

Faculty News

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Genetic differences explain degrees of susceptibility to malaria

Certain ethnic groups contract malaria more seldom than others, even though the disease may be prevalent in the area. The Fulani people in Africa are one example of this. In a dissertation at the Wenner-Gren Institute, Stockholm University, Elisabeth Israelsson presents some important genetic differences between the Fulani and other peoples that live in the same area that may be of great importance for the development of effective protection against malaria.



The Fulani in Africa have a different genetic signature in the genes that affect how quickly and effectively the immune system can act to build up resistance to malaria. The differences between the Fulani and other peoples included in the study were clear among Fulani in both Mali and Sudan. The two groups have been separated for more than a hundred years and have differing genetic make-up, although both groups continue to evince low susceptibility to malaria. The similarities that have now been discovered in certain variations in both Fulani groups indicate that they arose at an early stage in the history of the Fulani and proved to be so beneficial in defending them against malaria that they have persisted in this ethnic group.

"What's more, we see an effect of these differences in the levels of antibodies and parasites, so we believe that these differences are important and that they can help us understand what happens with the immune sys-

tem in a malaria infection," says Elisabeth Israelsson.

It is crucial to develop antibodies against the malaria parasite to be able to resist malaria infection. It is therefore important to understand the mechanisms that influence the levels of antibodies. Among the Fulani, examinations show that they have more antibodies and a more active immune system than other African peoples living in the same area.

"If we can understand why certain individuals can produce more and/or more effective antibodies, we can also try to create new medicines or develop a new vaccine against malaria," says Elisabeth Israelsson.

Malaria has existed as long as human beings have, and the disease has left traces in our genes that can be seen today. In her dissertation, Elisabeth Israelsson studied the minor genetic differences in genes that can be important to the immune system in a malaria infection. In particular, she looked at the difference between

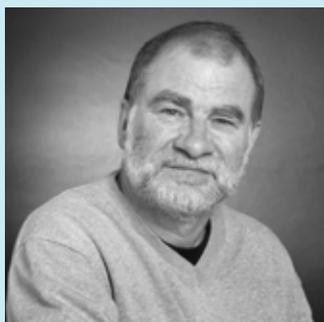
ethnic groups that have varying degrees of susceptibility to malaria.

The findings of the dissertation show that there are differences between the Fulani and other ethnic groups. Among other things, the genes that control how vigorously and rapidly the immune system reacts to an infection are not identical. And there is also a difference in some of the genes that govern the development of antibodies against malaria infection. The dissertation also shows that checking the immune reaction is important, since such examinations may indicate paths for new vaccine models and/or treatments for malaria.

Text: Jonas Åblad/ Paul Parker

Title of dissertation: Host genetic factors and antibody responses with potential involvement in the susceptibility to malaria. The dissertation is available for downloading as a PDF at: <http://urn.kb.se/resolve?urn=urn:nbn:se:su:diva-8301>

The Dean's Discourse



December – a hectic month

It's during December that everything has to get done – not just the Christmas shopping and preparations, but also all the decisions for the coming year. I'm writing this two days after the University Board's budget decisions and three days before the Faculty Board is to make decisions on the allocation of resources to the departments and institutes. Then it's hectic for the institutes in doing the planning with the allocated resources.

Unfortunately, I don't have any glad tidings to bring when it comes to resources for next year. Although we have been allocated some new resources for postgraduate studies, the costs in the university have increased a lot. Some of these costs are of course a consequence of salary increases that have only recently been negotiated, some are costs for

empty facilities while others are due to increases in central costs in conjunction with the takeover of teacher education. However, there is every reason to believe that these costs will diminish once the changeover is complete. We must simply all do our best to maintain the high quality of our activities.

The high quality of the research that our faculty conducts is confirmed by the good allocation of research funding from VR and other research financiers, which was announced last month - it's very rewarding and stimulating to be the dean of this very dynamic faculty. I would like to thank you for your faith and trust and look forward to yet another exciting three-year period as faculty dean.

In this context, I would like to extend my warm thanks to all who have participated in the work of the Faculty Board - both those who will remain on the board for the coming period and those who are leaving it. Among the latter, I would like to extend my particular thanks to Britt-Marie Sjöberg and Ragnar Elmgren, who have both made great contributions to the Faculty over a very long period of time. The same applies to the highest extent also to Jan Nedergaard, who is leaving the position of head of the Biology department and his post as a member of the Faculty

Board. Jan's contributions have been invaluable during the developments of recent years in both the department and the faculty. Thank you Jan!

At the end of January, the new Faculty Board will gather to discuss over a day and night the focuses and initiatives of the next three years and how we can meet our strategic goals. I know that we are faced with challenges that we must meet in order to continue to develop our activities towards even higher standards of quality. This includes increasing the recruitment of highly motivated students, the integration of and interaction with teacher education within the Faculty, increasing research collaborations and not least, increasing the efficiency of the Faculty's organisation.

Finally, I would like to wish you all a very Merry Christmas and Happy New Year and the relaxation and recuperation that you all deserve so well over the holiday break.

Stefan Nordlund, Dean
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News from the Faculty

Scientist Careers Day 2008

This year, the Scientist Careers Day was held at the Arrhenius Laboratory. There, over 400 science students were afforded the opportunity to come into contact with around 35 companies and organisations. The day began with a sandwich luncheon and presentations on postgraduate programmes, lectures on scientists at work, and what happens after you have graduated with your doctorate. During the day, the students were able to meet representatives of the companies and listen to company seminars and presentations. Science graduates now work at many of these companies, and the purpose of the day is for students to gather information about the work and career opportunities for scientists, to network and to gain insight into what they can expect after the conclusion of their studies.



New catalogue with Master's Programmes

The Faculty of Science has produced a new catalogue of the Faculty's Master's Programmes. The catalogue is in English, and can be distributed during visits to universities abroad. You can order the catalogue from yva.gyllenskold@science.su.se