The Spine
National Film Board of Canada (NFB)
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Autodesk® Maya®

Backbone of the Operation.

Academy Award®–winning animator and director Chris Landreth uses Autodesk® Maya® software to create his latest short animated film, *The Spine*.

The Spine. © National Film Board of Canada, 2008.

Summary
It was 2004 when Chris Landreth, an American animator working in Canada with the Canadian National Film Board (NFB), introduced the current generation to the tortured inner thoughts and creative genius of Ryan Larkin. Landreth's *Ryan* (2004) uses 3D to evoke Larkin's creative gifts and their loss to mental illness and substance abuse. Created with Autodesk® Maya® software, Landreth's tool of choice for 3D animation and modeling, *Ryan* was awarded the 2005 Academy Award® for Best Short Animated film.

Landreth's latest animated offering delves further into the human condition, to the sometimes tragic things we do for love. *The Spine* tells the story of Dan and Mary, two characters trapped in a debilitating marriage. Created over a two-year period, *The Spine* was produced by the NFB in association with Copperheart Animation and C.O.R.E. Digital Pictures, with the creative participation of Autodesk Canada Co., and the Seneca College School of Communication Arts. Autodesk Maya was used to help create the film's evocative and astonishing look.

The Challenge
Landreth came up with the initial concept for *The Spine* while enrolled in the scriptwriting program at Ryerson University in Toronto, Canada:

"I'd been keeping a journal for some time, and my thoughts kept drifting back to long-term relationships," says Landreth. "Some relationships I've witnessed simply baffled me in that they were so obviously toxic and unhealthy, and yet these people stayed together. The question kept coming back to me: do they stay together out of habit or fear, or is there some deeper, richer story behind their perverse loyalty to one another?"

The central visual metaphor in the film is Dan's literal lack of a spine. In attempting to relieve Mary's overwhelming grief at her inability to have a child, Dan literally surrenders his own spine in order to give his beloved wife someone "small, to hold and cradle and scold." As a result, Dan becomes a shriveled, amorphous figure unable to stand up.

"Dan was our first creative challenge," says Landreth. "He is a very complex character visually, with flaps of skin leaving his forehead open and vulnerable, and a shriveled, viscous upper body. We had to figure out how to create a character who literally melts over every article of furniture or other object with which he comes in contact. The scene where Dan reclaims his backbone is my favorite in the film, and it was also the most challenging. It was completed entirely using Maya."

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The Solution

In all, *The Spine* required two years and five distinct groups to bring it to completion.

"The first year was very much a development year," says Landreth. "We developed the script, storyboards, and animatics while building some character assets, but the biggest thing we did was bring together the group that would make this film. Autodesk graciously provided employees to work directly on the rigging, animation, rendering, and more, each of them taking a four-week leave to help out through the life of the project."

Also contributing that year were 15 animation students from the Seneca College School of Communication Arts. As part of the school's Summer Institute program, recent graduates of the animation program had the extraordinary opportunity to work with an Academy Award–winning director.

"One of the teachers, Sean Craig, is the animation supervisor on the film," says Landreth. "There were eight students using Maya to work on the characters, and another seven doing environment modeling, special effects and some character rigging along with the Autodesk team. Each character was worked on by one of the student animators at some point. Together, they did all of the animation over a four-month period."

From the outset, Landreth knew that Maya would be his tool of choice. The animator has been involved with the development of the software and has been using it on his films for 12 years. "We used Maya from start to finish on *The Spine*," he says. "From coming up with the creative vision to the modeling, texturing, rigging, and animation, Maya was our tool of choice. For me, there was never any question about which software to use."

The Results

Since Landreth first began working with Maya, the software has been through many changes and improvements, including Maya nCloth, which helps artists more quickly direct and control cloth and other material simulations.

"I particularly enjoyed exploring new creative paths with Maya nCloth," he says. "We also used nCloth extensively on *The Spine*, and for a lot more than clothing. We used it for breaking glass, dirt flying from a potted plant, as well as the bulk of the dynamics work. We also used subsurface scattering to create the iridescent quality of the characters' skin. We are looking forward to using the Maya nParticles feature for our next project."

For more information about Autodesk Maya software, visit **www.autodesk.com/maya**.

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—Chris Landreth
   Director and Writer
   The Spine

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