Research Quality Development of the Thailand National Science and Technology Development Agency (NSTDA)

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National Science and Technology Development Agency: (NSTDA) in Thailand

Ministry of Higher Education, Science, Research, and Innovation

Established: in 1991

Employees: 2,952 as of 1 March 2019

69.18%: Researcher

Budget: USD113M from the Government + 20% from contracts, services and licenses

Missions: To drive Thailand science, technology and innovation by

- research, development, design and engineering
- technology transfer
- human resource development
- Infrastructure development
- efficient internal management

4 National Research Centers
Research and Development Quality Management (RQM)

**Pre-Research**
- Research Quality Policies
- Law and Regulation Information and Guidelines
- Proposal Clinic
- Responsible Conduct of Research (RCR)
- Advocacy and Training

**Research**
- Research Practice Training and Workshop
- Data Management
- Promoting Record Keeping e.g. Guideline, eLN
- Standard Procedure in Research Practice

**Post-Research**
- Manuscript Clinic
- Authorship/Inventorship Guideline
- Regulator Consultation (Food and Drug Administration: FDA)
Research Quality Development of NSTDA

2017 Overall Research Quality
- Standard Lab Notebook was not widely used in NSTDA.

2018 Record Keeping
- Half of the respondents had not trained to record data in lab notebook.

2019 Authorship
- Authorship criteria
- Responsibility
- Conflict

Discovered Issue

RQM Respond
- Knowledge sharing/Advocacy
- Policy statement of record keeping
- Research record keeping guideline
- e-Learning
- Workshop
- Electronic lab Notebook (ELN)
- Seminar
- E-Learning
- Guideline
Objectives of Authorship Survey

To identify NSTDA staff’s understanding and practices about authorship.

To identify issues for research quality improvement.
Methodology – Interview survey

Random Sampling

1,224 persons
167 persons

Plan

15%
14%

33%
30%
26%
11%

Personal interview

Analysis

1 hour per person

Research staff
working experiences > 1 year
(Data as of 5 Feb 2019)

Interviewee 13.7%
personal interview
during 15 Feb - 9 Apr 2019
(7 weeks)
2019 Survey: Demographic data

Gender:
- 54% Male
- 46% Female

Position:
- Researcher 53%
- Research Assistant 38%
- Engineer 6%
- Research specialist 1%
- Technician 2%

Age:
- 26-30: 6%
- 31-35: 21%
- 36-40: 28%
- 41-45: 26%
- 46-50: 11%
- 51-55: 7%
- 56-60: 2%

Work Experience:
- 11-15 years: 24%
- 6-10 years: 22%
- 1-5 years: 22%
- 25-30 years: 3%
- 21-25 years: 13%
- 16-20 years: 16%
Authorship study

Being an author in any research publication in the last years.

93% Yes

Type of publications

1. Research Article
2. Short Communication
3. Scholar Review
4. Proceedings with peer review
5. Proceedings conference without peer review
6. Book / Monograph / manual
7. Text book
8. Articles in publications, disseminate knowledge or create scientific awareness to the public
Awareness of Authorship Criteria

Respondents 161 persons

Know + not sure 91%

Know 31%

Know but not sure 60%

Not known 9%

Categories by position

<table>
<thead>
<tr>
<th>Position</th>
<th>Know</th>
<th>Know but not sure</th>
<th>Not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineer</td>
<td>18%</td>
<td>73%</td>
<td>9%</td>
</tr>
<tr>
<td>Researcher</td>
<td>41%</td>
<td>52%</td>
<td>7%</td>
</tr>
<tr>
<td>Research Assistant</td>
<td>21%</td>
<td>67%</td>
<td>11%</td>
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</tbody>
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161 persons

0% 50% 100% % respondents
ICMJE Criteria

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work
- Drafting the work or revising it critically for important intellectual content
- Final approval of the version to be published
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Agree to all the authorship criteria according to ICMJE
Respondents 162 persons

92%
33% believed that they not responsible for the content in the article.

20% believed that they are not responsible for the integrity of the article.
How to handle conflict of authorship

27% had encountered experience a conflict

- Inform project leader, 20%
- Inform co-researcher, 32%
- Inform supervisor, 13%
- Inform committee/the person who has the authority to make a decision, 5%
- Silent to avoid work difficulties, 21%
- Other, 13%

- 43% of research assistant
- 41% of researcher

73% had never experience a conflict

- Inform project leader, 24%
- Inform co-researcher, 32%
- Inform supervisor, 27%
- Inform committee/the person who has the authority to make a decision, 8%
- Silent to avoid work difficulties, 2%
- Other, 6%
- 30% of researcher
- 33% of engineer
- 33% of research assistant
- 50% of technician

73% had never experience a conflict
Significant number of research assistants (67%) and engineers (73%) were not sure about authorship criteria.

33% of respondents agreed that author should be responsible for content accuracy in only part of their own contribution. However, 80% agreed that author should be responsible for the integrity of the whole article.

92% of respondents agreed to the ICMJE criteria although they were not in the medical field.

Majority of those who encountered a conflict of authorship informed their colleagues, project leaders, or supervisor.
The results from the survey provide a guideline for research quality improvement.

- Organized seminars
- Provided e-Learning courses on authorship
- Offered authorship guideline
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