

I was able to settle in and really enjoy my fellowship year. With trust funds totaling some \$35 billion, and the facilities and faculty excellence this permits, Harvard is able to attract some really talented people from all over the world. This automatically guarantees positive feedback in terms of growing the university's academic profile, faculty positions being filled by leading researchers and an influential global alumni guaranteeing a diverse return-flow of benefits to Harvard.

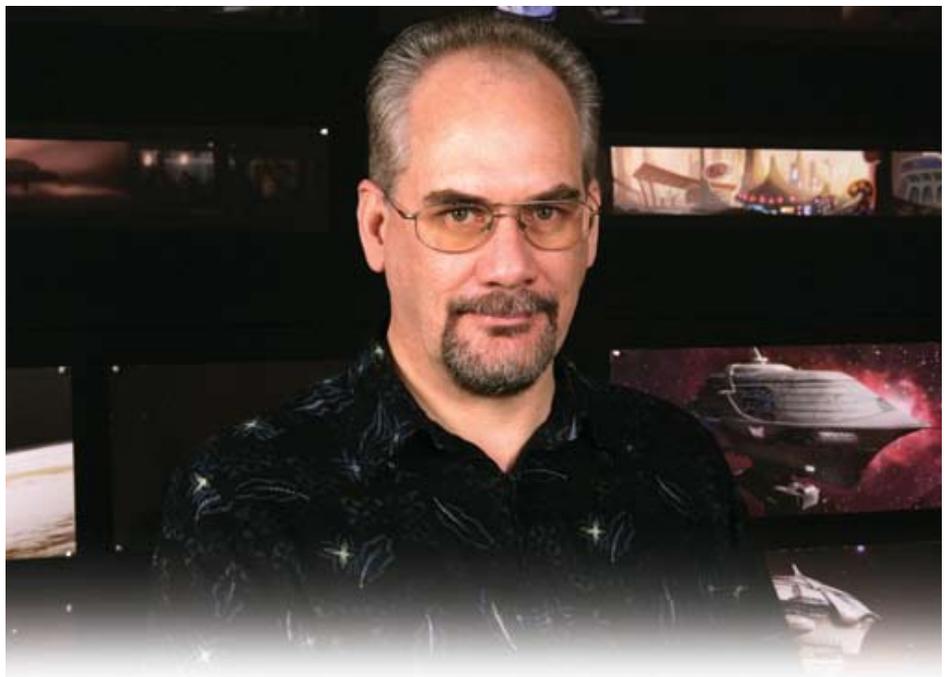
### Looking around

Cambridge and the greater area of Boston are typical of New England. The architecture and elegant red-brick and stone structures, designed and built by the Puritan Founding Fathers and their descendants, are unmistakably reminiscent of England – as is the city's well-wooded greenness. Differentiating itself from any other place I have seen is New England in the fall when the foliage changes colour, within a few weeks, to brilliant shades of yellow, copper and red. Catching a warm-blooded African by surprise, however, was the sudden onset of winter, when clocks are adjusted for daylight-saving, heavy snow falls occur and temperatures plummet. On days when the wind chill lowers the felt temperature to minus 25 °C, and the pavements are treacherous with snow and ice, there is only one place to be – indoors. In midwinter, nightfall sets in by 3:45 pm and misled by the darkness, on more than one occasion, I surprised my colleagues by setting off for home an hour or two early.

Spring has now arrived in bright green and blossomed brilliance, and outdoor Harvard graduation celebrations are in full swing. Within a few weeks I expect the campus to become quieter as the summer holidays begin. I plan to enjoy this relative peace and quiet and will use the time to add the finishing touches to our book, which is turning out to be something that the CSIR can be truly proud of.

Keep your eyes peeled for the August release of: Burns, M. and Weaver, A. (Eds) (2008). *Exploring sustainability science: A southern African perspective.* (Stellenbosch, SUN PRESS). Packed full of great contributions by some of CSIR's best researchers.

Keep well,  
Mike



## From tracking satellites to setting screens alight in Hollywood

A conversation with an ace digital effects artist who remains fond of the CSIR

**M**any talented people have worked at the CSIR over the years and many of them will remain fond of the organisation and grateful for its contribution to their careers. In some cases their personal dreams and ambitions have taken them to some rather unusual careers and places. **Sciendaba** tracked down one such person, Dr Ferdi Scheepers. Ferdi worked at the CSIR Satellite Applications Centre as technology manager, and later manager of the earth observation research group. Today he is a digital effects artist at Pixar, an award-winning computer animation studio and wholly-owned subsidiary of the Walt Disney Company. Its last movie, *Ratatouille*, scooped best animated movie at the Oscars. Ferdi responded to **Sciendaba's** questions posed by Alida Britz, on email from California.

**Q** You left the CSIR where you worked in satellite imagery, to work for Pixar? How does one move from satellite imagery to cartoons? That seems quite unlikely, I agree. But how about this: My Master's thesis at the University of Johannesburg was on map symbolism in computer-assisted map compilation and my PhD dissertation was on anatomy-based modelling of human figures. Along with my work in satellite imagery and now in creating animated feature films, the common thread seems to be the use of computers to create visual representations.

**Q** What exactly do you do at Pixar? I'm officially referred to as a Technical Director, although 'Digital Effects Artist' more aptly describes what I do. I rotate between doing production-related development and creating digital effects for our animated movies. As far as creating digital effects is concerned, I've contributed effects in *The Incredibles*, *Cars*, and now in *Wall•E*.

**Q** Tell us about your contribution to some of the well-known animations. For *The Incredibles*, I developed a fracture modelling system that was used to model the shards from broken windows and busted walls. My first effects work was the water sprinkler system that drenches Bob/Mr Incredible after his secret message self-destructs. I did all the muzzle flashes in the movie, some escaping steam as well as bullet hits.

• Continued overleaf

## From tracking satellites to setting screens alight in Hollywood

As corny as it may sound, some brilliant advice from Jiminy Cricket, from Walt Disney's 1940 animated film, Pinocchio:

*"If your heart is in your dream / no request is too extreme / When you wish upon a star / your dreams come true"*

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In *Cars*, I did all the effects related to the wrecked road in Radiator Springs, including the seven shots in which McQueen wrecks the road by dragging a statue over the asphalt surface of the main road. I'm currently working on *Wall•E*, Disney/Pixar's next movie. In this movie, I worked on developing a new volume shading system called Atmos, which is used to render volumetric effects such as clouds, dust, rocket trails, fire, smoke and explosions.

### Q Do you keep track of what happens at the CSIR?

A I often visit the CSIR's web site to see what's going on. I must say, if we don't actively seek out news about South Africa, we don't hear much at all. Most Americans remain terribly uninformed about what's going on in South Africa and Africa.

### Q What memories do you have of the CSIR?

A I'll always remember the CSIR fondly for its contribution to my professional formation and for what I'm able to offer Pixar today. I remember the CSIR's financial support to study towards a PhD in Computer Graphics in the USA. I remember returning to a transformed CSIR and deciding that the organisation's Satellite Applications Centre was the place to be. And I remember opportunities to expand my leadership, management, and presentation skills at a facility with an international reputation for exceptional work, dedicated personnel, and a fantastic working environment.

### Q What do you miss about South Africa?

A Although my wife, Ronel, and three sons – Dewald, Conrad and Nicolas are all here with me, we miss our extended family. Of course, we miss our friends, too. We miss Afrikaans, even though we speak Afrikaans at home. It's hard to explain. We miss South African humour. And food. And sports. Gridiron football is boring when compared to rugby. Fortunately, we've found a television channel with some rugby coverage. We also miss the cricket. We make our own biltong and I can buy Castle Lager at a local beverage store. In California, we have ample sunshine and world-class nature and vacation destinations, otherwise we would have missed those too.

### Q Do you have a message for those who may remember you, and for CSIR staff in general?

A I'm very fortunate to be doing what I love doing and to get paid for doing it! My advice to you: Find your passion in life. Dream. Then do.

If you know of other ex-CSIR staffers who have moved on to unusual careers or places, consider sharing the story with **Sciendaba**. Contact the editor, **Lehlohonolo Mokhema**, Email: [tmokhema@csir.co.za](mailto:tmokhema@csir.co.za), X3716 (Pretoria).

## Why using open document format as a standard is best

By Lee Manickum and Thomas Fogwill of the Meraka Institute of the CSIR, in celebration of World Telecommunication and Information Society Day, 17 May 2008.

One is often told by an IT techie (or someone from another organisation) that "your software is incompatible with ours." This is accompanied by phrases such as "you must use this web browser" or "we only accept Word/WordPerfect/PDF documents." The reason for this is largely the lack of standardisation in the world of software formats.

