

The Lennart Nilsson *Award*

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This article takes a brief look at the photography of Lennart Nilsson as well as the history of, and the formation of a foundation to raise monies for the establishment of an award in his name. Subsequently, a board and an international nominating committee evolved to select individuals to receive the award. Honorees are chosen based on the merits of their efforts in scientific imagery that, like the photography of Nilsson, reveal the unseen in the natural world. Finally, this article discusses the work of the latest two recipients of the award and invites readers to participate in the nomination process.

Many of us are familiar with the photography of Lennart Nilsson — photography characterized by a combination of beauty, science and innovation. It reveals places that are challenging to work in. I would also guess that most people were originally exposed to some of his early work, which was featured in *LIFE* magazine chronicling the development of a human embryo. Nilsson, 79, gained much notoriety from this photo essay, entitled “Drama of Life Before Birth,” which included extraordinary photographs of a human fetus in-utero in the late 60’s. As a grammar school student, I can vividly remember that issue of *LIFE* and how many times I looked at those pictures. Later, in 1980, as a neophyte in the field of biomedical photography, I fantasized about my own future in this field and the subjects I might photograph. It never dawned on me then, that sometime in the future I would work with Dr. Lennart Nilsson. I would like to share a brief history of the prestigious Lennart Nilsson Award (LNA) from my experiences as the chair of the nominating committee. The article will also showcase the work of the two most recent recipients, Mr. James Henderson, and Dr. David Malin.

History

In January of 1997, the Federation of Technical and Medical Photographers (FTMF) of Sweden bestowed its lifetime achievement award for meritorious contributions to the fields of photography and science upon Lennart Nilsson. At that time, Staffan Larsson had the idea to also create an ongoing award that would recognize the work of Lennart. The FTMF supported Larsson’s efforts to develop the ambitious plan. The concept was for the LNA to be presented annually and bestowed upon an individual whose imagery revealed the “not before seen” in a fashion similar to that of the world-renowned scientific photographer for whom the award was named.

In January 1998, the Lennart Nilsson Award Foundation was formally created by several strong supporters of the world-famous Swedish photographer. A board was organized with the sole goal of raising monies for an endowed fund, which was to be used to support the prize. The award was to be presented at the prestigious Berwald Hall in Stockholm at the ceremony during which the Ph.D. candidates receive their degrees. The goal was to raise a sum of money that would generate an annual amount of 100,000SK (\$12,000 US) that would be used to recognize the achievements of individuals whose work interfaced the world of imaging and science.

The foundation was comprised of Ingvar Carlsson, the former prime minister; Bo Erikson, a Swedish television producer; Sam Nilsson, a Director General of Swedish television; Sven Nykvist, a Swedish cinematographer; Staffan Larsson, Director of Medical Media, Huddinge University Hospital; Jan-Erik Wikström, former cabinet minister; Agneta Lundström, Director of the National Maritime Museum; Per Sköld, former Marshal of the Realm; Marcus Storch, past president and CEO of AGA; and Dr. Hans Wigzell, President of the Karolinska Institute. This initial group raised the seed money

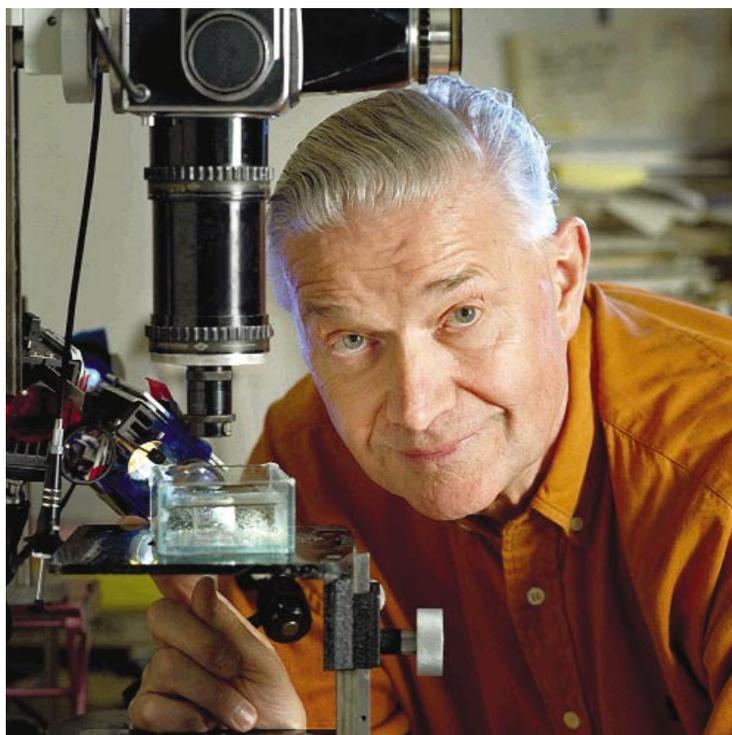
for the endowment to establish the award and organized the Lennart Nilsson Board*. This group of dedicated individuals was charged with overseeing the activities of the LNA. In June of 1998, the Board developed methods that would be used to select an individual who was worthy of the LNA ideals.

In October of that year, Dr. Nils Åslund was selected by the Board to receive the first prize. Dr. Åslund, an emeritus professor of physics at the Royal Institute of Technology in Stockholm, was chosen in recognition of his pioneering work investigating 3-D confocal microscopy. Lennart Nilsson had used various aspects of these techniques in some of his recent investigations at the cellular level.

The Nominating Committee

Following the first cycle of activities of the LNA Foundation, the Board determined that a nominating committee would be a valuable resource for promoting the Award. Their goal was to create an international committee that would conduct a world-wide search to identify individuals whose work was truly unique. These images would ideally demonstrate a tenacity to work through problems and produce striking pictures that made the invisible world "visible". This committee would be comprised of a Chair and approximately twelve to fourteen members, each serving three- or four-year terms. The new committee would be charged to:

* The LNA Board was comprised of the following people: Hans Wigzell, chairman; Lennart Nilsson, honorary member; Staffan Larsson, secretary; Catharina Nilsson; Jakob Forsell; Axel M. Murray; Bo G. Erikson; Bo Zetterberg.



Portrait of Lennart Nilsson in his studio with some equipment used to photograph in water chambers. Portrait by Jakob Forsell ©1998.

- Disseminate information and raise awareness of the Lennart Nilsson Award on a worldwide scale.
- Forward to the Board, not later than August 15th each year, the names of a maximum of four candidates who create images in the Sciences. In line with the goal of the LNA Foundation, the candidate's work should emulate the spirit of the photography of Lennart Nilsson and reveal science and beauty to the world in unique and powerful ways. Candidates must use some form of photographic representation as the explanatory medium. Users of animation technology, a process which can serve to impart verisimilitude and movement to scientific material, would also be eligible for nomination. Prior publication is not a requirement.
- Actively seek and compile facts and materials relating to possible award candidates, verifying accuracy with experts in the fields concerned. The material should include the candidate's curricu-

lum vitae and ten representative images provided either as 35mm color photographic slides or 4 inch × 5 inch (10 cm × 13cm) × 72 dpi digital files or videotape samples. Each member would be encouraged to nominate a minimum of two image makers from the broadest communities in the sciences each year for consideration.

- Treat the facts and material relating to the nominees professionally and confidentially.
- Act as evaluators of the imagery and forward as a group no more than four nominees to the

Chair of the Nominating Committee by August 10th of each year. Evaluation would be based on the visual representation of the beauty found in the natural world; the impact of the image in a society outside of the community from which it was created; the aesthetics of the imagery; the content of the image and what it reveals about its subject and function; the demonstrated excellence in the craftsmanship of the imagery; the fact that the imagery results in "excitement" after viewing; the complexity of the methods required to make the image; and other relevant subjective tools.

In June 1998, I was invited to chair the nominating committee, a committee at the time without members or procedures. My charge was to organize such a group and to nominate possible candidates within the next twelve-month cycle. The Nominating Committee evolved over the next two to three months to include various individ-

uals from all around the globe. These individuals were suggested by the Board and as a result of my own experiences in the field. It was my goal in organizing the committee to include individuals from various backgrounds who represent diverse disciplines in the sciences.

Composition of the Nominating Committee

The Committee shall have an international composition and be comprised of up to fifteen members, including the Chairman.

- All Committee members shall be active in the field of imaging in the sciences.
- Each Committee member shall have a broad international network of contacts and possess a sound knowledge of the scientific uses of visual imagery.
- New members shall be appointed by the Chair of the nominating committee consistent with the goals of the Foundation and Board. The members' term of office will be four years (except for the Chair). Members may opt for re-appointment for one additional term only. Appointments should overlap, so that two members are added each year. Members who resign during their term of office shall be replaced as soon as possible, their successors being appointed by the Board and/or Committee in consultation with one another.
- Members who fail to perform their duties on the Committee shall be replaced, this action being decided upon by the Chairman in consultation with the Board.
- It shall also be possible to add additional members to the Committee as necessary.

The Current LNA Nominating Committee

Michael Peres, Chair
Chairman of the Biomedical
Photographic Communications
Program
Rochester Institute of Technology
Rochester, New York

Dr. Nils Åslund
Emeritus Professor
Royal Institute of Technology
Stockholm, Sweden

Wolfgang Bengel, D.D.S.
Bensheim, Germany

Cees Hersbach
Director, Digital Imaging
Anatomical & Embryological Lab
of the Academic Medical Center,
University of Amsterdam,
Amsterdam, The Netherlands

Barbara Baker Burrows
Photography Editor
LIFE magazine
New York, New York

Alan Larson
Head of the Dept. of Medical
Photography
The Medical Centre
Orebro, Sweden

Norman Barker
Assistant Director of Photography
Pathology and Art as Applied
to Medicine,
Johns Hopkins University
School of Medicine
Baltimore, Maryland

Julie Murray
Director, Medici-Graphics
St. Vincent's Hospital
Sydney, Australia

Jamie Hayden
President, Bio-Graphics
Philadelphia, Pennsylvania

Sten Grillner
Professor and Neurophysiologist
Karolinska Institute
Stockholm, Sweden

Ken Sinclair
Biological Photographer
Lethbridge, Alberta
Canada

Larry Merin
Director, Ophthalmic Photography
Vanderbilt University
Memphis, Tennessee

1999 Winner — James Henderson, R.B.P.

This international nominating committee recommended the second recipient of the 1999 Lennart Nilsson Award to be Mr. James Henderson, R.B.P. of Portland, Oregon. James Henderson was chosen for his work photographing ancient Indian pictographs — colored symbols on rock surfaces — and inventing the Henderson cross-polarized light method. The Henderson Cross-Polarized Enhancement Procedure has been extensively used for archeological field photography to reveal significantly faded pigments. As owner of Applied Photographic Research, Henderson works as an independent consultant for technical and scientific imaging. He is a graduate of Rochester Institute of Technology, is a Registered Biological Photographer (R.B.P.), and past member of the Biocommunications Association (formerly the Biological Photographic Association). Rather than try to summarize Jim's work, here are some revised excerpts from his original work, published in a 1995 issue of *Rock Art Research*.

“Archaeological field photography has historically been unable to effectively record and enhance many of the subtleties of faded pigments in pictographs (Stuart, 1978), which are colored symbols applied to rock surfaces. However, during the last two decades, researchers have gained a clearer understanding about the physical nature of rock patination, pigment degradation, and film response to low saturated subjects (Wainwright, 1990). One



Oregon Trail Emigrant
Inscriptions photographed
using Kodak Technical Pan
and the Henderson Cross-
Polarized Enhancement
Procedure.

©James Henderson 1997

The improved pigment detail resulting from elimination of all surface reflections is very obvious in the enhanced slide compared with enlargement of the same area of the unenhanced slide, where surface reflections obscure the pigment inside the silica skin.

“Both black and white and color photographs are quite successful using the Cross-Polarized Enhancement Procedure. Because the

backscattered pigment reflections are improved by eliminating all primary surface reflections, the photographic process completes the procedure by expanding the contrast and saturation of those pigment reflections. This multi-step procedure is particularly effective in revealing pigment data that would not be possible using conventional techniques. Severely weathered panels can now be studied; the effects of scratching by vandals over the silica skin surface can be eliminated in the photograph; and photomicrography of small portions of the film can be analyzed to reveal further details about composition and construction.

“Digital enhancement of film recorded using the Cross-Polarized Enhancement Procedure completes the process. But most importantly, the prospect of recording historically significant cultural resources promises to have a major effect on the age-old quest to document and preserve endangered artifacts before vandals and natural processes obliterate them forever from our cultural milieu.”

significant discovery has been that silica compounds can be deposited up to thicknesses of one millimeter and are responsible not only for the preservation but also the diminishment of pigment saturation over geological time (Walston and Dolanski, 1976). As the silica skin slowly thickens, the visibility of the underlying pigment lessens. When opaque, mineral accretions are subsequently deposited on top of the silica skin, it becomes difficult to observe the underlying pigments at all, and if the reflective coloration of the rock face is similar to that of the pigment, it is difficult to separate one from the other.

“The Henderson Cross-Polarized Enhancement Procedure produces a number of significant improvements over traditional, pictorial photographic techniques. First, the procedure captures substantially more information on both black-and-white and color films. Comparative photographic images of severely faded panels clearly demonstrate the success of the procedure. Two color slides were placed under a microscope and photographed.

2000 Winner —

David Malin, D.Sc. (honoris causa)

The 2000 winner of the LNA was Dr. David Malin from Sydney, Australia. In addition to his beautiful photographs, Dr Malin’s work was selected as a result of his creation of “Malinisation”, a method of hypersensitizing of films. Malin is based in the Epping (Sydney) offices of the Anglo-Australian Observatory, but his job regularly takes him to Siding Spring Mountain in outback New South Wales to use the Anglo-Australian Telescope or to support visiting astronomers. His chemistry background has proven useful in several aspects of photography, especially in the hypersensitizing processes which provide enormous gains in speed to the photographic materials used on the telescope.

In his Sydney laboratory he has invented new ways of extracting information from astronomical photographs, a specialty which has given him an international reputation. These novel image enhancement techniques have led to the discovery of two new types of galaxies, which bear his name. Malin-Carter “shell” galaxies have extremely faint but large-scale features associated with otherwise normal galaxies. In 1987 he discovered an extremely faint, uniquely massive “proto-galaxy” which has since been named Malin-1. These are some of the faintest objects ever detected by a ground-based telescope and are the result of a photographic process that has been dubbed “Malinisation”. Their discovery represented a significant advance in photographic astronomy, and is considered a major contribution to research on galaxies.

Several photographic techniques that are used in the research activities, especially unsharp masking, came together in a method for making astronomical color photographs from plates taken in three separate colors. These are generally acknowledged to be among the finest ever produced and have been widely published on the covers of hundreds of

books and magazines, including *LIFE* and *National Geographic* and as a series of Australian postage stamps. They have also been widely exhibited in international solo exhibitions in Australia, Britain, China, France, Italy, India and the USA.

David Malin has published over 120 scientific papers and almost as many popular articles on astronomy and photography since joining the AAO as well as seven books, including the prize-winning *View of the Universe* (Cambridge University Press, 1993). He is also a well-known and entertaining lecturer on these topics. His latest book, *The Invisible Universe* (Bulfinch Press/Little, Brown and Company, 1999) is a large format celebration of the beauty of the night sky. He has also worked with Australian composer Martin Wesley-Smith on audiovisual productions which combine astronomical images with modern music.

Conclusion

The last two years have been very challenging. As an organization, the LNA committee has had a number of successes and setbacks that required critical analysis of its goals and methods. Now entering the third nominating cycle, I feel the committee has developed sound

and reliable practices. As an international group that principally uses the Internet, we have only met virtually. This has created many subtle, but interesting difficulties. As a consequence, there have been several changes in our early directions to resolve this. Like any new process, we have been receptive to changes that will improve our results.

In closing, I would like to publicly thank two initial members of the committee, Ms. Gigi Williams and Mr. Simon Brown. We are in a much better position because of their insights and suggestions. I would also ask that if you, the reader, are aware of individuals who make images that fit the criteria discussed in the article, and who you believe should be nominated, ask them to send their curriculum vitae and a portfolio of representative imagery to the following address:

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Rochester, New York 14623
mrppph@rit.edu or (716)475-2775

For more information please
feel free to visit the Lennart
Nilsson Award web site at <[http://
www.rit.edu/~mrppph/index2.html](http://www.rit.edu/~mrppph/index2.html)>.

Reference

Henderson, J., An Improved Procedure for the Photographic Enhancement of Rock Paintings, *Rock Art Research*, November 1995, pp. 75-85.

Michael Peres, M.S., R.B.P, F.B.P.A., is the Chairman of Biomedical Photographic Communications at the Rochester Institute of Technology, a position he has held for thirteen years. He is also a Professor in the School of Photographic Arts and Sciences where he specializes in photography with microscopes and macro cameras. He has authored numerous publications, presented more than 100 oral papers and conducted more than thirty workshops around the world on topics including imaging through the microscope and the making of Quick Time Virtual Reality movies. Peres has been a member of the BioCommunications Association for twenty-three years. He is currently serving as the Chair of the Lennart Nilsson Award Nominating Committee as well as a coordinator of the RIT Big Shot project.