



**Society for Cryobiology 2019 Election  
Candidate Biographies and Vision Statements  
Election Dates: November 4-18, 2019**

**Candidates for President-Elect (2020-21)**

- Greg Fahy
- Tiantian Zhang

**Candidates for Treasurer (2020-21)**

- Steve Mullen
- Zhiquan (Andy) Shu

**Candidates for Secretary (2020-21)**

- James Benson
- Willem Walkers

**Candidates for Governor-at-Large (2020-22)**

- Yuksel Agca
- Daniel Ballesteros
- Antonio Molina
- Harriete Oldenhof
- Gayle Volk
- Peter Wilson

**Voting Instructions**

All members in good standing will receive an email in advance of the election to the email address listed in their member profile with a personalized one-time use voting link to cast their vote anonymously at [simplyvoting.com](http://simplyvoting.com).

**Voting Methods**

**Officers:** Each member must rank the candidates in order of preference.

**Governors:** Each member is assigned 100 points. Members choose how to allocate those points e.g. a voting member could give one candidate all 100 points, or divide points among the candidates. All candidates are then listed and selected by most point total.

## Candidates for President-Elect (2020-2021)

### **Greg Fahy, PhD**

#### **21st Century Medicine, Inc., USA**

**Biography:** Greg Fahy is the Executive Director and Chief Scientific Officer of 21<sup>st</sup> Century Medicine, Inc., a company devoted to organ cryopreservation research and development. He received a Ph.D. in Pharmacology in 1977, studying under the late Armand Karow, Jr., who was a leader in organ cryopreservation (and became the subject of a special memorial issue of *Cryobiology* in 2010). Fahy's early work focused on deciphering freezing injury using mathematical models of the ternary liquidus to relate injury observed upon thawing to events encountered during freezing, the conclusion being that Lovelock's theory is incomplete and that cryoprotectants can exert toxic effects in the frozen state. He also used freeze substitution to examine the effects of freezing on renal tissue, and observed frank damage to the glomeruli and tubular structures, which was consistent with vascular damage observed after transplanting frozen/thawed dog kidneys. These observations led to the proposal of vitrification at low cooling rates as a solution to the problem of organ banking in 1981, an idea that resulted in the influential demonstration in 1985, with Bill Rall, of the successful vitrification of mouse embryos, which launched the modern era of vitrification research. As for organs, he designed and built the first computer-operated perfusion machine intended to enable vitrification and showed transplant survival of rabbit kidneys after perfusing vitrifiable solutions in 2000, after cooling to -45°C in 2004, and after vitrification and rewarming in

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

2009. His current research is devoted to improving viability and vitrification tendency of rabbit kidneys and assisting with the demonstration of RF warming techniques.

Dr. Fahy served as the Treasurer of the Society for Cryobiology from 1985-1987, as the editor of the Society's newsletter, *News Notes*, from 1986-1987, as the organizer of four symposia or workshops held at the Society's annual meetings and as the editor of the proceedings of three of those symposia in *Cryobiology*, as a Crystal Award judge on at least four occasions, and as a member of the annual meeting program committee on 6 occasions. He also organized and edited, with David Pegg, a special issue of *Cryobiology* in memory of Armand Karow, Jr. He presently serves on the Board of Governors of the Society. In 2014, he was named as a Fellow of the Society for Cryobiology.

**Vision Statement:** The Society for Cryobiology truly is a society, which is one of its great strengths. I have been around long enough to have witnessed the immense improvements the Society has made in welcoming students into our field, from the formation of ICYR to the inauguration of the Peter L. Steponkus Crystal Award and the John Critser and other student travel awards to the practice of inviting students to co-chair sessions at our annual meetings. These are important ways of making participation in Society events and cryobiological research in general rewarding and attractive, and hopefully encourage many students to remain in our field after graduation. At the same time, the Society has in recent times also become more supportive of its established members as well, having recently created the Dayong Gao Young Investigator Award and the Arthur W. Rowe Cryobiology Best Paper Award to add to its also fairly recent creation of the CryoFellow Award, and has announced plans for a new Peter Mazur Prize for Lifetime Achievement. These awards and others are important for the career development of cryobiologists, who have previously been handicapped by both the small size of our field and the lack of mechanisms for demonstrating recognition by their peers, and help to encourage research excellence at all levels of career development. They are an important way for us to strengthen and bring favorable attention to our discipline and should be maintained.

For the future, the major task ahead is to continue to implement the excellent Business and Tactical Plan put together by Nicole Evans with the assistance of the Board. Much has already been done to reach out to potential new members, retain existing members, and upgrade our website, but more can be done to encourage new memberships derived from the establishment of local groups or Society chapters. In addition, we could do more to obtain institutional and corporate memberships from organizations like the ATCC, NDRI, OPA, CryoLife, The Frozen Zoo, GSK, and other groups and to form liaisons with institutions concerned with matters related to cryobiology. The Society may also be able to benefit by offering items such as Society for Cryobiology T shirts and mugs for sale at our annual meetings or online or by fostering appropriate advertising on our website. If the Society had more resources, we could consider providing limited seed funding for new cryobiological projects that would enable our members to develop the preliminary results they need to strengthen their grant applications to other institutions. A proposal to present the history of cryobiology through a list of and links to pivotal papers that document the key milestones in the development of our field is a good one and should be implemented. And finally, there are ways for the Society to avoid the current ongoing loss of historical information that occurs as labs are closed down and precious artefacts and documents end up in the trash, and I would like to see some progress in implementing them.

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

**Declaration of Competing Interest:** I have no actual or perceived competing interests in relation to the position for which I am a candidate.

---

**Tiantian Zhang, PhD**  
**Bournemouth University, United Kingdom**

**Biography:** Professor Tiantian Zhang obtained her Environmental Biology degree from Liaoning University (P.R. China) in 1982 and worked as a research scientist in the area of environmental biology before obtaining an MPhil degree in Environmental Biology at Middlesex University (UK) in 1990 and a PhD degree in Cryobiology at University of Bedfordshire in 1994 (UK). She worked as a post-doctoral research fellow and a senior research fellow at University of Bedfordshire before she was made Reader in 2003 and Professor in 2005. She was appointed Director of Institute of Research in the Applied Natural Sciences at University of Bedfordshire in 2008 before joining Bournemouth University in 2012 as the Head of the Graduate School. She was subsequently appointed as the Deputy Dean of Research and Professional Practice in the Faculty of Science and Technology at Bournemouth University in 2017. She is also a member of the Executive Committee of the UK Council for Graduate Education.

Professor Tiantian Zhang is a leading figure internationally in research on cryopreservation of gametes and embryos of fish species and her research interests have been in the areas of cryopreservation of reproductive cells and the effect of cryopreservation on genome integrity and cellular metabolism. Her research activity has led to over 150 publications and over 100 presentations at international conferences and workshops. Professor Tiantian Zhang has obtained substantial funding from funding bodies such as the UK Research Councils, Wellcome Trust and EU. She has supervised over 30 PhDs and other research degree students and has been an editor or referee of over ten scientific journals including the leading journals in the field of cryobiology such as *CryoLetters* and *Cryobiology*. She served as a member of the Board of Governors of the Society for Cryobiology from 2013 to 2015 and was the elected Chairman of the Society for Low Temperature Biology (SLTB) from 2005 to 2008 following serving as General Secretary, Treasurer and Committee Member of SLTB for 10 years. She received an award from Society of Cryobiology for her service in 2016 and was re-elected as a member of the Board of Governors of the Society for Cryobiology in 2017.

**Vision Statement:** Cryobiology is an important area of science and its applications in biomedicine, conservation and agriculture have significant economical, medical and environmental benefits. I would like to stand for election of Chair of the society because I believe Society of Cryobiology has an important role to play in making increased impact in these areas and I have the experience and skill required for taking on the role. I believe it is important that we have a clear vision and strategy for 21<sup>st</sup> century operation of the society and a longer term financial and operational plan. Building on our successes so far, I believe we need to engage more widely in academic and political debate relevant to our remit in order to promote our science and raising the profile of the Society. If elected, I will focus on these priorities as well as providing excellent business services such as membership services, conferences, journal publications, and newsletters and through effective board and finance management. I would very much like to promote our society's collaborative activities with other scientific societies and organisations through joint meetings, workshops and seminars and especially in less represented regions. I also believe that education and training in cryobiology is important in promoting our science and public engagement should be an important

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

part of our activities. I will actively support young scientist and promote widening participation of society's activities by women and other under represented groups.

**Declaration of Competing Interest:** I have no actual or perceived competing interests in relation to the position for which I am a candidate.

---

## Candidates for Treasurer (2020-21)

**Steven F. Mullen Ph.D.**  
**Cook Medical, USA**

**Biography** Steven Mullen is a Senior Scientist and Team Lead in the Reproductive Health Business Unit at Cook Medical, Bloomington, IN USA. He has served in that position for 4.5 years. He completed his Bachelor of Science Degree from the University of Minnesota, and Ph.D. degree from the University of Missouri at Columbia, where he was also the recipient of the Donald K. Anderson Graduate Research Award in 2006. After finishing his Ph.D. and a one-year postdoctoral fellowship in the laboratory of Professor John K. Critser, he joined 21<sup>st</sup> Century Medicine, Inc in California to continue research in the area of reproductive cryobiology. He was awarded an NIH Phase I grant to investigate automated high throughput applications of oocyte vitrification. He was subsequently recruited to join the World Egg Bank in 2011 to lead the scientific and technical aspects of the company as the Scientific Director. In 2015, he joined Cook Medical to serve in his current position. He has been a member of the Society for Cryobiology since 2001. While a graduate student, he lead the International Cryobiology Young Researchers group (ICYR) for 4 years.

**Vision Statement** The Society for Cryobiology has provided to me a sense of community that has lasted for 18 years. While all of us in the Society have recognized the importance of cryopreservation in various applications, the rest of the world seems to finally have caught up. Cryopreservation is being recognized as a critical aspect of supply chain management in diverse fields from animal breeding to cellular therapy. The Society has been able to capitalize on this recently in efforts from leaders in our organization. It is my desire to contribute to such efforts. We need to continue to reach out to a diverse audience to broaden our impact and demonstrate the value we bring to improvements in biotechnology and medicine. I support the efforts to improve our financial position that has allowed us to become a more attractive venue for scientific collaboration and communication. Specifics include financial support for invited speakers to our annual meeting, collaborations with other scientific societies, and awards for outstanding science at the early stage of a career. Such efforts, in my opinion, are invaluable to increasing the awareness of our strengths and unique knowledge in science and medicine, and will lead to an increase in our reputation as a leading scientific organization.

**Declaration of Competing Interest:** No actual or perceived competing interests in relation to the position for which I am a candidate.

---

**Zhiquan (Andy) Shu**  
**Washington State University, USA**

**Biography:** Dr. Shu is a Clinical Assistant Professor at the Washington State University, Associate Director of the Center for Cryo-Biomedical Engineering and Artificial Organs and Affiliate Assistant Professor at the University of Washington. Dr. Shu obtained his Bachelor's degrees in both

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

Mechanical Engineering and Computer Science from the University of Science and Technology of China, and his Master and PhD degrees from the University of Washington in Seattle in 2009 and 2013, respectively. After that he worked as a postdoctoral research fellow at the University of Washington from 2014 to 2015 with funding supports from NIH and Bill & Melinda Gates Foundation. Dr. Shu's research has been focusing on fundamental and applied cryobiology, development of novel methods, technology, and instruments for cryobiology study and cryopreservation applications, and optimal biopreservation of various types of cells and tissues. His work involved the biopreservation of red blood cells, hematopoietic stem cells, adipose- derived stem cells, peripheral blood mononuclear cells, mucosal immune cells, sperm, mycobacterium complex cells, islets, adipose tissues, mucosal tissues, carotid arteries, and others, by freeze-thawing, freeze-drying, or vitrification. Dr. Shu has published 3 book chapters, authored/co-authored more than 60 peer-reviewed journal papers, and many conference papers and abstracts. Dr. Shu has been a member of our society since 2004. He is now serving as the Treasurer of our society, Section Editor for the journal of Biopreservation and Biobanking, Editorial Board Member of a few other journals, and invited reviewer for about 10 scientific journals. In the last three years, he has also been actively serving our society on the Conference Program Committee, Student Awards Committee, Scientific Review Committee, and as Session Chair (Session of Tools and Technology) for CRYO2017, CRYO2018, CRYO2019.

**Vision Statement:** It was my great honor that I have been serving our society as the Treasurer since January 2018. In the last almost two years, I devoted a lot of time to the treasurer's duties, such as management of bank accounts, money transfer, spreadsheets, tables, forms, tax issues and policies, awards, financial proposals and reports, communication with sponsors and members, etc.. I really enjoyed this work. Meanwhile, sometimes the very intricate work (e.g., tax form preparation) made me recognize how important the continuity of the treasurer's work is for this position. Indeed, it took me quite long time to take all the work over from the previous treasurer. Therefore, I am requesting your support for another term such that I can continuously and better serve you and our society.

If re-elected, I would continuously fully commit to all the relevant treasurer's duties. I would also try my best to keep our society healthy and dynamic in finance. On one hand, I would keep looking for ideas to minimize the management expense for our society (e.g., banking fees). On the other hand, I would actively work with other executive board members to explore any opportunities to increase the revenue (e.g., solicitation of donation/sponsorship). I would also hope to promote the collaborations in our community, especially among young investigators, raise funding from national or international agencies to address some of the most challenging problems in cryobiology, for example, organ preservation.

**Declaration of Competing Interest:** I have no actual or perceived competing interests in relation to the position for which I am a candidate.

## Candidates for Secretary (2020-21)

**James Benson**

**University of Saskatchewan, Canada**

**Biography:** I have been an active member of the Society for Cryobiology since 2004, a Governor at Large for the Society since 2013, a member of the Awards committee since 2010, and have served as the Chair of the Awards committee for the society from 2012 to 2019. I have an active interdisciplinary research program encompassing mathematics, biophysics, and molecular biology with an overarching goal of minimizing cryopreservation damage through informed models of toxicity accumulation. During my time as a Governor at Large, the Society made dramatic changes towards modernization, including retaining a high quality Society Executive to aid in day-to-day activities, and partnering with a number of key non-profit organizations and societies to ensure relevance for the decades to come. During my time as chair of the Awards committee, a number of changes were instituted including creating the revamped Crystal Session during the annual meeting, creating and awarding the first Art Rowe Young Investigator award, and initiating (and handing off to the Editorial Board) the Annual Best Paper Award.

**Vision Statement:** One of my roles as Society secretary will be to oversee membership initiatives. The Society has recently done an outstanding job of recruiting and retaining members, but I believe that further gains in membership can be made by leveraging our partnerships with other relevant societies such as ISBER and ISCT. To obtain and retain members from these other societies and elsewhere, we must offer services beyond just “membership in an academic society”. I intend to push the membership committee and the Board of Governors to think creatively to develop real value for its members. One particular item that I will push for is a Society-run webinar series to address critical issues relevant to our diverse membership. This will aid in ensuring participation from members who may be unable to attend annual meetings, and will facilitate outreach to areas that are broader in scope than our usual membership. In short, I have been a long-time active member of the Society, and am happy for the opportunity to continue to give back to it.

**Declaration of Competing Interest:** No actual or perceived competing interests in relation to the position for which I am a candidate.

---

**Willem F. Wolkers, Ph.D.**

**University of Veterinary Medicine Hannover, Germany**

**Biography:** Wim Wolkers received his education at Wageningen University (M.Sc., Molecular Sciences, 1992, Ph.D. 1998) in the Netherlands, after which he did postdoctoral research at the Center for Biostabilization, University of California, Davis, USA. He was appointed as research assistant professor at the department of Mechanical Engineering, University of Minnesota in 2006 and appointed as professor at the Institute of Multiphase Processes, Leibniz University of Hannover in 2007, where he has been leading a group ‘Biomedical Process Technology’ within the cluster of excellence ‘From Regenerative Biology to Reconstructive Therapy’ REBIRTH. In 2019, he moved with his group to the University of Veterinary Medicine Hannover, where he is leading a biostabilization group in the research center NIFE ‘Lower Saxony Centre for Biomedical Engineering, Implant Research and Development’. His research interests include membrane biophysics during cell preservation technologies, protein stability, and mass and heat transfer processes during freezing and drying of cells and tissues.

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

**Vision Statement:** My fascination for cryobiology and the related field of anhydrobiology comes from working on a wide range of topics including macromolecular stability in desiccation tolerant tissues, freeze-drying of platelets and biological scaffolds, permeation of protectants in tissues, and water transport processes during freezing of cells. The inherent interdisciplinary nature of cryobiology and its link with human and animal medicine make it attractive for me. Cryobiology should be approached as more than an empirical science. It follows thermodynamic principles, which can be used to predict cryobiological outcomes. My visions for the position of secretary are first of all to fully commit myself to all organizational duties coming with this position. Furthermore, within this executive position, I want to promote cryobiological research among different scientific disciplines, to attract new communities increasing the size of the society, and to attract young scientists. The society should increase their efforts to attract communities doing cryobiological research that thus far have had little or no contact with the society. Cryobiology should provide a podium for biologists, chemists, physicists, mathematicians, and engineers that have affinity for the fascinating fields of low temperature and anhydrous biology.

**Declaration of Competing Interest:** I have no actual or perceived competing interests in relation to the position for which I am a candidate.

---

## Candidates for Governor-at-Large (2020-22)

**Yuksel Agca, DVM, MS, PhD.**

**University of Missouri, USA**

**Biography:** Dr. Yuksel Agca received his DVM degree from University of Ankara, Turkey. His first acquaintance with cryobiology began in 1992 when he was pursuing MSc. degree at the University of Wisconsin-Madison and continued on during his PhD at the Cryobiology Research Institute at the Methodist Hospital of Indiana via Purdue University. He investigated fundamental cryobiology of mammalian oocytes in the Indiana University School of Medicine as post-doctoral fellow from 1999 to 2001. Dr. Agca is currently an Associate Professor at the University Of Missouri College Of Veterinary Medicine. His research program mainly focuses on cellular and molecular aspects of germplasm cryobiology as well as genetic modification in rats to investigate human disease such Alzheimer's diseases. To date, he had the opportunity to collaborate with outstanding group of scientists to better understand cryobiologic properties of cell and tissue (*e.g.* gametes, ovarian tissues, and stem cells) of biomedically and agriculturally important species as well as development and characterization of transgenic rat model of Alzheimer's Diseases. These interactions provided him with a comprehensive perspective of the field of cell and tissue cryobanking, animal modelling of human diseases. Throughout his career development he had the opportunity to work with many mammalian species including mouse, rat, pig, cattle, sheep, cat, human and non-human primates. To date, he has published about 70 journal articles, and contributed to 10 book chapters. He has mentored and trained PhD students, research fellows, externs, veterinary residents, and visiting scholars. He had the great opportunity during the establishment of two NIH-funded national genome resources centers, namely Rat Resource and Research Center and the Mutant Mouse Resource and Research Center. He is currently one of the Co-investigators of these two national rodent genome resource centers and overseeing reproductive cryobiology section. He has been a member of the Society for Cryobiology since 1995, and currently serves as a Sfc Secretary as well as membership committee chair.

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

**Vision Statement:** I have always believed in the importance of basic research effort and its translation into biomedical and agricultural fields. Cryobiology in conjunction with the life sciences and engineering has no boundaries. The interaction of cross-disciplinary knowledge and technology is crucial for the development of new tools and methodologies that will ultimately serve well-being of humanity. Currently, biomedical, agricultural and conservation biology communities are extensively utilizing cryo- and low temperature storage of biomaterials for various reasons. Furthermore, as field of bioengineering is advancing in a rapid pace, our mission as cryobiologist is also becoming more complex. We are not only responsible for finding damages caused by cryopreservation process, but also developing optimal cryopreservation protocols which ensure proper long-term storage conditions by complying with universal archiving standards for potential users in the future. As expected, the science is adding new disciplines and thus becoming more competitive than ever. We must find resources to reach young brilliant minds internationally and encourage them to be part of the prospects of our field in order to uphold our society in the future. I think our society as whole is aware of this fact and should continue to develop endowment arrangements which will provide longstanding support for young researchers. Thus we should play more active role interacting with regulatory agencies and related societies in order to have more visibility and voice.

**Deceleration of Competing Interest:** I have no competing interest in relation to the position for which I am a candidate.

---

**Daniel Ballesteros**  
**Royal Botanic Gardens, United Kingdom**

**Biography:** Daniel Ballesteros is researcher at Royal Botanic Gardens, Kew (United Kingdom) at the department of Comparative Plant and Fungal Biology. He obtained his BSc and MSc degrees in biology and plant science from the University of Valencia, Spain. He also received a PhD in Plant Science from the University of Valencia in 2008. His PhD research focused on the physiological and biophysical aspects that govern tolerance to desiccation and low temperatures in fern spores, with an applied focus on long-term preservation (including cryopreservation). Dr. Ballesteros has a large international experience in plant germplasm conservation and cryopreservation gained during his postdoctoral career in research centers of the USA, South Africa, Italy, Spain and United Kingdom. His current research aims to reveal the fundamental basis of desiccation and low temperature stress tolerance in seeds, particularly in relation to successful cryopreservation. In addition to studies on desiccation sensitive seeds (e.g. oaks, avocado, cacao), he is interested in the variation in longevity in plant propagules, from fern spores as a unicellular model to more complex systems. Often these studies involve making structural and biophysical determinations. He also carries out teaching and training activities for staff and supervise undergraduate, MSc and PhD students. Dr. Ballesteros has been a member of the Society for Cryobiology since 2018. He was executive co-chair of CRYO 2018 and has served on the program committee of CRYO2018 and CRYO2019, being co-chair of the program committee of CRYO2019 along with Dr. Jason Acker.

**Vision Statement :** Cryobiology is an essential science, crucial to improve the methods for an effective cryopreservation of plants and animal cells, and vital to understand how life respond and has adapted to low temperatures and to living in freezing environments. Advances in cryobiology and cryopreservation can only be possible if we build our research and technological developments

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

on the knowledge that has been previously acquired. These advances are often stimulated by interdisciplinary learning, by collaboration among research groups, by effective networking, and by the support and promotion of the next generation of scientists, and the Society for Cryobiology (SfC), its publications, and its annual meeting have always been a reference for these activities.

However, from my point of view, the SfC and their meetings have been mainly focused on medical sciences and animal cell preservation. From my point of view, plant cryobiology and cryopreservation, although an important part of this “frozen word”, have often been marginally represented in the SfC meetings and governing bodies. I have been a regular participant in the SfC meetings since 2010 and have always wondered how we could increase the participation of the “plant people”, so we could not only increase our chances of networking but also benefit of the extensive multidisciplinary knowledge and collaborative options.

For this reason, I joined the SfC in 2018, and have been involved in the organization of the annual meetings of the SfC in 2018 and 2019. My vision is that with a little bit of effort we could make the SfC a more appealing place for plant researchers involved in cryopreservation and natural adaptations of plants to freezing environments. In this way fundamental findings from plant scientist with applications on other fields could be promoted among other disciplines and, on the other way around, plant scientists could learn from other disciplines. This is crucial in a field like cryobiology, where the fundamental basis of all research and applications (i.e. ice formation/avoidance, vitrification, and stability of material in the frozen/solid/vitrified state) are shared among life kingdoms and disciplines.

I think there are several activities that would support the goal of attracting new members, particularly from the plant sector and areas of fundamental research: (1) integrating more interdisciplinary sessions in the program of the annual meeting of the SfC (i.e. more sessions on fundamental research where “the sperm”, “the organ”, and “the plant” scientists can join the presentations on new research advances), (2) balancing the program of the annual meeting of the SfC to have a wider interdisciplinary representation (often the annual meetings are dominated by “sperm” sessions), (3) create sessions appealing for researchers on fundamental research (genomics, metabolomics, biophysics) that are not directly involved in the SfC and cryobiology but their research is interesting/applicable for members of the SfC, (4) increasing the presence of the SfC in other international societies with interests on cryobiology (i.e. promoting the organization of specific sessions and workshops in the annual research meetings of diverse societies, e.g. in plants, there are interests on cryobiology at the ISSS-International Society for Seed Science, the ISHS-International Society for Horticultural Sciences, BGCI-Botanical Gardens Conservation International, etc), and (5) being more proactive organizing joint research meetings with diverse societies and organizations.

**Declaration of Competing Interest:** I have no actual or perceived competing interests in relation to the position for which I am a candidate.

---

**Antonio D. Molina-García, Ph.D.**  
**CSIC (Higher Scientific Research Council), Spain**

**Biography:** Dr. Molina-García is a member of the Spanish *CSIC (Higher Scientific Research Council)*, the more important public network of research centers (over 100) in Spain. He is also *Representative of Spain* to the *International Institute of Refrigeration (IIR)* since 2014 and *Member of the IIR C1 Commission (Cryobiology–Cryomedicine)* since 2011.

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

He studied for a Bs.C in Chemical Sciences at the *Biochemistry Section of the Chemical Sciences Faculty, Complutense University* of Madrid. After a first research experience in the *Rocasolano Physical Chemistry Institute*, on differential scanning microcalorimetry, he worked for a PhD at *Nottingham University School of Agriculture*, in hydrodynamics and microscopic techniques applied to microorganisms, under the supervision of Prof. Steve E. Harding. Afterwards, he returned to Madrid where the rest of his professional career has taken place, leaving aside many visits and collaborations with laboratories in the five Continents and spanning nearly 20 countries. More frequent visits and last-longing collaborations include Poland and Argentina.

After several postdoctoral stays dedicated to work with plant viruses and differential scanning calorimeters design, he joined a CSIC Institute, named then "*Instituto del Frío*" ("*Cold Institute*") over 20 years ago, although by now the name of the center has changed to ICTAN. His research at the CSIC meant the application of biophysical concepts and strategies to food and biological systems behavior at low temperature and high hydrostatic pressure. He carried out a number of studies on ice forms (I and III) physical parameters and the dynamics of ice crystal formation and growth during recrystallization. He has been involved with Cryobiology from 2000 and worked with the support of different Spanish government projects on biophysical approaches to plant cryopreservation. He has been working, among others on experimental determinations of cooling rates, on combining DSC and cryo-SEM data to subcellularly locate vitrification, and on studies on the stability of glassy state.

He likes scientific associations, being a member of the Biochemical Society, the British Biophysical Society, the Microbiology Society, and the Spanish Societies for Phytopathology and Microscopy, and, recently, of the Society for Low Temperature Biology.

He joined the Society for Cryobiology in 2010 and since then has taken part in three meetings of the Society. He was involved in the organization of CRYO2018, in Madrid, as chairperson (together with D. Ballesteros), which meant nearly three years' work for its preparation. The congress counted with an especially high attendance, a wide geographical origin of delegates and a high degree of multidisciplinary, both aspects that Dr. Molina-García actively promoted during the preparation for the congress.

**Vision Statement:** I believe that most scientific fields do profit from opinion exchange and interdisciplinary collaboration and this is especially true in a field such as Cryobiology, where Physical, Biological, Medical, Microbiological, Botanical, Ecological, Oceanographical, etc., disciplines have common grounds. Additionally, the SfC has the past background and the future perspectives to promote international collaboration and interconnection, something that has been favored specially by the meetings organization model followed. Cryobiologists form small and scattered communities in many regions (I noted this when I looked for members for CRYO2018 Local Organizing Committee: everybody else, including Dani, were out of Spain...). The existence of international societies, large enough for having a critical mass and own personality and its own internal diversity, but not so large for being anonymous, may be important for we scattered cryobiologists. If I get the chance to contribute to the SfC efforts, I would like to promote further multidisciplinary collaboration and research work in border lines among disciplines and extension of membership and participation in the SfC activities around the world.

**Declaration of Competing Interest:** I have no actual or perceived competing interests in relation to the position for which I am a candidate.

**Harriete Oldenhof**  
**University of Veterinary Medicine, Germany**

**Biography:** Jet Oldenhof studied biology at the Wageningen Agricultural University in the Netherlands (MSc, 1997), with research projects on cell biology and plant desiccation tolerance. Thereafter she pursued her graduate studies on cell cycle regulation in algae at the University of Amsterdam (PhD, 2004). She performed postdoctoral work in the field of plant developmental and molecular biology at the University of California in Davis and the University of Minnesota in Saint Paul, USA. In 2009 she joined the Unit for Reproductive Medicine of the University of Veterinary Medicine Hannover, Germany, where she holds a permanent position since 2016. Initially she was involved in studies related to semen analysis and cryopreservation, but her current tasks also include leading the in vitro fertilization laboratory. Besides performing her own research, she is involved in supervising laboratory work related to clinical duties, teaching veterinary and biology students, and advising graduate students. Her current research interests include sperm chromatin preservation in the dried state, intracytoplasmic sperm injection, female fertility preservation and cryopreservation, water and solute transport in cells and tissues, and physical characterization of preservation formulations.

**Vision Statement:** I have a broad interest and background in cell biology and am particularly interested in how organisms cope with changes in their environment. For example how changes in growth conditions affect cell cycle regulation and development, as well as cellular adaptations to cope with severe environmental stress conditions such as desiccation and freezing. This background has led me to working on development of preservation strategies for a wide variety of cells and tissues for practical applications. I find it especially rewarding to be able to understand why a certain preservation protocol is successful or not. During my academic career, I have become aware of the value of interdisciplinary approaches and the need to communicate with sometimes entirely different scientific disciplines. Cryobiology requires interactions between biologists, clinicians and biomedical engineers to obtain new insights. What I like about the society for Cryobiology is that it facilitates such interactions via its annual meeting.

When chosen in the board of the society I will commit myself to performing the duties that will come with that position. I especially would like to bring forward the following topics: (1) promoting student exchange amongst groups, via the SfC community (2) discussion about quality standards for papers to be published in the journal Cryobiology, and the expected role of reviewers (3) reach out to clinical groups to participate in the SfC meeting.

**Declaration of Competing Interest:** I have no actual or perceived competing interests in relation to the position for which I am a candidate.

---

**Gayle Volk, PhD**  
**USDA-ARS National Laboratory for Genetic Resources Preservation (NLGRP), USA**

**Biography:** Gayle Volk has been a Plant Physiologist at the NLGRP for 20 years. She received a B.S. in Biochemistry from Colorado State University, M.S. in Horticulture from Purdue University, and a Ph.D. in Plant Physiology at Cornell University, followed by a post-doc in Plant Cell Biology at Washington State University. As a scientist in the National Plant Germplasm System (NPGS), Dr. Volk's current research focuses on improving the efficiency of preserving collections of crops (mostly fruit) that are clonally propagated. Her lab group has developed novel methods for cryopreserving

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

shoot tips of garlic, citrus, grape, Jerusalem artichoke, Arabidopsis, and Prunus species and for cryopreserving dormant buds of willow and poplar. Her citrus cryopreservation method has been implemented at NLGRP to preserve more than 400 cultivars in the NPGS Citrus collection. Dr. Volk and her colleagues have determined genetic changes as a result of the shoot tip cryopreservation process, plant membrane permeability of cryoprotectants, and some of the biophysical properties of PVS2 in shoot tips. Dr. Volk's research program also uses genomic tools to assess fruit collection diversity. In 2019, she coauthored the Global Conservation Strategy for Apple Genetic Resources. She has provided seminars and training to genebank and plant cryobiology programs in Canada, China, South Korea, Thailand, Vietnam, New Zealand, Egypt, Mexico, and Kazakhstan. She has also hosted scientists and students for training from Brazil, China, South Korea, New Zealand, France, Iraq, and Egypt. She has authored or co-authored 107 peer-reviewed journal articles and is co-coordinating a USDA effort to develop freely available training materials for the next generation of plant genebank scientists and technicians. She is a member of the Society for Cryobiology and the American Society for Horticultural Science. She was co-coordinator of the "Plant" sessions for CRYO2019 in San Diego, CA.

**Vision Statement:** I was inspired by the networking, educational, and scientific opportunities that happened at CRYO2019. The Cryobiology conference is an ideal annual opportunity for researchers (both students and scientists) to engage with others in the field of cryobiology. I see increased interactions between various communities as vital for forward movement of the field of cryobiology. As a Governor-at-large, I would seek to build on the successful CRYO2019 conference by finding additional opportunities for integration among Cryobiologists (sessions of interest to all conference attendees) as well as focused sessions for specific interest groups to share knowledge, brainstorm, and interact, with a goal of having exciting opportunities for all conference attendees throughout the program. I am a proponent of providing learning experiences (for students, post-docs, and career scientists), whether it be through web-based training, webinars, workshops, or sessions at the Annual Conference. The sharing of new discoveries or even basic knowledge in one field may have unexpected impacts in another area of cryobiology. Increased opportunities for interaction will hopefully attract even more international scientists and students, representing academia, government, non-profits, and industry to the Society for Cryobiology.

**Declaration of Competing Interest:** I have no actual or perceived competing interests in relation to the position for which I am a candidate.

---

**Peter Wilson, PhD, DSc**  
**Southern Cross University, Australia**

**Biography:** Ice growth and its control is at the focus of my research since the time of my PhD studies in Physics at Otago University. During my studies in optics I met and began working with Art DeVries and studying fish antifreeze and methods of action. After postdoctoral positions at Otago and Victoria Universities, I worked for a while in Peter Steponkus lab at Cornell.

I have worked at Scripps Institution of Oceanography, University of Tasmania, University of South Florida and generally look at ice nucleation and the effects of proteins on nucleation and growth. I spent four years at the University of Tsukuba in Japan and am now Professor in the School of Engineering, Science and Environment at Southern Cross University in Australia. I also work with Yoshi Hagiwara at Kyoto Institute of Technology on slippery coatings and ice-phobic coatings.

*Disclaimer: Biographies and vision statements were provided by each nominee and have not been checked for accuracy. Any opinions are those of the nominees, not of the Society for Cryobiology.*

In 1999, I saw a need for a new model of the nanolitre osmometer and formed Otago Osmometers Ltd. Since then we have made nanolitre osmometers out of Dunedin, NZ for many cryobiologists worldwide.

**Vision Statement:** Having attended many Society of Cryobiology meetings since the mid-1980s, I can say that I have watched the progress in cryobiology for 35 years. In many ways progress on preservation has been slow and always a physical and chemical approach helps and is essential. My vision is to see better communication of ideas, be they mainstream or “out of the square”. Many practitioners are elder statesmen and it is essential that we encourage young scientists to foray into cryobiology by all means at our disposal. Progress will only occur through the next generation of biologists, chemists and physicists who are familiar with modern techniques but who are hungry to succeed.

**Declaration of Competing Interest:** I have no actual or perceived competing interests in relation to the position for which I am a candidate.

---