastructure (including information and communication infrastructure); (b) uses research or scientific information as an input (e.g. solicitation or preparation of science advice; evaluation of research or scientific evidence); (c) involves the curation, communication or archiving of scientific or research data or information.

*Research*: any undertaking intended to extend knowledge through a disciplined inquiry or systematic investigation<sup>16</sup>.

*Researcher*: employees primarily involved in the application of comprehensive scientific and professional knowledge to the planning, conduct, evaluation and management of fundamental or applied research, knowledge enhancement, technology development and innovation relevant to defence science, historical research and archival science, mathematics and the natural sciences. (*N.B.* These definitions follow the RE occupational group definition for the public service<sup>17</sup>.)

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<sup>16</sup> Adopted from the 2008 Tri-Council definition of research, available at: [http://www.pre.ethics.gc.ca/policy-politique/initiatives/docs/Definition\\_of\\_Research\\_-\\_January\\_2008\\_-\\_EN.pdf](http://www.pre.ethics.gc.ca/policy-politique/initiatives/docs/Definition_of_Research_-_January_2008_-_EN.pdf)

<sup>17</sup> Research Group Definition: <https://www.canada.ca/en/treasury-board-secretariat/services/collective-agreements/occupational->

*Science*: the pursuit and application of knowledge and understanding of the natural world through application of one or more elements of the scientific method. In the context of the current policy, it is understood to include both fundamental and applied natural, physical, biomedical and social science, as well as engineering and mathematics<sup>18</sup>.

*Scientific integrity*: the condition resulting from adherence to concepts of transparency, openness, high quality work, avoidance of conflict of interest and ensuring high standards of impartiality and research ethics.

*Scientist*: employees primarily involved in the application of comprehensive scientific and professional knowledge to one of the applied science programs involving actuarial science, agriculture, biology, chemistry, forestry, meteorology or physical sciences, which include physics, planetary and earth sciences, scientific regulation and patents. (*N.B.* These definitions follow the SP occupational group definition for the public service<sup>19</sup>.)

*Suppression* (of a scientific or research work): the deliberate withholding of a scientific or research work, or any portion thereof, from publication or dissemination, in the absence of clear and compelling reasons for doing so.

*Timely manner*: within a time frame that is consistent with usual review and approval processes, and consistent with logistical and resource constraints. The DND and the CAF as well as external collaborators may impose reasonable embargo periods to respect the right of a principal investigator to first publication.

## 10. Enquiries

For further information on the Policy and Instructions, contact ADM(S&T).

## 11. References

### *Acts, Policies, Directives and DAODs*

- *National Defence Act*
- *Access to Information Act*
- *Security of Information Act*
- *Financial Administration Act*
- *Security of Information Act*
- *Public Servants Disclosure Protection Act*
- *Values and Ethics Code for the Public Sector, Treasury Board*
- *Framework for the Management of Compliance, Treasury Board*
- *Policy on Government Security, Treasury Board*
- *Government Communications Policy, Treasury Board Secretariat*
- *Directive on the Management of Communications, Treasury Board*
- *Policy on Conflict of Interest and Post-Employment, Treasury Board*

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[groups/research.html](#)

<sup>18</sup> Adopted from the Science Council: <https://sciencecouncil.org/about-science/our-definition-of-science/>

<sup>19</sup> Applied Science and Patent Examination Group Definition: <https://www.canada.ca/en/treasury-board-secretariat/services/collective-agreements/occupational-groups/applied-science-patent-examination.html>

- National Defence Security Orders and Directives
- Department of National Defence and Canadian Forces Code of Values and Ethics
- DAOD 7023-0, Defence Ethics
- DAOD 7021-0, Conflict of Interest and Post Employment
- DAOD 2008-1, Public Affairs Accountabilities and Responsibilities
- DAOD 2008-2, Media Relations and Public Announcements
- DAOD 5061-0, Research Involving Human Subjects
- DAOD 8014-1, Management of Animal Use in Research, Teaching and Testing
- DAOD 5062-0, Social Science Research
- DAOD 7024-0, Disclosure of Wrongdoings in the Workplace
- DAOD 7024-1, Internal Procedures for Disclosure of Wrongdoings in the Workplace

### Other References

- Queens regulations and orders for the CAF 19.14 Improper Comments
- OR&O 19.36, Disclosure of Information or Opinion
- Queens regulations and orders for the CAF 19.36 Disclosure of Information or Opinion
- Disclosure of Wrongdoing – Guidelines for Department of National Defence (DND) Managers and Employees, and Canadian Armed Forces (CAF) Supervisors and Members
- DAOD 5046-0, Alternate Dispute Resolution
- Alternative Dispute Resolution