2011

2011 Research at Andrews

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Hearing the Cosmic Violin

Sept 2011

Dear Friends of Andrews University:

Welcome to our second annual publication, Research and Creative Scholarship at Andrews University, Summer 2011. In the following pages, you will see highlights of a few of the ongoing research projects at Andrews University. These projects range from a quantitative analysis of the effectiveness of the Seventh-day Adventist primary and secondary education system to a search for gravitational ripples in the fabric of the universe. The multi-disciplinary nature of research is evidenced in the work of Jacques Douskan to promote greater Jewish-Christian understanding, and in the work of Øystein LaBianca to develop an integrated approach to the “little traditions” illuminated by ancient Middle Eastern archaeology.

The University is composed of inquisitive spirits and investigative minds. Therefore, a distinguishing attribute of Andrews University is the infusion of research and creative scholarship into its academic fabric. Research and creative scholarship permeate our academic life, inform our teaching and strengthen our emphasis on generous service. Research is always a collaborative endeavor. Faculty members participate in interdisciplinary collaborations, and students are mentored by their teachers in the intricacies of conducting research. Siegfried H. Horn (1908–1993), my teacher, colleague and friend, set a wonderful example of what it means to be an Andrews scholar. By pioneering an interdisciplinary approach to archaeology in the Middle East, Siegfried Horn transformed the field of biblical archaeology and influenced the careers of scores of his students who continue projects he started. In recognition of Siegfried Horn’s contribution to scholarship, we have established an Excellence in Research and Creative Scholarship Award in his name. More about Siegfried Horn’s career and the first recipients of the Excellence Award are presented on pages 13–15.

A recent report indicated that universities need to prepare students for careers that do not yet exist and to use technologies that have not yet been invented in order to solve problems that we are not yet aware of. At Andrews University, we believe one way to prepare students to meet this challenge is to equip them with the skills to conduct research. Students who have learned to solve problems by means of well-designed research processes will be equipped to face new challenges for the rest of their lives.

I hope you enjoy this second annual presentation of some of the ongoing research programs of our faculty and students.

Cordially,

Niel Erik Andreasen
President

The Search for Gravitational Waves

If a tree fell in the forest outside Livingston, La., and there was no one to hear it, the four-kilometer-long LIGO detectors would hear the sound it made. The L-shaped configuration of mirrors and lasers is trained to pick up gravitational waves, ripples in the fabric of space–time predicted by Einstein’s theory of relativity. These detectors are sensitive enough to pick up gravitational waves, but that also means they pick up any vibrations in the surrounding area. “We can tell when rush hour starts in the area because the detector output increases at a certain frequency,” says Tiffany Summerscales, associate professor of physics. She is a collaborator on the Laser Interferometer Gravitational Wave Observatory (LIGO) project, part of which is taking place in the physics laboratory at Andrews University.

According to Einstein’s theory of relativity, which treats space as if it were a flexible fabric, objects are attracted to the nearest dimple. The stars lose energy and move closer together exactly as predicted if they orbit each other. The stars lose energy and move closer together exactly as predicted if they were emitting that energy in the form of gravitational waves. However, gravitational waves have yet to be directly detected. After six “science runs” beginning in 2003 to calibrate and test the LIGO detectors, they were taken offline for updates and repairs in 2010. The upgraded detectors, with much greater sensitivity to detect gravitational waves, are expected to become operational in 2015.

The LIGO team’s mission is to first detect all these kinds of gravitational waves and then separate them from the noise signals produced from “tumbleweed collection or...”
someone dropping a brick,” says Summerscales. “It’s like throwing a stone through the window of a building, and the effect is felt on everything around.” People like it, he says, because they are accustomed to seeing things in the world, and they can predict the outcome of an action. When the LIGO detectors become operational in 2015, more than 500 researchers and LIGO researchers across the country will continue perfecting their computer programs in order to have them ready by the time the improved LIGO detectors are up and running.

Katy Desjardins

When the LIGO detectors become operational in 2015, more than 500 researchers in the United States and 200 in Europe will be looking for gravitational waves in hopes of proving that gravitational waves exist and gaining a better understanding of some of the strangest objects in the universe. “Some of the really massive things that are doing exciting things out in the universe, like black holes, are also some of the most mysterious,” says Summerscales.

The LIGO researchers hope to gain a new understanding of astronomy from the gravitational waves. “Previously, we learned about objects by the light they produced,” says Summerscales. “Now, things that don’t produce adequate amounts of light—black holes, for instance—we’ll send out gravitational waves that we can pick up and decipher.”

Jacques Doukhan has been the editor of Shabbat Shalom, a journal of Jewish-Christian reflection, for 16 years.

Pursuing Jewish-Christian Dialogue

Raised in the convergence of three cultures—Jewish, French and Muslim—Jacques Doukhan, professor of Hebrew and Old Testament Exegesis, has been a voice for Jewish-Christian dialogue for several decades. Two of his recent projects—Israel and the Church: Two Voices for the Same God (Hendrickson, 2002), and On the Way to Emmanuel: Searching the Messianic Prophecies (forthcoming), stem from his longstanding research interest at the intersection of Judaism and Adventism.

In On the Way to Emmanuel, Doukhan examines Scriptural Messianic prophecies from an Old Testament and historical perspective. He utilizes exegesis of the text, its immediate historical context, other Scriptural writings, and ancient Rabbinic texts to determine which Messianic texts were legitimate in their time rather than given a Messianic interpretation later in history.

Doukhan identifies himself as a Jewish Adventist and has an extensive scholarly background in Jewish and Biblical studies that has transferred into a lifelong involvement in Jewish-Christian dialogue. He was the editor of Shabbat Shalom, a journal of Jewish Christian reflection, for 16 years and served as the leader of Beit Itri Shalom, a local Hebrew-Adventist congregation, for 11 years.

“Since 1999,” he says, “I have served as the director of the Institute of Jewish-Christian Studies at Andrews University, an organization responsible for symposiums on the Holocaust, Jewish-Christian relations, and other interfaith dialogues. ‘We produce a book after each symposium, and our intent is to provide information and make Jewish Christian relations present in people’s minds,’ he says. Doukhan has attended Jewish-Christian conferences worldwide, and was involved in the first historical encounter between top Orthodox Jewish scholars and evangelical theologians at Emory University, Atlanta, Ga. This summer he was invited to Paris to join a discussion at a gathering of Jewish Christians from Catholic, Christian Orthodox and Protestant communities.

For Doukhan, Jewish-Christian dialogue is significant both in a historical context and to shape the future. “Christianity comes out of the womb of Judaism,” he says. “You would not be able to call yourself a Christian and ignore that fact.” Yet ignorance and hostility to Christianity’s Jewish origins has resulted in some of history’s most terrible crimes. Doukhan cites the example of the Holocaust: “Ignorance in these things can be very dangerous,” and failing to understand and sympathize can be fatal.

Understanding Christianity’s Jewish roots can enhance both faiths as well. “If you lose your roots, you lose your identity,” says Doukhan. “For a time, Christians lost the sense of the importance of the law, righteousness, Creation and the Sabbath. If you compare Jewish and Christian tradition, Christian tradition has, under the influence of Greek thought, emphasized spirituality as the highest good, with the result that the world—creation—is evil. Today, many Christians realize that and have come back to enjoy Creation as physically receiving the gift of God as well as stressing the importance of the spiritual life.”

Doukhan finds an appreciable overlap between the Jewish and Adventist faiths. “For me, Adventist thinking plays very well to Jewish sensitivities and thinking in several areas—the importance of Scripture, the Sabbath (of course), and the value of Creation, for examples.” He has written several recent articles on this topic, and is actively involved in recent faith and science dialogues on the Andrews campus. He reminds participants at these conferences of the ultimate importance of creation as an expression of the God they all believe in. “I am not a scientist, so I am not aware of many of those issues, but I do believe in the import and value of creation. But I think there is much more in the value and text of creation than this discussion of creation and evolution,” he says.

His fusion of two similar religious begins with apologetics, he says, but aims to transcend simply defending one’s position. “If, as a Jew, you choose to embrace Christianity you have to justify yourself. So your journey begins with apologetics, but I am suggesting there is more than apologetics,” he says. “We learn from each other, and hopefully we can end up discovering something that transcends both beliefs.” Apologetics sometimes carries a negative connotation, he says. We are afraid to defend our differences “because it has not been well done in the past. Sometimes, to defend a difference, we kill the different. It should not be that way—I defend my difference, but at the same time, I should be aware that there is something I could learn that may strengthen or enhance my belief, or discover something I never even thought of.”

Doukhan’s goal is reconciliation between the two faiths, which have a long history of hostility and mutual unawareness. “The dream of reconciliation, when grace and love come together, I believe would be a sign of the end...In a way, without knowing it, Seventh-day Adventist people are working toward reconciliation without necessarily knowing or wanting it. It happens that in [the Seventh-day Adventist] context, you have grace and law, Old and New Testaments together, and that promotes and allows reconciliation.”

He continues to devote his time to scholarly activities to biblical studies and the Jewish-Christian reconciliation. His many books on Israel and the Church, Ecclesiastes and biblical prophecy have been translated into more than seven languages. He regularly teaches seminars on Messianic prophecy, Rabbinic literature and Jewish-Christian relations as well as his extensive involvement in interfaith dialogues. Doukhan is also intensively active in the domain of biblical exegesis and interpretation. He is presently the general editor of the Seventh-day Adventist International Bible Commentary, a new project that involves more than 60 Adventist scholars worldwide.

Published in 2002, this book deals with the intersection of Judaism and Adventism.

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