

3. En base al documento adjunto "SEVEN STEPS TO SUCCESS IN GRADUATE SCHOOL (AND BEYOND)", por Naomi J. Halas Profesor Rice University, conteste las siguientes preguntas:

- Explique cada uno de los siete pasos de la lista. Con ese fin cuenta con una tabla luego del documento.
- Luego, agregue dos pasos más que a su criterio son necesarios para completar la lista.
- Finalmente, presente una representación gráfica de la estructura organizativa funcional para todos los pasos enlistados.

### SEVEN STEPS TO SUCCESS IN GRADUATE SCHOOL (AND BEYOND)

The following is a list of essential skills that all successful researchers have developed. Without these skills, you cannot expect to succeed in research. The responsibility for the development of these skills is entirely your own. Keep in mind that your graduate education is your personal responsibility.

This list is meant to serve as a personal barometer for you to analyze your strong and weak areas.

#### • WORK

Develop a sense of urgency and the habit of working hard at solving problems. Execute a project, master the difficulties, and debug your theory.

#### • THINK

Understand, explain, and interpret your results. Learn how to perform numerical experiments to gain insight and help construct theories. Continually ask how far you can push and extend your idea. Be contrarian: do not blindly accept claims and conclusions, but rather question whether they are really true and whether they can be extended or applied in new contexts.

#### • READ

Investigate your area. Learn its history and context; understand its technical foundation and background. Learn to read technical papers with a critical eye, and with the expectation of being able to duplicate and extend what is described in the article. Follow your field by reading current journals. Know who did what in your field as well as related areas.

Learn about other areas. Be familiar with other theoretical fields and application areas.

#### • WRITE

Write concise and focused technical papers. Write a larger and more comprehensive document (thesis). Learn how to write proposals. Learn word processing and text formatting appropriate for scientific documents.

#### • SPEAK

Discuss your ongoing research with peers, colleagues, and visitors in an informal setting and at conferences. Learn how to make a well-organized, coherent, and engaging presentation of your research results in front of an audience. Understand the differences in speaking to a general audience versus a technical audience. Cultivate professional contacts and associations.

#### • MANAGE

Time: Develop a sense of how long any specific task will take you to execute. Develop successful working relationships with the people you work with. Research: Develop a research program, not just a number of disconnected projects.

#### • CONTEMPLATE

Anticipate where research is going in your area, both your own and of your colleagues'. Become a generator of research ideas. Learn to be able to judge when an idea is feasible and when a research direction is important or impacting. Keep track of ideas, perhaps in a research diary. Search for connections between ideas.