

## PD10A CPD matrix – General Research Skills

### 1. Domain Knowledge

<b>Foundation</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate broad-based awareness of your discipline area including knowledge of key themes, topics and major research areas</li> </ul>
<b>Intermediate</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate growing expertise in a specialist area whilst maintaining broad-based knowledge, keeping abreast of relevant publications and being aware of major areas of national and international research work.</li> </ul>
<b>Advanced</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate an established track record of achievement in a clearly defined specialist area</li> <li>• think creatively to help develop theory and to generate new research ideas</li> </ul>
<b>Expert</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate in-depth knowledge of the field and show significant contribution to theory and practice in the specialist area</li> <li>• demonstrate innovation in the specialist area</li> <li>• can create and direct research strategy to generate new research ideas</li> </ul>
<b>Development activities</b>	<p>You could:</p> <ul style="list-style-type: none"> <li>• attend/participate in research seminars</li> <li>• familiarise yourself with standard text in the discipline</li> <li>• scan relevant professional journals on a regular basis</li> <li>• read papers/books related to your specialist area</li> </ul>

### 2. Data Collection and Analysis

<b>Foundation</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• specify data collection/analysis methods relevant to the specialist area and understand their strengths and limitations</li> <li>• use them, with guidance, to generate valid data</li> </ul>
<b>Intermediate</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• assess the strengths and weaknesses of relevant data collection/analysis methods and identify the most appropriate in a given context</li> <li>• design (and justify the design) of a research study</li> <li>• apply chosen methods effectively</li> </ul>

<b>Advanced</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate a comprehensive knowledge of how to use discipline-specific data collection/analysis methods</li> <li>• combine methods and techniques effectively and tailor them to specific research investigations</li> </ul>
<b>Expert</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• maintain a thorough grasp of discipline-specific data collection/analysis methods and know their strengths and weaknesses</li> <li>• help others to select and use appropriate methods</li> <li>• develop new and innovative methods</li> </ul>
<b>Development activities</b>	<p>You could:</p> <ul style="list-style-type: none"> <li>• identify opportunities to develop more skill in this area through your current job</li> <li>• discuss methods with colleagues outside your Research Group (and Department)</li> <li>• attend specialist courses (e.g. software-based/numerical analysis)</li> </ul>

### 3. Generating Research Output

<b>Foundation</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• publish one paper per year in a peer-reviewed academic journal</li> <li>• produce high quality research outputs</li> </ul>
<b>Intermediate</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• publish two papers per year in a peer-reviewed academic journal</li> <li>• take responsibility for a significant part of the research project output (final reports etc.)</li> <li>• produce a personal publication strategy</li> </ul>
<b>Advanced</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• publish three papers per year in a peer-reviewed academic journal</li> <li>• present papers at academic conferences</li> <li>• edit books/book chapters</li> <li>• direct the research output of others</li> </ul>
<b>Expert</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• publish review articles/critiques of significant texts in the discipline</li> <li>• develop research publications strategies at institutional level</li> </ul>
<b>Development activities</b>	<p>You could:</p> <ul style="list-style-type: none"> <li>• develop your writing skills by attending relevant courses and</li> </ul>

	seeking feedback from peers <ul style="list-style-type: none"> <li>• identify relevant journals for your specialist area</li> <li>• become familiar with the custom and practice of appropriate journals</li> <li>• write your own personal publications strategy</li> </ul>
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#### 4. Managing a Research Project

<b>Foundation</b>	Can: <ul style="list-style-type: none"> <li>• manage own contribution to the research project to produce work to the required standard, within the required time frame</li> </ul>
<b>Intermediate</b>	Can: <ul style="list-style-type: none"> <li>• plan and organise a project through all stages of the project life cycle (e.g. 'start up' to exploitation of findings)</li> <li>• assign tasks and give guidance to a research team</li> <li>• communicate with team members</li> <li>• monitor and guide performance</li> </ul>
<b>Advanced</b>	Can: <ul style="list-style-type: none"> <li>• set up, direct and manage portfolios of collaborative projects through all stages of the project life cycle</li> <li>• develop effective communication learning systems on projects</li> </ul>
<b>Expert</b>	Can: <ul style="list-style-type: none"> <li>• contribute to the development of best practice in research management at institutional policy level by supporting the development of research management skills at institutional, departmental and individual level</li> </ul>
<b>Development activities</b>	You could: <ul style="list-style-type: none"> <li>• identify and learn from good project managers</li> <li>• identify ways of taking more responsibility for project management</li> <li>• become aware of critical success factors in good project management</li> <li>• attend relevant training courses</li> </ul>

#### 5. Exploitation of Research

<b>Foundation</b>	Can: <ul style="list-style-type: none"> <li>• identify some potential benefits/beneficiaries of research outputs</li> </ul>
<b>Intermediate</b>	Can: <ul style="list-style-type: none"> <li>• identify current/potential users of research outputs</li> <li>• formulate appropriate research dissemination strategies</li> </ul>

	<ul style="list-style-type: none"> <li>• explain possible applications of research outputs in a way that specialists/non-specialists can understand</li> </ul>
<b>Advanced</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• collaborate with current/potential users to find ways of exploiting research outputs</li> <li>• work with interested parties to help them apply research findings</li> <li>• understand copyright and Intellectual Property Rights issues</li> </ul>
<b>Expert</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• develop detailed strategies to exploit research</li> <li>• prompt current/potential users to exploit research</li> <li>• advise/direct local, national and international strategies to exploit research</li> <li>• formulate policy/strategy based on research evidence</li> </ul>
<b>Development activities</b>	<p>You could:</p> <ul style="list-style-type: none"> <li>• try and understand the political/medical/social scientific implications of your research</li> <li>• think of practical ways in which the research could be used</li> <li>• consider potential users and envision possible uses of the research</li> </ul>

## 6. Understanding the Research Environment and Setting the Agenda

<b>Foundation</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate broad-based awareness of the discipline area</li> </ul>
<b>Intermediate</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate knowledge of relevant national/international centres of research excellence, leading academic journals and their requirements, leading figures in the discipline and current research issues and questions</li> </ul>
<b>Advanced</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• peer review grant applications and research articles</li> <li>• supervise postgraduate students, projects and programmes of study</li> <li>• contribute to research strategy formulation</li> <li>• scope/direct significant institutional research programmes</li> </ul>
<b>Expert</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• formulate research and scientific strategy</li> <li>• scope, direct and lead major national/international research programmes</li> <li>• lead national/international debate on research policy and planning</li> </ul>

<b>Development activities</b>	<p>You could:</p> <ul style="list-style-type: none"> <li>• increase your network of contacts through attending relevant research events</li> <li>• scan professional journals to identify new research directions</li> <li>• familiarise yourself with the aims and objectives of key research funding bodies in your discipline</li> </ul>
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## 7. Research Reputation/External Esteem

<b>Foundation</b>	Not applicable
<b>Intermediate</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate emerging national impact/reputation through conference presentations, invitations to collaborate in joint research, published output in refereed journals</li> </ul>
<b>Advanced</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate engagement in national/international research activity, e.g. as reviewer in peer review process, expert evaluator, membership/involvement in prestigious research organisations/professional bodies</li> </ul>
<b>Expert</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate authorship of landmark publications</li> <li>• membership of international advisory groups (government, commerce, industry)</li> <li>• engagement in strategic planning groups at national/international level</li> </ul>
<b>Development activities</b>	<p>You could:</p> <ul style="list-style-type: none"> <li>• join specialist interest groups</li> <li>• develop a specialist expertise</li> <li>• seek opportunities to present your work at institutional then national/international level</li> <li>• participate in writing research papers with established researchers</li> </ul>

## 8. Winning Research Income

<b>Foundation</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• contribute to proposal generation, with guidance</li> <li>• can conduct a literature search and review for inclusion in a proposal</li> </ul>
<b>Intermediate</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• develop all elements of a research proposal, e.g. context setting, setting of research questions, literature review, costing the research project</li> </ul>

<b>Advanced</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• originate and develop research proposals in your specialist area</li> <li>• prove that you are an established grant holder/principal investigator</li> <li>• originate peer reviews and grant proposals for research funding bodies</li> </ul>
<b>Expert</b>	<p>Can:</p> <ul style="list-style-type: none"> <li>• demonstrate a good track record in winning grants</li> <li>• help others to generate research proposals</li> <li>• prove that you are a panel member for bodies awarding or commissioning research</li> </ul>
<b>Development activities</b>	<p>You could:</p> <ul style="list-style-type: none"> <li>• seek opportunities to be involved in proposal development</li> <li>• obtain peer feedback on your proposals at draft stage</li> <li>• identify funders in your specialist area and understand their aims and objectives</li> <li>• join/form a small group of researchers to brainstorm ideas/share knowledge</li> </ul>

Adapted from the CPD Skills Matrix, developed by Professor Leela Damodoram et al (2001), University of Loughborough