Because medical knowledge should be free
**Introduction**

This is the second annual report since Cardionetworks was founded in May 2007. 2008 was a good year for the foundation. The number of visits to our websites increases. More than 120,000 absolute unique visits were logged resulting in 1.2 million page views in 2008. The average time on the website per visitor was more than 5 minutes.

A large part of the visitor increase was caused by the English translation of ECGpedia that went online in August 2007. This site receives visits from throughout the world with increasing numbers coming from 3rd world countries. This meets our goal to make medical knowledge available to physicians with limited resources.

The incorporation of high quality vectorised SVG images had begun. Full quality Powerpoint educational presentations became available.

Importantly, we are proud to present the online "De Voogt Archive", consisting of more than 2000 ECGs made available by Willem de Voogt, MD, PhD. These ECGs will be embedded in case reports and explanatory text will be put online. This project will run over several years.

Our future plans are aimed at increasing the quality of the current websites. ECGpedia will be expanded, while the sites PCIpedia and Echopedia will be developed. Finally, Thrombopedia and HIVpedia were put online, as the Department of Internal Medicine of the Academic Medical Center Amsterdam has shown initiatives to maintain these sites.

The fundraising campaign of 2007 was successful. Therefore, the continuity of Cardionetworks, and most importantly the server costs, are warranted for at least another two years. However, more funds are needed in 2009. These funds will be used to attract more authors, and to increase the quality of illustrations. Also, the 7+2 step scheme which is already available on the website will be published in pocketsize reference cards. Lastly, Krystien Lieve was employed as an online secretary.

On the technical side, in mid-2008, all of the websites were moved to one stable, larger and dedicated server.

All of this was not possible without the tremendous efforts of the many volunteers that have helped in the process. The foundation board is very grateful for all the work that has been done to make this project a great success.

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**Mission Statement**

“to improve medical knowledge, especially in the field of cardiology, and to provide access to this knowledge by facilitating publications in digital or other form, including building and maintaining websites.”

Cardionetworks is a non-profit foundation and all revenues are spend to serve the above cause.

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Jonas de Jong, MD  
Ivo van der Bilt, MD  
Martijn Meuwissen, MD, PhD
Visitor Statistics

As the figures below show, visits to Cardionetworks' websites show an increasing visitor trend (statistics by Google Analytics). Figures show the traffic on the Dutch and English ECGpedia sites. Visits to other Cardionetworks websites is still below 20 per day, which is as expected as they are still in their developmental stage. However, these websites also have increasing visits, and editors are active on these sites.

**Visitors to nl.ECGpedia.org**

**Visitors to en.ECGpedia.org**

Live ECG Courses

Local general practitioners around the AMC hospital in Amsterdam approached the Foundation Board to organize a 'live' ECG course. Courses for general practitioners, medical students, internal medicine residents and coronary care nurses were organised since. Presentations of these courses are available in both PDF and the original PPT format through the ECGpedia website and have been a popular items for both teachers and students.
The geographical distribution of the visitors has shown a noteworthy trend since the English ECGpedia went live. Although most visitors continue to come from the United States and other native English speaking countries, Indian, Chinese and Russian visitors visit our sites more and more often as shown on the next page.

**Historical Timeline**

**December 2008**
Over 1,500,000 pageviews on ECGpedia with visitors from 166 countries.

**August 2008**
Third server upgrade due to high traffic. The current dedicated server has 250gb of disk space. Martijn Meuwissen, MD, PhD, cardiologist, joined the board of the Cardionetworks Foundation.

**April 2008**
1,000,000th pageview on ECGpedia. More than 250,000 visits to ECGpedia since start. On peak days >1000 unique visitors. Visitors from 126 countries have visited ECGpedia, with increasing visits from developing countries.

**April 2008**
Second server upgrade due to high traffic. Began De Voogt Archive: online ECG archive with more than 2000 ECGs.

**March 2008**
Successful fundraising campaign. Premium level donations from Novartis, St. Jude Medical, Philips Medical and Boston Scientific.

**November 2007**
Cumulative 120,000 visits to Dutch ECG site. People from 105 countries have visited en.ecgpedia.org.

**September 2007**
First prize for ‘young talent’ at Dutch e-learning symposium.

**September 2007**
First server upgrade due to high traffic.

**August 2007**

**July 2007**
In total 90,000 visits to the Dutch site and 4500 to the English site. Google has 673 search-hits on ‘ECGpedia’. Visitors from 21 countries have visited en.ecgpedia.org.

**May 2007**

**May 2007**
Founded the Cardionetworks Foundation.

**March 2006**
Launched nl.ecgpedia.org.

**February 2006**
Launched ECGpedia.nl.

**April 2005**
First online Dutch ECG course at www.drj.nl.
Website Development

The focus of 2009 will be to further develop the existing websites instead of exploring new websites. PCIpedia.org and ECHOpedia.org will be developed further. For PCIpedia and Echopedia more authors will be found in 2009. Additionally, quality control will be put into effect on all the sites by implementing a structure of authors and supervisors. The authors create the text, the supervisors (mostly experts in the field) will check the content.

Two new websites: Thrombopedia.org and HIVpedia.org will be maintained by the department of Internal Medicine of the Academic Medical Center. Furthermore, EPpedia.org was launched in order to host the pacemaker and ICD cases that are part of the De Voogt Archive.

Challenges for 2009 are to attract not only visitors, but also authors and editors. Most authors are busy doctors. Growing awareness and use of the Cardionetworks websites will increase the appeal for authors to contribute.

Website Impact

Results from a survey by TNO (Netherlands Organisation for Applied Scientific Research) conducted in late 2008 indicated that the largest impact of ECGpedia is that users are more capable of solving professional problems (28.4%) and the quality of the service they provide as a result has improved (27.3%).

![Survey Results Chart]

1. I am more capable of solving professional problems
2. The quality of service I provide has improved
3. The efficiency of the service I provide has improved
   I apply new approaches to my work
4. I save time
Benefactors of the Foundation

Premium donors to the Cardionetworks foundation are:

Boston Scientific

St. Jude Medical

PHILIPS
sense and simplicity

Novartis

Donate to Cardionetworks

If you would like to make a contribution to Cardionetworks, please contact vanderbilt@cardionetworks.org
Scientific Advisory Board

The Scientific Advisory Board of Cardionetworks consists of outstanding cardiologists that are renowned for their teaching skills and can serve as rolemodels to those learning. Current members of the Advisory Board are:

Arthur A.M. Wilde, MD, PhD
Professor of Cardiology and
Head of the Department of Cardiology,
Academic Medical Center,
Amsterdam, The Netherlands

Renée B.A. van den Brink, MD, PhD
Associate Professor of Cardiology,
Dean of Cardiology,
Academic Medical Center,
Amsterdam, The Netherlands

Adriaan A. Voors, MD, PhD
Associate Professor of Cardiology,
University Medical Center Groningen,
The Netherlands

Maarten-Jan Cramer, MD, PhD
Associate Professor of Cardiology,
University Medical Center Utrecht,
The Netherlands
Foundation Websites

These websites are in different stages of development:

www.cardiacintervention.org
www.cardiacultrasound.org
www.cardiokennis.nl
www.cardioknowledge.org
www.cardiolinks.org
www.cardiomedia.org
www.cardioweblinks.org
www.cardiomedia.org
www.cardiovasculargenetics.org
www.cardiovasesurgery.org

www.casesincardiology.org
www.cmrpedia.org
www.congenitalcardiology.org
www.crmpedia.org
www.ecgpedia.nl
www.ecgpedia.org
www.echopedia.com
www.echopedia.org
www.epi.pedia.org
www.failingheart.org

www.failinghearts.org
www.heartfailurepedia.org
www.medicalslides.org
www.medslides.org
www.mripedia.org
www.pcipedia.org
www.textbookofcardiology.com
www.textbookofcardiology.org
www.thefailingheart.org

The De Voogt Archive

Willem de Voogt, MD, PhD, is a cardiologist at the St. Lukas Andreas Hospital in Amsterdam, The Netherlands. He is renowned for his detailed knowledge of the electrocardiogram. Since the beginning of his training as a cardiologist he has been consulted to help with the interpretation of difficult ECGs. Throughout the years he has gathered thousands of interesting ECGs, some of them with abnormalities that are seldom ‘caught’. We are very grateful that he is willing to share his ECG collection with the public through the ECGpedia website. Since it was launched, The De Voogt Archive has been a popular destination for visitors. In order to expand the didactic quality of the archive, we will try to provide an explanatory text with each ECG. Dr. De Voogt has expressed his willingness to lead this enormous effort.

Rhythm Puzzles by Arthur Wilde

Arthur Wilde, MD, PhD, is renowned for his publications on inherited arrhythmias. As a specialist in his field he receives many inquiries about abnormal ECGs. Some of these ECGs have been published as Rhythm Puzzles in the Netherlands Heart Journal. As a member of the editorial board he was so kind to convince the publisher Bohn Stafleu van Loghum to allow us to publish these Rhythm Puzzles on ECGpedia. The 40 puzzles that are currently online have attracted thousands of visitors. As they are quite challenging, they are especially attractive to the more experienced ECG interpreter.
**Volunteers and Contributors**

**Merijn Reuland**
Merijn Reuland is a medical student at the University of Amsterdam, The Netherlands. He is an Apple expert and is skilled in processing graphics. In 2008, Merijn volunteered to help putting the De Voogt archive online. He wrote a script that was able to automatically add a ‘courtesy of’ message and ECGpedia logo. Furthermore, he made sure that the original descriptions of the more than 2000 ECGs in the archive were secured. Through his efforts, he saved us a tremendous amount of time as we didn’t have to process the ECGs one by one.

**Bart Duineveld**
Bart Duineveld is a medical student at the University of Amsterdam, The Netherlands. He is a skilled Adobe Flash programmer. With this software, he was able to produce two beautiful animations that are very helpful in explaining two basic concepts of electrocardiography: depolarization during normal sinus rhythm and the electrical heart axis. These concepts are a challenging concept to many students, but with the animations that Bart made it is much easier to understand them.

**Rob Kreuger**
Rob Kreuger is a medical illustrator at the University of Amsterdam, The Netherlands. Rob Kreuger was one of the first people involved in ECGpedia. In his spare time, he drew some of the detailed illustrations of the heart. He has also made illustrations to explain concepts such as left and right atrial dilatation.

**List of Volunteers**

- Willem G. de Voogt, MD, PhD
  Cardiologist, St Lucas Andreas Hospital, Amsterdam, The Netherlands
- Arthur A.M. Wilde, MD, PhD
  Cardiologist, Academic Medical Center (AMC), The Netherlands
- Renée van den Brink, MD PhD
  Cardiologist, AMC, The Netherlands
- Rudolph W. Koster, MD PhD
  Cardiologist, AMC, The Netherlands
- Kees-Jan Royaards, MD
  Cardiology Resident, OLVG, Amsterdam, The Netherlands
- Lucas R.C. Dekker, MD PhD
  Cardiologist, Catharina Hospital, Eindhoven, The Netherlands
- Pieter G. Postema, MD
  Cardiology Resident, AMC, The Netherlands
- Rob Kreuger
  Illustrator, AMC, The Netherlands
- Merijn Reuland
  Medical student, AMC, The Netherlands
- Bart Duineveld
  Medical Student, AMC, The Netherlands
- Tymen T. Keller, MD, PhD
  Cardiology Resident, AMC, The Netherlands
- Abdelghani Bouhiouf
  Medical Student, AMC, The Netherlands
- Sabriena Henderson
  Medical Student, AMC, The Netherlands
- Amon Heijne
  Medical Student, UMCN, Nijmegen, The Netherlands
Foundation Board

Jonas de Jong, MD, Chair. Cardiology resident. Academic Medical Center, University of Amsterdam, The Netherlands.

Ivo van der Bilt, MD, Secretary. Cardiology resident. Academic Medical Center, University of Amsterdam, The Netherlands.

Martijn Meuwissen, MD, PhD, Treasurer. Cardiologist. Academic Medical Center, University of Amsterdam, The Netherlands.
### Financial Statement

#### Balance sheet 2008

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#### Revenues and expenses 2008

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Contact

The Cardionetworks Foundation
http://www.cardionetworks.org
info@cardionetworks.org
VAT number NL8179.99.474B01
ING Bank account IBAN NL55PSTB0002382426
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KVK 34274298

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