Member Spotlight

A monthly highlight featuring an ASEG member. All past member spotlights can be found in our newsletter archive.

We welcome **Prof. Andrej Bona** under the spotlight in this issue as he shares his enlightening story!

Andrej is a geophysicist with theoretical physics background.

Andrej: My main interests are the development of algorithms to solve problems in seismic imaging and data processing. I have recently switched from being an academic at Curtin University to being an independent consultant in active and passive seismic exploration. I also advise on the use of Distributed Acoustic Sensing for seismic applications.

General question

1. **For how long have you been a geophysicist?**

   I was introduced to geophysics in 2000. Since then, I have been gradually moving from purely theoretical problems in seismology to very applied ones.

2. **What do you like most about being a geophysicist?**

   The diversity of problems one must solve: from data acquisition, processing to interpretation.

3. **If you weren't a geophysicist, what would you be?**

   Some other type of applied scientist or engineer dealing with technical issues. While I am fascinated by social issues as well, I find them too complex.

4. **What is your best interview tip?**

   Don't be afraid to say "I don't know". Too many people dig themselves into a hole while trying to talk about things they know little about.

5. **What's one thing that we wouldn't know about you?**

   I like mountain biking: I cracked some bones while pushing my limits, but well worth it.

6. **Tell us about your best field meal?**

   Chicken Vindaloo from Strandpipe in Port Augusta, SA. The best curry in the most unexpected place – discovered during one of the seismic filed trips to the area.

7. Where was your best sunrise/sunset location?

West shore of Lake Carey (South of Laverton, WA)

8. What are you reading at the moment?

Project Hail Mary by Andy Weir

9. What made you decide to be a geophysicist?

A chance meeting in the Rocky Mountains, when I was introduced to the subject by a fellow hiker. As I was finishing my thesis on differential geometry aspects of quantum mechanics, I saw little employment opportunities within that filed and seismology looked like an interesting area with real world applications and job prospects.

10. Your funniest or worst field memory?

When my colleague walked into the seismic recorder truck on a mine site in slippers after forgetting to put on his boots in the camp – he never stopped hearing about it from us.

11. What do you do in your spare time?

Reading and biking.

12. What is a challenge that you see in geoscience today, and how do you see the community overcoming it?

The university system has a problem of catering to big classes only. More niche subjects, including geophysics, are being abandoned due to not bringing enough money in tuition fees. One solution could be expanding global upskilling programs for engineers, physicists or similar (such as PetroSkills).

13. What reaction do you mostly get when you tell someone that you are a geophysicist?

"What is geophysics?"

14. When you are asked what you do – what do you do?

I say I do ultrasound on much bigger scale than in medicine, I do it to see what is underground for applications ranging from mineral exploration to carbon underground storage.

15. What is the best way that the ASEG could let the public know about geophysics and its benefit to the everyday life?

Promote geophysics in high school curriculum and provide teaching material to science teachers.

16. Where do you think exploration geophysics will head in the next 10-15 years?

Land access will be more difficult, so airborne and passive methods will be likely utilised more.

17. Given a choice, would you prefer extra mentoring on the science, your career or the how to handle/explain exploration geophysics and its benefits to the community?

The community awareness of what geophysics does, and its benefits is paramount; it can partly address issues such as lack of geophysics graduates and limited land access.

18. What aspect of geophysics do you enjoy most?

Seeing how the raw data gradually morphs into something interpretable.

19. Do you think AI will take over your job or will the human element remain vital to exploration successes?

AI will hopefully take over the mundane aspects of the job, such as first break picking. AI is also going to do all right for well understood problems, such as data inversion, where we can train it on synthetic datasets. It is still not going to do well with design of new methodologies for data analysis and interpretation.

20. What do you think of the covid impact on the geophysical industry?

It proved that some work from home is possible, but not always desirable.