# Worksheet for Values-based Academic Assessment

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| Values | Considerations | | Activities or outputs | Behaviors and Indicators |
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| Accessibility | What types of accessibility are important?<br><br>To whom should academic work be accessible?<br><br>How should academic work be made accessible? | Public accessibility | Open scholarly products | Academics share their scholarly outputs (articles, book chapters, data, software, research methods, etc.) via publicly accessible online platforms. |
| | | Educational accessibility | Open educational resources | Academics make efforts to reduce the cost of and increase access to education by creating and/or using open educational resources (e.g. open textbooks) when possible. |
| | | Intellectual accessibility | Accessible communication | Academics make their research understandable to a broad range of audiences by writing plain-language summaries, translating content for global audiences, blogging, recording podcasts, media outreach, etc. |
| | | Machine accessibility | Sharing machine-readable research outputs | Academics share their (meta)data, manuscripts, or other outputs in machine-readable formats, or via platforms that convert them to such formats, to facilitate reusability by text and data mining technologies, AI, etc. |
| | | Accessibility for those with different abilities | Accessible teaching practices | Academics make their teaching accessible via different modalities and |

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| | | | | assistive technologies, and provide accommodations for students. |
| | | | Accessible research reporting | Academics use data visualizations with high contrast or color schemes accessible to those with altered color vision, and provide manuscripts in machine-readable formats that can be processed by assistive technologies. |
| Advancing Knowledge | Whose knowledge should academic work advance? | Members of the public, patients, or practitioners | Education, community solutions, or translational research | Academics produce educational materials or research that is used by teachers in schools, doctors in clinics, patients, etc., to inform the local population or aid decision-making. |
| | | Policymakers | Applied (policy-informing) research | Academics share white papers, op-eds, or datasets that are used by local, state, or federal governments, cited in policy briefs or memos, or used to develop laws or strategies. |
| | | Researchers | Advances in academic fields | Academics publish peer-reviewed articles, book chapters, or other research outputs that are cited by researchers within or beyond their field. Academics are invited to present at professional conferences. |
| | | | Peer review of research outputs | Academics contribute knowledge by peer-reviewing and giving constructive feedback to other researchers on how to improve their manuscripts, book chapters, conference abstracts, and |

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| | | | | other research outputs. |
| | | Students | Teaching and mentoring | Academics participate in educational activities, including teaching classes, tutoring students, organizing journal clubs, and presenting or organizing seminars for students. |
| Collaboration or Partnership | With whom should academics collaborate or partner? | Faculty | Collaborative teaching or labs | Academics partner with other academics to co-teach classes, or co-lead collaborative lab spaces in which infrastructure and materials are shared and partnerships stimulated. |
| | | Researchers | Collaborative research | Academics collaborate with other researchers within and beyond their field, as demonstrated by co-funded grants, co-authored publications, or other co-developed research outputs. |
| | | Community | Community partnerships | Academics involve local communities in the co-conceptualization, co-creation, and co-leadership of educational and research initiatives of relevance to community members. |
| | | Industry | Industry partnerships | Academics collaborate with industry partners on applied research. This could involve patent development, but with priority given to non-exclusive IP licensing that allows for reuse. |
| Communication | To whom should academics communicate their work? | Researchers | Journal articles, preprints, and other scholarly materials | Academics communicate their findings to other researchers by |

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| | | | | publishing articles, books, or monographs in peer-reviewed venues, posting their manuscripts on public preprint servers, sharing results via conference presentations, etc. |
| | | Public | Science or scholarly communication | Academics communicate their findings to the public through blog posts, media interviews, podcasts, videos, talks and presentations, plain-language summaries, or other digestible multimedia formats. |
| | | | Building public trust in science | Academics share and communicate findings to the public in ways that increase engagement with and understanding of scientific developments, which in turn help combat mis/disinformation and build public trust in science over time. |
| | | Practitioners or policymakers | Briefs, white papers, policy papers | Academics communicate their findings to practitioners or policymakers via venues that reach these audiences and in accessible, understandable language. |
| Creativity or Originality | Which aspects of academic work should be creative or original? | Teaching | Creative, innovative teaching | Academics utilize a variety of educational approaches, modalities, and emerging technologies, taking into account different learning styles and encouraging student-led learning. |
| | | Research | Innovative research | Academics develop novel research |

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| | | | | methods, software, materials, or tools. Published studies show originality of approaches and thought, rather than negligible variations on a theme, or repetition. |
| Diversity and Inclusivity | Which aspects of academic work should be diverse and inclusive? | Education | Diverse and inclusive teaching perspectives and practices | Academics foster a class environment in which diverse perspectives are encouraged, use teaching methods inclusive of different learning styles, and use diverse source materials, e.g. by women and indigenous authors. |
| | | Mentoring | Representation of mentees | Academics show a track record of mentoring junior academics and students from different genders and underrepresented backgrounds, and help create pathways for diverse scholars to engage in research. |
| | | Research | Representation of research participants | Academics recruit diverse research participants with respect to characteristics like age, ethnicity, or gender, as relevant for their research. |
| | | | Inclusive research design | Academics involve potentially impacted populations (e.g. patients, indigenous groups) in the co-design and planning of research projects. |
| | | | Representation on research teams | Academics build or participate in research teams that include diverse representation and leadership roles for scholars of different genders and |

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| | | | | underrepresented backgrounds; could also include community members. |
| | | | Research ideas and methodologies | Academics demonstrate diversity of research ideas and methodologies, and recognition of different systems of knowing or research traditions. |
| Engagement | With whom should academics engage? Who are the relevant populations?<br><br>Who do academics or their institutions serve? | Students within institution | Participatory teaching practices, student-engaged learning | Academics teach courses which include student discussion sessions, group problem-solving, hands-on experiments, or other participation. |
| | | | Student involvement in research | Academics oversee student research projects, including independent studies, theses, etc., and students participate in project design. |
| | | Students outside institution | Educational outreach activities | Academics give talks at local schools (K-12, and/or other universities), run educational workshops for students, are interviewed by students, etc. |
| | | Local community | Community outreach activities | Academics give talks at public events, run public workshops, or host 'open house' events at their laboratories. |
| | | | Community spaces | Academics oversee spaces where the public can come and participate in scientific activities, e.g. makerspaces. |
| | | | Community involvement in research | Academics oversee civic science or community-engaged research projects, where community members |

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| | | | | participate in data collection. |
| | | | Mission-aligned engagement | Academics engage the populations their institutions aim to serve, e.g. underrepresented groups in the case of Minority-Serving Institutions, indigenous groups for tribal colleges, and people from certain areas or states for land-grant universities. |
| | | Research participants | Patient involvement in research | Academics oversee patient-engaged research, where patients participate in setting project priorities, design, and may sit on advisory boards or even be formal project collaborators. |
| Equity | Equity for whom, and with respect to which academic practices? | Access to scholarship | Research sharing | Academics provide equitable access to their research, scholarship, and teaching materials by sharing through free, publicly accessible platforms. |
| | | Authorship | Equitable opportunities for authorship | Academics ensure that project contributors, including students, postdocs, community leaders (in community-engaged projects), etc. are afforded authorship when appropriate and taking into account a range of different contributions. |
| | | Teaching | Equitable teaching practices | Academics provide accommodations for differently-abled students, a variety of educational methods and learning opportunities, and flexibility to give students the best chance to succeed. |

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| Leadership | In what aspects of their work should academics demonstrate leadership?<br><br>How will this depend on academic career stage? | Early-career academics (pre-tenure) | Building a research group | Academics establish and build up an independent research group, defining priorities, assigning responsibilities, and procuring funding. |
| | | | Disciplinary leadership | Academics take on leadership roles, such as sitting on or chairing journal editorial boards, chairing organizing committees for conferences, or serving their professional society, to strengthen their discipline. |
| | | Mid- to late-career academics (post-tenure) | Institutional leadership | Academics take on leadership positions at their institution by chairing committees (hiring, P&T, etc.), chairing their department, or leading their school (dean, provost, or similar). |
| | | | Disciplinary leadership | Academics take on leadership roles, such as Editor in Chief of a journal, sitting on or chairing their professional society board, or chairing grant review panels, to strengthen their discipline. |
| | | | Research leadership | Academics lead research projects involving the coordination and collaboration of multiple investigators or labs, or lead research centers. |
| Mentorship | Who should academics advise or mentor? | Students | General advising and mentoring | Academics advise students on course electives, grad school options, and professional development. Could also include guiding students on short-term educational or research projects. |

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| | | | Thesis or dissertation advising | Academics act as lead or co-advisor on student thesis or dissertation research projects, mentoring students throughout the research design, experimental phase, and defense. |
| | | Postdoctoral researchers | Postdoctoral mentoring | Academics advise postdoctoral researchers, with an emphasis on helping these scholars (co)design research projects and work gradually toward academic independence. |
| | | Faculty | Faculty mentoring | Academics mentor junior faculty on issues like institutional procedures, tenure and promotion requirements, and professional development. |
| Openness or Transparency | What aspects of academic work should be open or transparent? | Teaching | Transparent teaching practices | Academics outline course policies, including grading schemes, etc. and post this information openly online. |
| | | | Open educational resources | Academics share class materials, such as notes, tutorials, videos, or authored textbooks openly online. |
| | | Research | Open research methods | Academics share research methods via public platforms. This could include study preregistration, protocol sharing, and open notebooks. |
| | | | Open research products | Academics share research outputs, such as code/software, data, tangible laboratory materials (e.g. cell lines, plasmids) via public repositories. |

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| | | | Open reporting of results | Academics share their research reports via public preprint servers, repositories, or open access journals. |
| | | Funding | Transparent reporting of funding sources | Academics openly disclose (in publications, on their websites, etc.) which organizations fund their research, and where any potential conflicts of interest may exist. |
| Public good | What population(s) does the academic institution serve? Which aspects of academic work should benefit the public? | Education | Sharing educational resources | Academics share educational materials, like class notes, authored textbooks, and videos, via public platforms that can be freely accessed and materials used by local schools. |
| | | Outreach | Institution- or mission-aligned outreach | Academics participate in outreach activities, especially to engage or inspire the populations they serve as Minority-Serving Institutions, Land-grant universities, or other goals aligned with their institutional mission. |
| | | Research | Applied research | Academics conduct research of significance to society, addressing problems of relevance to local, regional, or international communities. |
| | | | Community-engaged research | Academics ensure their research has relevance and engages or produces real solutions by involving community participants in co-design, data collection, translation of results, etc. |

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| | | | Research sharing and communication with the public | Academics share their results with the public, communicating with understandable language that facilitates reuse of information. |
| Quality and Rigor | What aspects of academic work should demonstrate quality and rigor?<br><br>How should quality and rigor be indicated or measured? | Research | Ethical research practices | Academics get ethical approval for their research from the appropriate review boards, or permission from community leaders, tribal councils, or other relevant groups, beforehand. |
| | | | Methodological good practices | Academics use proper experimental controls, robust measurement techniques, or other good practices in accordance with disciplinary norms. |
| | | | Study pre-registration and registered reports | Academics pre-register or conduct registered reports that outline their methodology and data analysis plans prior to conducting the research. |
| | | | Protocol sharing | Academics share their detailed research protocols, and modifications, via publicly accessible platforms. |
| | | | Reporting standards | Academics report their research according to established guidelines and standards (e.g. ARRIVE, CONSORT, PRISMA, etc.). |
| | | Teaching | Quality of content | Academics give classes with rich, detailed content, in line with the syllabus, and updated regularly with the latest findings in the field. |

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| | | | Quality of environment and interactions | Academics foster a class environment where students can ask questions, share perspectives, and engage in interactive, participatory learning. |
| Reproducibility or verifiability | What aspects of academic work should be reproducible or verifiable?<br><br>How will this depend on, or vary, with discipline? | Research | Computational reproducibility | Academics share their code/software and provide detailed documentation to allow other researchers to re-run/verify simulations or analyses. |
| | | | Data analysis reproducibility | Academics share their data and metadata according to the FAIR Principles, and documentation on how data were analyzed to allow other researchers to re-run/verify analyses. |
| | | | Experimental reproducibility | Academics share their detailed experimental methodology to allow others to re-run/verify experiments. |
| | | | Trust-building transparency | Academics whose research is not reproducible (e.g. due to constraints like limited sample availability, ethical considerations, etc.) share sufficient details about how their study was conducted so that other researchers can evaluate the validity of results. |