



Next Generation Explorers Award

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Team Mentorship

Mentoring is a highly rewarding process and an important part of the Frank Arnott-Next Generation Explorers Award (NGEA™). Mentors will provide participants with encouragement, guidance, perspective, access to industry experts and opportunities to review the team's progress and outcomes.

While mentors do not participate in the project, they will introduce undergraduates to modern datasets, real exploration problems and exposure to industry software and processes. Mentors are encouraged to participate in regular meetings with teams during the research period to ensure achievable goals are being set within the available time.

While the rewards that come from mentorship are highly satisfying at a personal level, they also offer a unique way of assessing the suitability of students for potential employment within your organisation.

The Role of the Mentor

Each mentor will have the opportunity to define their own role, with participation being shaped by their industry experience, available time and interest in working with a group of motivated students. At a minimum, mentors are to provide students with general guidance and assist with team building, project selection, networking and collaboration.

To win NGEA™, the team must achieve an outstanding result with limited or no industry experience while juggling their academic studies and other commitments. As such, much of the effort put in by team members may be during vacations or other time away from regular schoolwork. While this is understandable, continued background research and process development must continue throughout the school year. The mentor should ensure that the team meets their deadlines and remains committed to the project, especially in the lead up to the final deadline.

Mentors can advise on how to select and run a project; however, they cannot participate in the actual work being performed. The following sections look at specific segments of the role; however, the guidelines are not overly prescriptive as each mentor will provide a different set of skills to a project and varying levels of involvement.

Assist with team building and renewal

During the course of the project, the team might grow and shrink according to the level of commitment of participants. It would be beneficial for mentors to help students select a strong team leader early on in the project. The team leader will need to find diverse members within the field of geoscience or in other disciplines such as data science, computation and visualisation. Mentors may need to help the leader encourage other students to join the team. The mentor's experience can add a level of excitement to participation that is often difficult for a team leader to achieve. Exposure to employment opportunities is a strong motivator and this issue is consistently the number one question asked by students.



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If members of the team leave, mentors will need to help the team leader decide whether to continue with the team as is or to try to find a suitable replacement, even if it is from another university. Alternatively, the mentor may need to help the team modify the project objectives if a key person cannot be replaced.

Innovation project selection

Selecting a suitable project that is achievable with the time resources and delivery schedule is very difficult for a team without exploration experience. The mentor's role is to help them find a suitable project that fits most of the following principles:

- Team member specialisations
- Team member availability and commitment
- Team's passion for specific subject areas
- Relevant mineral exploration problems that fit the theme
- The suitability of competition datasets
- Availability of suitable commercial software and/or open source code
- Realistic goal setting in terms of time restrictions and other commitments.

Regular (goal-oriented) meetings

A mentor's involvement will help keep the team committed to the project. Students will have academic and social commitments to balance, which makes regular meetings to review the team's progress and ongoing resourcing requirements necessary. The discipline of regular meetings will ensure there is steady progress and early detection of problems.

Assist with building a specialist network

It is appropriate for teams to seek advice and ideas from a wide range of technical people as long as they do not participate in the project. Mentors can help locate and connect relevant scientists with the team or provide contacts that may be useful. These contacts expand the size of the team's network and exposure to the experience of senior members of our professions.

This could also lead to the involvement of a secondary mentor who can participate in meetings when the primary mentor is absent and help keep the project on track.

Guiding workflow principles

Sometimes it can take team members a long time to find the best method to achieve a sub-goal in a project. If the work required is standard practice within the industry, the mentor can provide guidelines to the team to work through the procedure.

Software resources

There are many commercial providers of software and it is our experience that software vendors are willing to support teams for the duration of their project. The contribution of the software provider is usually



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acknowledged by the team in presentations and in published documents. The software provider receives publicity across a broad community and the added value in that the members of a team introduce the software products to future employers.

There are many open source repositories that may be able to help with specific aspects of a project if it is not available from a vendor. While there may not be a financial impost with open source repositories, there could be a significant time penalty. The mentor's role is to ensure code writing activities fit into the overall goals of the project and the available time.