SEF VRES Poster
A Guide to Structure and Content

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Structure / Layout of Your Poster
A good conference poster will typically be arranged into sections to address a series of questions arranged in logical order. Your poster could possibly be structured in the following manner:

1. Introduction
2. Method / Approach / Experimental Details
3. Results
4. Conclusion
5. References (bibliographic references)

This is just a suggested structure. Different section headings may be more appropriate for reporting your VRES project.

Content in Your Poster
The content of your poster might address and briefly answer the following key elements (posed as questions). Here I supply three examples designated a., b. and c. for each of these five questions.

1. Defining the problem. Why is it important / significant?
   a. Current traffic models are ineffective, leading to widespread traffic congestion and chaos which has a significant impact on the economy.
   b. 2% of the population will break a leg in their lifetime. A leg fracture on average takes 6 weeks to heal (under ideal conditions).
   c. Chemical production is a trillion global industry that is vital to all aspects of the modern world. The chemical reactions that they depend on consume vast amounts of energy which contributes to climate change.

2. What is the history of this problem?
   a. In the early 1900s Burns et al. used a slide rule and pen and paper to determine traffic flow.
   b. Proctor and Smith showed that healing rates of broken legs could be improved by immobilizing the affected limb with a plaster cast.
   c. Leading inorganic chemistry research groups found that many chemical reactions could be accelerated by using photocatalysts.
3. What were the limitations of past attempts to solve the problem?
   a. The solution proposed by Burns was effective for small traffic volumes but inadequate for today’s traffic levels which are 10,000 times higher than in 1900.
   b. Plaster casts are effective if the break is clean but ineffective if sections of the bone are splintered or missing.
   c. Most photocatalysts will only catalyse reactions when they are irradiated with UV light. UV lights are expensive and consume a lot of energy.

4. What are you proposing and why is it different / better than previous solutions?
   a. We applied a novel algorithm to computer model traffic flows in large urban environments. This has the potential to make traffic predictions 100 times more rapidly than previous approaches.
   b. 3D printed bone scaffolds can replace missing bone fragments and guide regrowing bone into its natural shape producing a much stronger outcome minimizing the risk of rebreaking the bone.
   c. Photocatalysts of this class will readily initiate chemical reactions after illumination with visible light, which means sunlight can potentially be used as the energy source for chemical reactions.

5. How well did it work?
   a. Our results show that our computer-based model could effectively model traffic flows in Brisbane and Sydney 10 times faster than previously. The approach was not as successful in Canberra as there was hardly any traffic there due to the fact it was quite cold and miserable.
   b. We studied the recovery of 10 patients with broken legs. 5 were treated conventionally (control group) with the other 5 receiving 3D printed bone scaffolds. The control group on average took 2 weeks longer for full recovery. In addition, the group that received the scaffolds did not report any discomfort post recovery, nor displayed any noticeable change in gait or stride pattern.
   c. We were able to initiate the Suzuki reactions using gold nanoparticle photocatalysts that were activated with sunlight. While the total reaction time was double that achieved with conventional UV photocatalysts, a total of 3.5 MJ of energy was saved.

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