Trisomy 21 Research Society

2016 Annual report

Contents

General information

The Trisomy 21 Research Society (T21RS) is the first non-profit scientific organization of researchers studying Down syndrome, founded to promote basic and applied research on Down syndrome, stimulate translational research and apply new scientific knowledge to develop improved treatments and cures.

Aims

- Facilitate the permanent interaction between researchers studying Down syndrome by means of our website, scientific meetings, publications in journals and the two-yearly T21RS International Conference. The society has organized a 1st International Conference in Paris, 4-8 June 2015.
- Establish common protocols both for basic research (mice studies, stem cells studies) and translational research (for clinical trials with biomarkers, cognitive paradigms etc.)
- Support education and training of young researchers in all stages of their careers, including undergraduates, graduates and postdoctoral fellows that are interested in Down syndrome, by providing training programs and grants to young scientists
- Stimulate research on Down syndrome
- Explain (recent) findings in Down syndrome studies to the general public and to inform legislators and other policymakers about new scientific knowledge and recent developments and their implications for public policy and society
- Promote the interaction between scientists and patient associations, foundations and pharmaceutical industries

The society was created in April 2014 and statutes were registered on 17th April 2014 in Groningen, The Netherlands, under the auspices of Mr. Albert Kraster, civil-law notary practicing in Groningen and member of The Royal Dutch Association of Civil-law Notaries. The society is a non-profit organization for the stimulation of scientific research on Down syndrome, operating under Dutch law. The original deed in Dutch and the English translation can be downloaded from the society website, www.t21rs.org.

Executive board

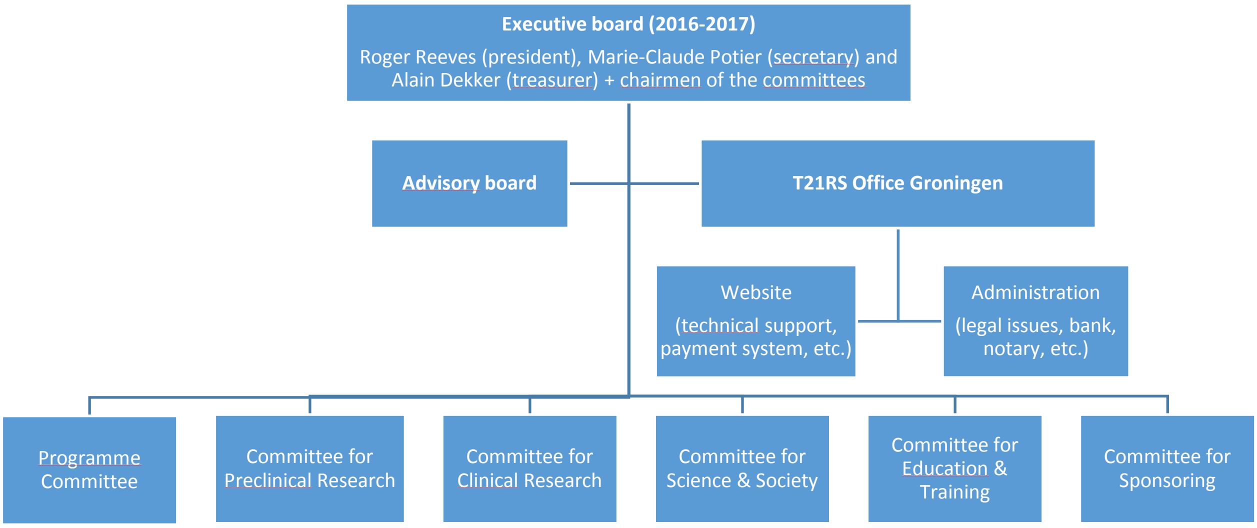
The executive board is formed by the president, secretary and treasurer of T21RS, as well as by the chairs of the committees:

President:
Roger H. Reeves (Johns Hopkins University, Baltimore, USA)
Secretary:
Marie-Claude Potier (Brain and Spine Institute, Paris, France)
Treasurer:
Alain Dekker (University of Groningen, Groningen, The Netherlands)

Committee chairs:

Program Committee:	Mara Dierssen
Committee for Science & Society:	Peter Paul De Deyn
Committee for Sponsoring:	Jean Delabar
Committee for Fellowships, Education and Training:	Renata Bartesaghi
Committee for Pre-clinical Research:	Yann Herault
Committee for Clinical Research:	André Strydom

Administrative structure T21RS



I – Program committee

2nd T21RS International Conference Chicago, 7-11 June 2017

Committee chair:
Mara Dierssen (Spain)

Committeee members:
Anita Bhattacharyya (USA), Cynthia Lemere (USA), Jean Delabar (France), Dean Nizetic (Singapore), Jorge Busciglio (USA), Nicole Schupf (USA), Pablo Caviedes (Chile), Deny Menghini (Italy)
mara.dierssen@crg.eu

The Scientific Program Committee of T21RS has two overall aims. First, to present the most exciting and relevant new science, and second, to facilitate development of networks and contacts among scientists interested in different aspects of Down syndrome, and to attract new talent to our field. Multidisciplinarity is a core value of our field, that our meeting should reflect fostering colleagues from medical professions and science areas, from molecular biology to human research. The scientific achievements and the potential that research offers for optimal patient care and exciting science are highly recognized and appreciated.

The most difficult part is trying to guess who will have exciting data a year from now, and what the hot topics will be. We want the best science, and we want the best speakers. You have a vast experience and knowledge that will be great to make the T21RS biennial meeting in Chicago a maximally rewarding experience with an intellectually stimulating combination of plenary lectures, symposia, educational workshops, and poster sessions. We would be very honoured if you could accept to actively participate in the 2017 SPC.

We had some discussions about the convenience of having lectures that had already presented in the previous meeting. The Ex Comm considered that's should not be a problem in as much as the speaker presents new data. Also, it was decided that we should leave some slots for oral communications (one per symposium), that will be selected by the symposium organiser. We are aware that this will possibly cause some problems for the organisers, but it will help tone more flexible in including possible new exciting things that may appear. If you consider that all the speakers have to be there, then you could encourage them to submit a regular communication that you could then select. Finally, the finances are not very optimistic, and thus unfortunately, it has been decided that the registration cannot be waived for the speakers.

We finally built the program with excellent speakers top of the art research and world recognized scientists. There are also plenty of opportunities for our members to present their work. The program is attached below.

We will now receive and revise the abstract from the members to be presented as poster or oral communication.
For the program see https://www.regonline.com/builder/site/Default.aspx?EventID=1894956

II – Committee for Science & Society

Committee chair:
Peter Paul De Deyn (Belgium)
p.p.de.deyn@umcg.nl

Committee members:
Alain Dekker (The Netherlands), Juan Fortea (Spain), Lotta Granholm (USA, Sweden), Cindy Lemere (USA) and Sebastián Videla (Spain)

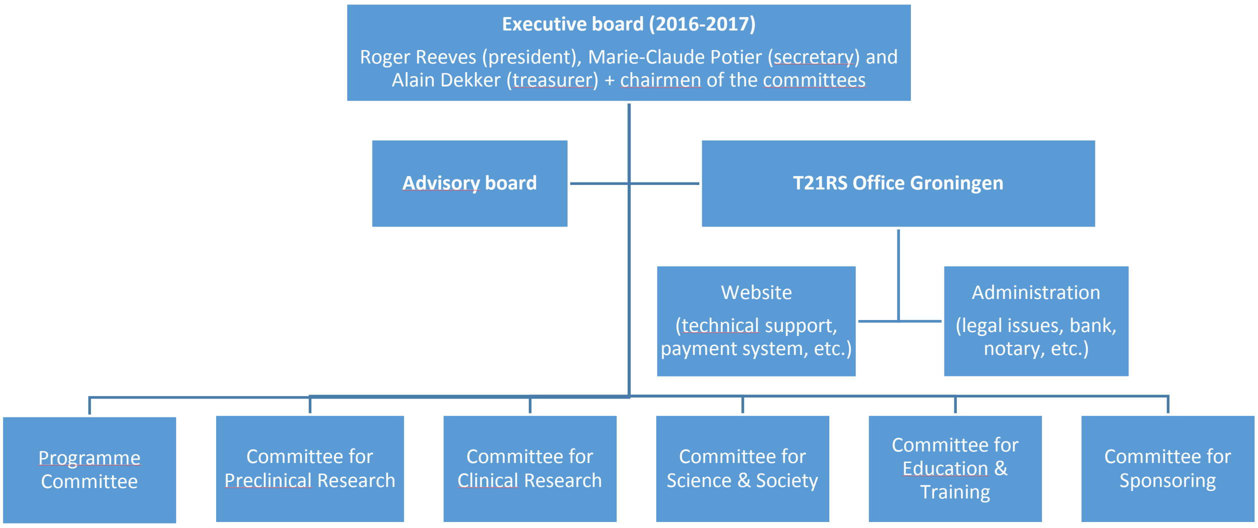
1. General information

The T21RS Committee for Science & Society aims to be in contact with regional and (inter)national Down syndrome associations to disseminate and explain recent scientific findings in understandable language to family members and caregivers. Moreover, the Committee for Science & Society, chaired by prof. Peter Paul De Deyn, receives input from these associations on key issues that you feel should be investigated.

Address:
T21RS Groningen Office
University Medical Center Groningen (UMCG)
attn. prof. PP De Deyn (AB51)
PO Box 30.001, 9700 RB Groningen, The Netherlands

In 2016, Hannah Wishnek (USA) took leave from the Committee. We thank Hannah for her efforts in the start-up phase of T21RS and the Committee for Science & Society. Lotta Granholm and Cindy Lemere joined in 2016. Diana Bianchi (USA), the new director of the American National Institute of Child Health and Human Development, strongly contributes with respect to the organization of the Science & Society Symposium 2017.

The Committee for Science & Society is one of the six committees of T21RS. As chairman of the Committee, Peter Paul De Deyn is also member of the Executive Board. The organizational structure is illustrated in the chart below.



2. Initiatives and achievements 2016

In the third year of T21RS, the Committee concentrated its efforts on three major initiatives:

1) Publishing two new T21RS Science & Society Bulletins
2) Making a start with the organization of the second T21RS Science & Society Symposium, to be held on Saturday June 10th as part of the T21RS International Conference in Chicago (7-11 June 2017)
3) Contributing to The Dementia Table Initiative in The Netherlands

3.1. T21RS Science & Society Bulletin

Science-related issues, recent scientific findings, and overviews of key issues are published as special T21RS Science & Society Bulletins. This Bulletin is written in understandable English by the Committee, or at the Committee's request by experts in the field. The Bulletin is not a scientific publication, but rather a non-specialist magazine article for parents, caregivers etc. T21RS members can download current and previous Bulletins in the T21RS Membership Environment (after logging-in at T21RS.org). Associations may translate the Bulletin into their language (in case of non-English speaking countries) for publication on their website and in their magazines. The use of the Bulletin is free of charge, as long as the T21RS Committee for Science & Society is acknowledged and the content is not changed.

In 2016, two T21RS Science & Society Bulletins have been published:

1. **T21RS Science & Society Bulletin, 2016 (1): Pain experience in adults with Down syndrome**
   by Nanda de Knegt, VU University, Amsterdam, The Netherlands
2. **T21RS Science & Society Bulletin, 2016 (2): The challenge of discovering preventive therapies for intellectual disability in Down syndrome: could there be a breakthrough?**
   by Sandra Guidi, Patrizia Bianchi, Fiorenza Stagni, Andrea Giacomini, Marco Emili, Elisabetta Ciani and Renata Bartesaghi, University of Bologna, Bologna, Italy

3.2. T21RS Science & Society Symposium

During the first T21RS International Conference in Paris (4-7 June 2015), the Committee organized a special Science & Society Symposium on Sunday 7th of June. This symposium aimed to (1) more extensively introduce T21RS (2) get acquainted with the Down syndrome associations, (3) share thoughts and ideas and discuss about future directions and collaborations. Based on the experiences from this first (successful) Science & Society Symposium, the Committee has worked in 2016 on the program for the second edition of this symposium in 2017.

3.3. Dementia Table Initiative

Within The Netherlands, committee members contributed to organizing multiple Dementia Table evenings in 2016. At the T21RS Science & Society Symposium 2015 in Paris, this initiative was presented by Sandra Overbeek and Charlotte Thoolen, founders of the Dementia Table. "The Dementia Table initiative: sharing & improving knowledge about ageing and dementia in people with intellectual disabilities" concerns special evenings for professional caregivers and family members. During these evenings, a variety of topics in the field of dementia and intellectual disabilities/Down syndrome is discussed in an easy-accessible way and in a pleasant ambiance. The initiative is very successful and has been implemented in all twelve provinces of the Netherlands.

III – Committee for Sponsoring

Committee chair:
Jean Delabar (France)
jeanmaurice.delabar@icm-institute.org
sponsoring@T21RS.org

Committee members:
Michelle Whitten (Global Down Syndrome Foundation, USA), Michael Harpold (LumindRS, USA) and Marie-Claude Potier (France)

Communication between members via conference calls and emails

Research of sponsors had three objectives : 1 to maintain functioning of the society to cover basic expenses (web, notary); 2 to fund these grants; 3 to prepare the biennial meeting to be held in Chicago. Sponsors can be classified in four circles: the first one is the circle of founding supporters Lumind, Global Down syndrome, Lejeune Foundation, Matthews Foundation, Trisomie 21 France, who committed themselves to give 5000$ per year for 5 years. The second circle concerns foundations that will give a specific support for the meeting including founding supporters and other foundations like National Down syndrome, Fundacion Ibero Americana, Down syndrome UK. Alzheimer's association. The third circle is the institutional granting agencies: an application was submitted by J Busciglio and R Reeves to NIH. The fourth circle put together pharmas with interest in developing treatments for DS like Roche or AC Immune and biotechs providing tools for research like DNA Genotek, Neuronix: or JAX: 15 companies have been contacted during 2016.

IV – Committee for Education, Training and Fellowships

Committee chair:
Renata Bartesaghi (Italy)
renata.bartesaghi@unibo.it

Committee members:
Tom Blumenthal (USA), Carmen Martinez Cué (Spain), Tarik Haydar (USA)
and Annette Karmiloff-Smith (UK) †

The Committee for Fellowships, Education and Training launched in the year 2015 the “T21RS Dissertation Award Program year 2015: Competition for Outstanding PhD Thesis”. According to the call: “Prizes will be awarded for up to 2 outstanding doctoral dissertations. The recipients receive an honorarium of Euro 1,000 each. The topic of the dissertation must be in the field of Down syndrome”. The Application Deadline was June 30, 2016. The Committee received the following five applications within the deadline:

De Knegt Nanda
Thesis title: The Down Side of Pain

Florencia Iulita
Thesis title: Studying Alzheimer’s Disease Pre-clinical Stages: Insights from Down Syndrome and Transgenic Animal Models.

Maaike Kusters
Thesis title: Adaptive immune system and vaccination responses in Down syndrome.

Amanda Sinai
Thesis title: Assessing specific cognitive deficits associated with dementia in older adults with Down’s syndrome: a London based study.

Fiorenza Stagni
Thesis title: Pharmacological rescue of dendritic pathology in the Ts65Dn mouse model of Down syndrome.

The Committee decided that evaluation should took into account:
- Originality and contribution to the literature
- Importance of the research
- Innovation
- General presentation of the thesis

In August, the Committee decided to evaluate individually and then collegially the PhD theses. Collegial evaluation took place on Thursday September 29. Annette could not take part in the evaluation for serious health problems. At the end of the skype meeting the Commitee agreed to assign the two awards to Florencia Julita and Fioranza Stagni. The results of the competition will be announced officially during the T21RS meeting, June 2017, in Chicago. The winners will receive a certificate of the prize.

V – Committee for Preclinical Research

Committee chair:
Yann Herault (France)
herault@igbmc.fr

Committee members:
Stylianos Antonarakis (Switzerland), Mara Dierssen (Spain), Elizabeth Fisher (UK), Katheleen Gardiner (USA), Marie-Claude Potier (France), William Mobley (USA), Eugene Yu (USA) and Jean Delabar (France)

The committee is still pursuing his ambitious objectives:

1. To facilitate the access to cellular and animal models: build a simple nomenclature, resource sharing plan, harmonization of generation and storage protocols, accessible virtual repository (database)
2. To establish common protocols for preclinical research: behavioural analysis, cellular characterisation, breeding schemes and special need for Down syndrome models
3. To capture and make available data from phenotyping including OMICS data: joining international initiative such as IMPC www.mousephenotype.org
4. To validate protocols for preclinical and translational medicine: establish and validate new disease-relevant phenotypes and protocols for preclinical pharmacology study, position papers on new tools for manipulating new targets in cellular and mouse models

In the context of the work of the Preclinical Committee of the Trisomy 21 Research Society, several objectives have been recognized to improve the preclinical research in our field:

1. The list of DS mouse models is updated with current published models and a few that are in progress in rats (YH Personal communication, Birling et al., Sci rep. in press).
2. Detailed protocols for preclinical research have been defined for behavioural analysis with the help of Mara Dierssen and Yann Herault. They will be reviewed by other members and made publicly available before the next T21RS meeting.
3. Reliable protocols for iPS differentiation are now listed (Marie-Claude Potier, Dean Nizetic, Lesley, Anita)
4. We will generate a table with trial assays (successful or not) on DS mouse models (Jean-Maurice Delabar, Marie-Claude Potier, Mara Dierssen)

The list of common protocols for preclinical research (behavioural analysis and drug testing; iPS differentiation; other cellular models (primary cultures, cell lines, etc.) will not only to facilitate and improve preclinical research in our field, but also improve reproducibility and rigor.

We would welcome feedback from the Down syndrome research community in specific aspects:
We continue to encourage the use of community-based standards (such as nomenclature standards and reporting standards like ARRIVE (Kilkenny et al., PLOS Biol., 2010, e1000412), when applicable. We encourage our research community to increase reproducibility and rigor in the Down syndrome field by encouraging the use of methods of randomisation at a minimum for all animal experiments, help calculating the appropriate sample size at study design, help using appropriate statistical methods of power analysis, help establishing the criteria for exclusion of any data or subjects. We would be keen on having

feedback about the use of such recommendations and further comments to know if support for design studies, power analysis and statistical analysis would have to be provided through the T21RS web site.
In parallel, new challenges are rising with the importance of controlled environment, microbiote and infection/inflammatory status in modifying phenotypic outcome (Stappenbeck and Virgin, Nature, 2016, 191-199; Beura et al., Nature 2016, 512-518). Our attention should also focus on monitoring those variables as metadata and may be defining new standards for studying models of human conditions.

Last year we proposed to support reports about negative experimental results, especially if the results could thus NOT be published. We would be keen on having additional feedbacks from the community to continue on this way and to find how to make such results “citable”. These datasets could be of gigantic value for the DS community and could set an example for other communities.

VI – Committee for Clinical Research

Committee chair:
Andre Strydom (UK)
a.strydom@ucl.ac.uk

Committee members:
Shahid Zaman (UK), Ira Lott (USA), Tonnie Coppus (The Netherlands), Juan Fortea (Spain) and Weihong Song (Canada - China)

The T21RS clinical committee have had regular phone conferences to identify commonalities between ongoing cohort and biomarker studies of Alzheimer's disease in Down syndrome in the UK, EU and US.

We have shared the summary protocols for cognitive assessments to map common tests and approaches, which will be posted on the T21RS website in early 2017. We are also conducting a brief systematic review of the psychometric properties of IQ tests and adaptive behaviour scales in adults with Down syndrome in order to help with matching between studies. This work will hopefully inform efforts to establish genetics consortia, such as the recently formed Horizon21 Down syndrome genetics consortium in the EU.

The committee has plans to meet in person at the Chicago conference, or at the AAIC meeting in London.

Annual Financial Report 2016

Attachment to T21RS Annual Report 2016

1. Treasury

T21RS is the first non-profit scientific society (*Dutch:* vereniging) for Down syndrome research. T21RS operates under Dutch law. The official statutory address and the Rabobank are located in Groningen, The Netherlands.

Address:	T21RS Groningen Office University Medical Center Groningen (UMCG) *attn. P.P. De Deyn & A.D. Dekker (AB51)* PO Box 30.001, 9700 RB Groningen The Netherlands
Treasurer 2016-2017:	A.D. (Alain) Dekker University Medical Center Groningen, The Netherlands
Past-treasurer 2014-2015:	A.M.W. (Tonnie) Coppus Radboud University Medical Center Nijmegen, The Netherlands
Operational currency:	Euro (€)
Number format:	Continental European, e.g.: 40000,25 *(forty thousand and twenty-five cents)*

2. Summary of 2016

As of 01-01-2016 the official position of treasurer (part of the executive board) has changed from Tonnie Coppus to Alain Dekker. In its third year of its existence T21RS has had a relatively calm year. Due to the fact that the T21RS International Conference is a bi-annual meeting (last edition: 2015 in Paris; upcoming edition: 2017 in Chicago), 2016 was an 'off-year'. The preparations for the T21RS International Conference 2017 started at the beginning of 2016 and the majority of expenses on the balance (see below) relate to the organization of this second meeting. Sponsoring of the five founding supporters has continued over 2016. Membership has remained relatively stable, with most current members prolonging their membership for an additional twelve months. At the end of 2016 the T21RS Thesis Awards (2x € 1000,-) were granted to Florencia Iulita (Canada) and Fiorenza Stagni (Italy) for the best doctoral theses in the field of Down syndrome research.

3. Revenues

T21RS main revenues consist of membership fees and sponsoring. We distinguish two types of membership: (1) full membership for researchers and clinicians, and (2) associate membership for DS associations/foundations.

Full membership for researchers and clinicians

• Master/PhD student	€ 40,-
• Postdoctoral fellows	€ 80,-
• Academic staff members / clinicians	€ 100,-

Association

• Associate member	€ 50,-

After registration of an account on www.T21RS.org, people automatically proceed to the secured payment module, operated by the international payment operator Multisafepay. In 2016 we have changed our membership policy by incorporating a reduced membership fee for individuals living and working in countries with low-income, low-middle income and upper-middle income economies (as defined by the Worldbank). They automatically receive a 50% discount on their T21RS membership fee after selecting the specific home country in the registration process.

Sponsors

T21RS is very grateful to five non-profit organizations that support the establishment of the society and its aims. These Founding Supporters have committed themselves to 5 years of support at a level of € 5000,- per year:

- Lumind Research Down Syndrome Foundation
- Fondation Jérome Lejeune
- The Matthews Foundation
- Global Down Syndrome
- Trisomie21 France

Lumind has additionally granted sponsoring for the T21RS International Conference 2017 in Chicago. The T21RS Committee for Sponsoring (chaired by Jean Delabar) focuses on enlarging sponsor revenues for the society itself, as well as for organizing the conference. Increasing sponsor revenue is a key point of attention and care for 2017. Without additional sponsoring, the society will not be able to expand its activities further than the current initiatives.

4. Expenses

In addition to the general ongoing expenses for maintenance of our website (including new options, such as the automatically awarded 50% discount for individuals in low-income, low-middle income and upper-middle income countries), banking fees and notary costs, the 2016 balance is dominated by costs for the T21RS International Conference 2017 in Chicago. This mainly concerns monthly payments to conference organizer Nan Matthews/The Matthews Group.

5. Profit and loss statement: **next page**

6. Balance: **page after the next**

7. Conclusion

The year 2016 is closed with a net profit of € 35033,24 resulting in a positive balance of € 59706,70. Nevertheless, the society has to be cautious in 2017 with respect to substantial costs for organizing the T21RS International Conference 2017 in the expensive city of Chicago.

A.D. Dekker
Treasurer T21RS

R.H. Reeves
President T21RS

M-C. Potier
Secretary T21RS

Trisomy 21 Research Society (T21RS)

Profit and Loss Statement

For the period from 01/01/2016 to 01/01/2017

Accrual basis

	01/01/2017
Income	
Membership fees	**10 645,00**
Sponsoring	**33 177,77**
Total - Income	**43 822,77**
Less: Expenses	
Conference organization	**4 616,54**
Operational costs	**2 172,99**
T21RS Thesis Award	**2 000,00**
Total - Expenses	**8 789,53**
Net profit (loss)	**35 033,24**

Trisomy 21 Research Society (T21RS)

Balance Sheet

As at 01/01/2017

Accrual basis

	01/01/2017
Assets	
Cash & cash equivalents	**59 706,70**
Net assets	**59 706,70**
Equity	
Retained earnings	**35 033,24**
Starting balance equity	**24 673,46**
Total - Equity	**59 706,70**
Total equity	**59 706,70**

T21RS Annual Report 2016 (incl. Financial Report)
Executive Board – signatures

R.H. Reeves
President T21RS

A.D. Dekker
Treasurer T21RS

M-C. Potier
Secretary T21RS

M. Dierssen
Chair Program Committee

P.P. De Deyn
Chair Committee for Science & Society

Y. Herault
Chair Committee for Preclinical Research

R. Bartesaghi
Chair Committee for Education

J-M. Delabar
Chair Committee for Sponsoring

A. Strydom
Chair Committee for Clinical Research

t21
RESEARCH
SOCIETY

T21RS Governing Council (General Assembly) meeting

Saturday 10th of June 2017, Chicago, Illinois, USA
during T21RS International Conference 2017

Venue

Date:	Saturday 10th of June 2017
Time:	13:30 – 14:30 (Chicago time)
Location:	Feinberg Conference Center Feinberg Pavilion, Northwestern Memorial Hospital 251 E. Huron Street Chicago, Illinois 60611 United States of America *main meeting room*

Program

1. Welcome and opening of the General Assembly (13:30)
2. Presentation and Approval of Annual Reports 2015/2016 (incl. Financial Reports 2015/2016) (discharge)
3. Discussion and Approval of revised T21RS Statute
4. Society announcements and discussion
5. Closing (meeting adjourned/ended at 14:25)

Membership

Members present: **105 full members with voting rights**

Voting on annual report 2015:

Against:	0 members
Abstain:	0 members
In favor:	105 members

Voting on annual report 2016:

Against:	0 members
Abstain:	0 members
In favor:	105 members