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ENABLING SPACE WORKFORCE DEVELOPMENT THROUGH SYSTEMS THINKING

**Abstract**

Conscious bias refers to a deliberate preference or prejudice towards or against a particular group based on characteristics such as gender, race, religion, or sexual orientation. This kind of bias can manifest itself in numerous ways, including discriminatory hiring practices or unequal promotion opportunities, and can lead to a lack of equity, inclusion, and diversity (EDI) in the workplace. On the other hand, unconscious bias is a type of implicit bias that can influence an individual's decision-making without them being aware of it. Unconscious biases are often shaped by social and cultural conditioning and can result in unintended discrimination for specific groups. Tackling biases is crucial to building a strong workforce for the space industry. Nonetheless, understanding the underlying causes of these predispositions is not a straightforward process. Hence, this paper seeks to follow an innovative systems thinking approach to map the complex interconnections and interdependencies that exist within public and private actors in the Canadian space sector, and to recognize how biases can create systemic barriers at both, individual and organizational levels. This report discusses how system thinking tools such as stakeholder mapping, network analysis, and causal loop diagrams can be employed to properly account for all the public and private actors in the Canadian space sector. Subsequently, positive, and negative feedback loops are identified to understand how all these actors are connected and interdependent. This analysis considers the flow of information, resources, and knowledge between the different space ecosystem stakeholders. After, casual loop diagrams are used to pinpoint the conscious and unconscious biases that exist within the space industry. This step delves into factors that contribute to biases, such as historical context, organizational culture, and power dynamics. Next, strategies were developed to address biases and to promote workforce development initiatives. These include the development of professional workshops that cover a range of topics such as negotiation, networking, and building allies, all of which are critical skills for individuals to advance in their careers. Additionally, the implementation of that targeted outreach programs at the post-secondary level as a means of creating an active pipeline of highly qualified talent is discussed in detail. Lastly, this study will use the insights gained from its systems thinking assessment to provide companies and non-profits with a toolkit of creative practices for promoting intergenerational and intercultural collaboration between employees.