

Society for In Vitro Biology

sivb.org

# SIVB ANNUAL REPORT 2017



FOSTERING THE EXCHANGE OF KNOWLEDGE OF  
IN VITRO BIOLOGY CELLS, TISSUES AND ORGANS

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## PRESIDENT'S REPORT



*Raleigh was the site of the 2017 In Vitro Biology Meeting.*

It seems like only yesterday that I began my term as President of SIVB—and suddenly I find this is my last opportunity to write a short message for the 2017 annual report. SIVB is a vital part of an ‘evidence based’ network of science professionals that contributes to the body of scientific research and to the greater good of society. Recently I took advantage of an invitation to speak for about 10 minutes to a church group of ~150 individuals about the reality of climate change, how crop plants were positive in using CO<sub>2</sub> rather than adding carbon and contributing to global warming. I was asked because of my science background and there was a motion before the body about supporting ‘sustainable energy’ sources compared to carbon based energy sources. I used every second of my allotted time, and I’m pleased to say that the motion garnered over 70% of the votes cast. I like to think that my 40+ years membership in SIVB was great preparation for this speaking challenge.

Science and technology are in the public dialogue more today than any recent time period in my memory. For example, at least once per week our local PBS station has a segment of about 15 minutes devoted to a scientific or engineering subject—complete with statistics and no apology for many words longer than four letters. These segments demand full attention to understand content that is not usually synonymous with TV. Similarly, our NPR station regularly has scientific content of substance and broad interest. Both outlets are great in presenting more than one view as well, which has elicited several heated conversations directly to the radio or TV in opposition to the story ‘burning’ my ears.

If forced to use a single word to describe the strategic direction of genetic research it would be precision—moving toward specific gene manipulation in which the

target gene is modified either for altered expression, correction, or to produce specific commercial molecules. You have no-doubt seen and heard that our emphasis this year is gene oriented, and genome editing beyond Cas9. The program begins with a keynote presentation by **Dr. Rachel Haurwitz**, President and CEO of Caribou Biosciences who is speaking on “CRISPR Genome Editing: Hacking the Genome to Transform the Future of Medicine, Animal Health, and Agriculture,” and daily plenary sessions that further emphasize this focus include:

- Commercial applications of genome editing
- Technology development that’s “beyond Cas9”
- Genome editing for Cassava improvement
- Ethics and societal implications of genome editing

The progress in our more traditional pursuits including micropropagation, genotype independent transformation in corn using Cas 9, and 3D animal tissue culture models are opening new areas of research as well. Speaking of molecules—a combination of genotype independent transformation and direct modification of ‘waxy’ genes gives rise to more efficient specific amylopectin starch molecules in corn for industrial use. Similarly, applied genome editing can be used to improve livestock health and well-being. There will be several opportunities for students to learn how to prepare and present their science and interact with experienced mentors during the conference. We’ll also get a chance to view new consumer products including reduced-bruising potatoes, more sustainable salmon, and a grass that requires less maintenance (can’t wait for that one!). In addition, toxicology based on in vitro methods rather than whole animal-based methods have been developed to improve efficiency and serve regulatory needs. Examples will be described which make use animal tissue cultures of pulmonary reconstructed airway epithelium and small intestine system-based reconstructed epithelium. And what about Cannabis—it’s a race to see which location(s) in the US and abroad can best adapt basic agronomy with targeted increases in bioactive medicinal

components that provide documented ingredients. Seems a little hard to imagine how critical these bioactive compounds are becoming and in a way that significantly reduces dependency risks compared to other drug choices.

I also take this opportunity to thank Marietta, fellow board members, and others who have been so gracious in providing advice, answering questions and willing to share their ‘best ideas’ during my tenure. And one last thought—each and every one of us is ‘called’ to recruit new members who can profit from the SIVB advantages of accessibility, the best science, meeting new friends, and renewing acquaintances. I’ll see you in St. Louis!

**Dwight T. Tomes, President**  
*d.tomes@icloud.com*

## SECRETARY’S REPORT

My first two-year term as Secretary of the Society is coming to a close and it seems like I just started. I guess time flies when you’re having fun....at least when you’re busy. One of the primary roles of the Secretary is to provide the minutes of the Board meetings these can be found on the Society’s website. Another function is presiding over the Teller’s Committee for all Society elections. The 2018–2020 elections have been completed and the results were announced in the January–March 2018 issue of the *In Vitro Report*.

I would like to thank the members of the Board as well as all of the members of the various committees on helping make our Society what it is today. I would also like to thank Marietta and the office staff for assistance and patience during my first term and look forward to continue to serve as Secretary for a second term.

Even though the elections are over, there are still many opportunities to be involved in the Society. If you would like to volunteer now please contact a board member or committee chair. Member participation is the best way to maintain an active and healthy Society. I look forward in seeing everyone at the meeting in St. Louis!

**Harold N. Trick, Secretary**  
*hnt@ksu.edu*

## TREASURER’S REPORT

2017 closed in a positive financial position for our society. Again this was achieved predominantly through our journals – *In Vitro – Animal* and *In Vitro – Plant*. Additional revenue streams are needed in order to increase and maintain a firm financial base for the society. The constant attention toward cost cutting made by the New Beginnings Management staff and the diligence of our Officers, Board Members, Committee Chairs and Committee Members continue to be critical factors. Our investments, held at Morgan Stanley Smith Barney, have remained stable in spite of the sometimes tumultuous ups and downs of the financial markets, and we are currently working closely with our advisor to identify an approach to investment of currently banked funds with potential for increased revenue.

However, as per statements made and repeated in recent reports from this office, identifying and obtaining the resources needed to keep us a healthy and growing society has proved to be a major challenge, not only for us but for the advancement of science overall. Two major efforts must be addressed by every member of the SIVB, not just by those on specific committees, increasing membership and fundraising. With respect to increasing membership, we must work ever more diligently in seeking new members and in bringing former members back into the fold. Creative approaches to gaining and increasing the number of donors to provide funding support for our society and its goals were initiated over the past year and have shown some level of success, providing support for the annual meeting. In 2017 an initiative was launched presenting the opportunity for emeritus members to continue showing their love and support for the society and its future through estate planning.

We are a unique society, with members from a broad range of disciplines who care and believe in the importance of our role in the future of in vitro biology. Let us therefore do all we can to ensure that future!

The Treasurer’s Summary Report can be found at the end of this Annual Report

**Barbara B. Doonan**  
*Treasurer*

*doonanbarbara@yahoo.com*



*Incoming President John Harbell enjoys learning about the dinosaurs during the 2017 Tuesday night special event.*

## BUSINESS OFFICE REPORT

The Business Office activities focused on the 2017 In Vitro Biology Meeting, 2018 In Vitro Biology Meeting, preparations for the 2019 Meeting and 2020 World Congress, publications, and membership.

### 2017 IN VITRO BIOLOGY MEETING

The 2017 In Vitro Biology Meeting was held June 10–14, 2017 at the Raleigh Convention Center and Raleigh Marriott City Center in Raleigh, North Carolina. Plans for this meeting started in 2015. This year’s meeting highlighted a Keynote presentation by **Anthony Atala, MD**, Director and Chairman of the Wake Forest Institute for Regenerative Medicine, and the W. Boyce Professor and Chair of Urology at Wake Forest University, who spoke about “Regenerative Medicine: Current Concepts and Changing Trends.” After the Keynote presentation, the 2017 Lifetime Achievement Awards were presented to **Gregory C. Phillips, PhD**, and **J. Denry Sato, DPhil, PhD**, in honor of their years of exemplary research. Also, during the Opening Ceremony, SIVB President, **Dwight T. Tomes, PhD**, presented Distinguished Service Awards to **Vadim Beilinson, PhD**;



**Vivian R. Dayeh, PhD; Michael J. Fay, PhD; Theodore M. Klein, PhD; Sergei F. Krasnyanski, PhD; Qiudeng Que; J. Pon Samuel, PhD; and Mary E. Welter** for their support of the Society and its activities. During the Plant Biotechnology Section Meeting, the 2017 Distinguished Scientist Award was presented to **Allan R. Wenck, PhD**; the 2017 Fellow Award was presented to **Kan Wang, PhD**, and the 2017 Young Scientist Award was presented to **Sukhpreet Sandhu, PhD**. During the In Vitro Animal Cell Sciences (IVACS) Section Meeting, the 2017 Fellow Award was presented to **Miho Kusuda Furue, PhD**.

This meeting began on Saturday, June 10 with an all-day workshop, “Grow with the Flow: Expand Your Applications in Biological Research with Flow Cytometry” which provided both lectures and hands-on demonstrations to both animal- and plant-focused researchers.

Special events held at the meeting included Tuesday evening’s Night at the Museum at the North Carolina Museum of Science; Wednesday Scientific tours: a tour of the Research Triangle Park and a North Carolina State University tour “An Afternoon in the Trees”; and the City of Oaks Silent Auction. Both of Wednesday’s tours were exceptionally well attended. The IVACS and PBS Oral Presentation Competitions were held along with a student poster competition. As a last minute surprise, SIVB was able to arrange for a private screening of the documentary “Food Evolution” before it had been released to the public. This was shown on Monday night after the Joint Sections Social.

The Meeting’s mobile app was configured to include information on the program, abstracts, bios and pictures of the presenters, exhibitors, contributors, a “Happening Now” button, program information, a map of the hotel, a way to upload social media and send messages to other attendees, a meeting survey, and the ability to review and take notes on uploaded presentations. New functionality this year included an updated Program-at-a-glance (including social as well as scientific events at the meeting), more detailed logos and expanded descriptions provided by the

exhibitors themselves, a virtual registration bag including pdfs all of the items SIVB prepared for the registration bag, separate quick reference pages to all the posters and all the non-scientific events, and “My Networking Connections” which provided a QR code to allow participants to connect directly through the app.

At the 2017 In Vitro Biology Meeting, the final number of registrants reached 398. There were 131 members, 20 group registrants, 11 non-members, 17 research technicians, 17 post docs, 89 student, 5 one-day, 12 two-day, 2 emeritus, 4 guests, 11 volunteer and 59 speaker registrants. There were also 2 staff registrants and 18 exhibitors. Positive circumstances that can be cited in having contributed to 2017 attendance numbers include SIVB’s solid presence in North Carolina due to the significant biotech community in which SIVB was able to reach, active solicitation of speakers from local universities by the Program Committee, our Local Organizing Committee’s reaching out to local scientists that may have not heard of us, accessibility to Group Registration Rates, and working with the NC Biotechnology Center who included us on their calendar of events.



*SIVB members explore science exhibits at the North Carolina Museum of Science.*

In addition, the SIVB Business Office prepared a grant on behalf of the Society with the North Carolina Biotechnology Center which was approved. These funds assisted in supporting the 2017 Meeting program and Student Initiative.

The Business Office offers a special thank you to the volunteers who offered their assistance during the 2017 In Vitro Biology Meeting, many of them working additional hours above what was required. We greatly

appreciate all of their efforts on behalf of the SIVB. We couldn’t have done it without your help.

## 2018 IN VITRO BIOLOGY MEETING

The upcoming 2018 In Vitro Biology Meeting will be held from June 2 – 6, 2018 at the Hyatt Regency St. Louis at The Arch in St. Louis, Missouri. Plans for this meeting began in 2016. In 2017, the Business Office began work with the Program Committee to organize the scientific sessions and determine the Keynote Speaker. They also worked with the Local Organizing Committee to make arrangements for the special events happening during the meeting. The 2018 Meeting will highlight a keynote presentation by **Rachel Haurwitz**, President and CEO of Caribou BioSciences. She will be presenting a talk on “CRISPR Genome Editing: Hacking the Genome to Transform the Future of Medicine, Animal Health, and Agriculture.” There will also be presentations of the Lifetime Achievement Awards to **John J. Finer, PhD**, and **Sandra L. Schneider, PhD**. At the Plant Biotechnology Section Meeting, **Fredy Altpeter, PhD**, and **Randall P. Niedz, PhD** will receive the SIVB Fellow Award; **J. Pon Samuel, PhD**, will receive the Distinguished Scientist Award; and **Esther E. Uchendu, PhD**, will receive the Young Scientist Award. In addition, there will be Distinguished Service Awards, student awards, student competitions and more presented at the meeting.

The 2018 Meet Me in St. Louis Silent Auction will begin during the Welcome Reception on Saturday, June 2 and will end on Tuesday morning, June 5, 2018. Attendees will also be invited to enjoy an Evening at the Anheuser Busch Grant’s Farm on Tuesday, June 5 and one of two specially-created Wednesday afternoon scientific tours: the R&D Innovation Tour visiting MilliporeSigma and the “Heart of Biotechnology Tour” visiting Donald Danforth Plant Science Center, KWS Gateway Research Center, St. Louis Community College BRDG campus, and Monsanto Company’s Chesterfield Campus.



*At the welcome reception of the 2017 Meeting, attendees used the opportunity to learn about new research while catching up with colleagues.*

Saturday, we are offering a special follow up workshop to last year's successful Saturday Flow Cytometry workshop entitled "Go with the Flow: Flow Cytometry for Genome Sizing, Editing, and RNA Targeting." This year's session will focus on various topics for targeting and gene editing with plant specific applications and requires separate advance registration to participate.

SIVB has been offering its Student Initiative Program since 2003 and we are happy to celebrate its success over the last 15 years. This year, the initiative provides free registration to all student attendees who submit an abstract at the 2018 meeting and free student 2019 student membership to those who attend the 2018 meeting. The Student Committee has organized a Student Workshop on "Publishing Academic Work: Unmasking Predatory Journals," a Networking Luncheon on "Employer Engagement," and a Non-competitive Oral Presentation Symposium during the meeting to encourage growth and participation of student members, both graduate and undergrad. Both the IVACS and the Plant Biotechnology sections will offer Oral Presentation Competitions for students and Post Docs. The IVACS section will hold a joint Post Doc/Student competition and the PBS section will present separate Student and Post Doc competitions. SIVB will also offer the Sponsor-a-Buddy program where for only \$25, members and attendees of the Annual Meeting can help support the Student Initiative for the meeting. Contributors to the Sponsor-a-Buddy-program will be acknowledged at the 2018 In Vitro Biology

Meeting. We are looking to expand this program further and this year contributors will have the opportunity to personally mentor a student attendee at the meeting.

The Business Office met with the Local Organizing Committee participating during various conference calls and assisted the committee in coordinating the preparation and dissemination of numerous advertisements to universities and organizations surrounding St. Louis and in nearby states. The Office also sent direct correspondence to companies who had strong potential interest in the organization with details on sponsoring, exhibiting and attending the meeting, as requested.

The Office also reviewed the abstract submission process and worked with the meeting's mobile app company to adjust the process to include a new step for all student authors where they are required to have their submissions approved by their supervisor or professor to alleviate any concerns of work being submitted without the co-author's knowledge or permission.

In addition, the Business Office worked with **Valerie Pence** on the first steps in establishing a new Student Award to be offered beginning in 2018, the Exceptional Plant Research Award, which provides travel funds for up to two students to attend the Annual Meeting of the SIVB in the amount of \$500 each, to present their in vitro research benefitting the long-term conservation of one or more non-agricultural, endangered exceptional species. This award will be available through 2020's World Congress.

## 2019 AND 2020 IN VITRO BIOLOGY MEETINGS

In 2017, the Business Office worked with the SIVB Board of Directors to finalize the contracts for the 2019 In Vitro Biology Meeting. Next year's annual meeting will be held in Tampa, Florida from June 8–12, 2019 at the Tampa Marriott Waterside Hotel and Marina. The SIVB has been in discussion on locations for the 2020 World Congress on In Vitro Biology and expect to finalize contracting in 2018.



## MEMBERSHIP

2017 Membership numbers increased this year by 6.12% for overall membership and 6% for Regular members. Membership initiatives included the extension of the Member-get-a-Member campaign and a special drawing for members who renewed by December 31st, 2017. The 2018 contest winners will be drawn during the 2018 SIVB Business Meeting this June and prizes include one-year of free membership in the SIVB and free registration to the 2019 In Vitro Biology Meeting in Tampa, Florida. The Business Office worked to encourage 2017 and 2018 membership renewals by including monthly notices distributed through both email and regular mail.

The Business Office regrets to inform the membership that we learned of the passing of the following members in 2017: **Chen Ho Chen** and **Gordon H. Sato**.

SIVB provides the member benefits of free job postings and discounted resume purchase opportunities through our Career Center job bank. These job listings are linked to our Facebook page providing higher visibility for your positions. Don't forget to check it out under "Employment" on the SIVB website.



SIVB also offers a number of ways to support the organization. In 2017, the Business Office worked with the Board of Directors offering the opportunity for emeritus members to bequeath charitable gifts and/or estate contributions to the Society through Qualified Charitable Distribution (QCD). Should you be interested in participating in this opportunity, please contact me at [sivb@sivb.org](mailto:sivb@sivb.org). You can also make an individual contribution to support the next generation of scientists by visiting [www.sivb.org](http://www.sivb.org), clicking on the “Donation” button at the bottom of the page, and choosing to contribute to one of available student and Post Doc funds.

SIVB’s committee activity has increased as the desire to secure the Society’s health has grown. The Business Office endeavored to assist the Committees in fulfilling both requests from the Board and action items from within the committees themselves. In addition to other activities listed, they worked with the Finance Committee in preparing and distributing correspondence to Emeritus members to encourage them to contribute to the organization; the Program and Local Organizing Committees in building press releases to expand the outreach of the meeting; the Nominating Committee in reaching out to potential candidates, collecting biographies and platform statements from candidates, preparing the online ballot, and disseminating the ballots for the 2018 – 2020 Officers and Committee Chairs elections, and following up with various Committees on other action items requiring their attention.

The Business Office worked with **John Harbell** and **Brad Upham** coordinating SIVB’s participation in the Society for Toxicology’s 57th Annual Meeting and ToxExpo which ran from March 12–14, 2018 at the Henry B. Gonzales Convention Center in San Antonio, Texas. In 2017, the Business Office was instrumental in researching the exhibit requirements, helping prepare the SIVB’s exhibit, coordinating with the exposition services company and the Society for Toxicology; organizing and preparing flyers and handouts; budgeting for the event. Final



*SIVB welcomes both members and prospective members to join us at our annual meeting.*

preparations were completed in 2018. It is hoped that SIVB may gain some additional members, meeting attendees and exhibitors from the ToxExpo participants at the conclusion of their meeting.

## PUBLICATIONS

The Business Office’s Publications Department’s supports the SIVB’s print and online publications and maintains and supports the SIVB Website.

The Publications Committee and Editorial Offices continue to work with Springer in updating the journals to be analogous with similar journals in their respective fields. In 2017, SIVB’s journals took additional steps to work toward protecting our publications from plagiarism and encouraging proper ethical behavior. SIVB’s Publications Committee had reviewed new ethical compliance requirements recommended by Springer and, in 2017, revised the instructions for authors based on the needs of each journal’s content. In addition, the *In Vitro – Animal*’s instructions were updated to provide a link to ICLAC’s Database of Cross-contaminated or Misidentified Cell lines. Both journals offer manuscript processing through Editorial Manager, which is updated as the industry’s requirements change. In 2017, we have added a new submission question addressing submission of copyright transfer forms to the *In Vitro – Animal* journal.

Both journals continue to use Ithenticate to try to prevent the publication of plagiarized materials or duplicate publication of articles. The Animal journal limits manuscripts they will review to those that have an Ithenticate score of 40% or lower.

The Plant journal has worked to address duplicate submissions including submission of the exact same article to both the IAPB and SIVB paper flows of the plant journal. While Springer cannot provide us with a watch list of authors, the Editors have taken steps to help protect the reputation of the SIVB and our journals.

The Business Office has also worked with Springer and the Publications Committee in updating the look and formatting of articles published in our journals. The goal is to allow our publications to be as modern and readable as possible in today’s market. This year’s changes included replacing the paper stock for our print issues and approving Springer’s new “Large layout format” which provides a different, but clean header font throughout the published articles among other changes. This new format has begun to show up in both journals for 2018.

Based on a request from the Membership Committee and Board of Directors, the Publications Committee has been reviewing a potential survey to track our members’ usage of the journals between print vs online access to the content as compared to prior survey data which was prepared and revised by the Business Office. This process will be ongoing in 2018.

*In Vitro – Animal*’s flow of submissions began to slow down in 2017 after the exceptional influx of papers received in 2015 and 2016. Even with a rise to our rejection rate, all issues were able to publish at or above their new higher page budget per issue from the new Springer contract. The 2016 impact factor dropped to .897. This is likely due to the higher number of papers published in the last 2 years that had one or no citations. To address this drop, Editor-in-Chief, **Tetsuji Okamoto**, worked with the organizers of the 14th International Conference on Invertebrate and Fish Cell Culture to gather submissions for a special section published in the May issue entitled “Current Topics on Invertebrate and Fish Cell Culture.” This section included 4 special papers. In addition, SIVB worked with a number of our senior members who were creating a manual on “Best Practices” in tissue culture to publish their work in the *In Vitro – Animal* journal. The premise of

these articles was to get to the nitty gritty that these experienced scientists talk about amongst themselves when doing tissue culture, but have not written down anywhere. The articles covered how one should handle a cell line from its receipt through the publication of data. These 8 articles were published in the September through November/December issues of the journal. They have been highlighted in the *In Vitro Report Journal Highlights* and special feature article. We encourage our members to read this content to see how their techniques could apply to your work. Dr. Okamoto also encourages active participation from the Associate Editors and members of the Society to publish in our journal as well as looking for suggestions for new special issues.

*In Vitro – Plant* journal’s impact factor dropped slightly to 1.024 in 2016. Editor-in-Chief, **David Duncan** had been working hard to identify ways to increase the journal’s flow of quality papers to the SIVB portion of the *Plant* journal and began to show success in meeting our page budget in the second half of 2017. The journal published a Cryobiology special issue in July–August and is currently accepting papers for a Medicinal Plants issue with a deadline for submissions in 2018. It is hoped that the Medicinal Plants issue may also help our journal’s viability to apply for inclusion in PubMed, which has been a goal of the *In Vitro – Plant* Editorial Board for a number of years. In addition, SIVB has gotten the approval to replace the standard cover image on the *In Vitro – Plant* hard copy issue covers when the Editor-in-Chief finds a particularly interesting image submitted from an accepted article in that issue.

We encourage our new and senior members to submit papers whenever possible to support the SIVB publications and share your research directly with your fellow members.

The *In Vitro Report* publishes online issues quarterly and includes information pertinent to and from our members. We encourage everyone to take an active role in this publication, especially in the SciNews and Explants sections of each issue, by sharing their personal news. Use this opportunity to provide updates on your life



*While science is key, fellowship and camaraderie are also important aspects of the SIVB.*

and career to your fellow members, such as job transitions, new publications, births, marriages, or other information you think would be of interest to your colleagues. Send your news along with a jpg picture of yourself to the Editors, **Michael Fay** and **Sylvia Mitchell**. In addition to the Member News, issues contain special articles about individual members under the Membership Profiles, Membership Matters, and new member announcements. Special Editor’s Corner articles are published by the SIVB Editors-in-Chief to share information about current publication issues of interest. This is your publication; therefore, the Report can only be useful to you as a member, if you contribute. Reach out if you have news, article suggestions or information to share with either of the Co-Editors-in-Chief, Michael Fay or Sylvia Mitchell. News can also be forwarded to [sivb@sivb.org](mailto:sivb@sivb.org).

The SIVB continues to look at ways to update the functionality of our website to keep our organization accessible to a modern audience, in addition to the meeting program and informational updates that are processed throughout the year. Social media has become an essential mechanism to share SIVB’s message and the Business Office uses many methods to reach out to our members including broadcast emails and Facebook, LinkedIn, and Twitter posts. By posting similar information to these three outlets, SIVB has allowed our members to keep up with SIVB deadlines and important information without limitations due to accessibility to certain websites while at work. If you haven’t friended us on Facebook, joined the SIVB group on LinkedIn, or started following us on Twitter

(@SIVBiology), please do so. We provide quick and timely reminders about upcoming deadlines, member benefits, and other information of interest to members throughout the year. Also, you can let people know more about SIVB just by sharing posts! Use our name and hashtags at the beginning of your relevant posts: @SIVBiology for the organization, #SIVBiology2018 for the 2018 In Vitro Biology Meeting; #SIVBIVAN for *In Vitro – Animal*, and #SIVBIVPL for *In Vitro – Plant*).

New Beginnings Management, Inc. (NBM) runs the Business Office for the SIVB and manages the daily operations of the organization. The staff of NBM consists of Michele Schultz and myself. We greatly appreciate the efforts of all those who volunteer their time on behalf of the SIVB with a special thanks to the Executive Committee, Board of Directors, Committee Chairs and Section Officers whose work so hard helping support the goals of the organization and its long term health. We are appreciative of your encouragement and support of NBM for the effort we put forth on behalf of the Society. We look forward to many more years working on behalf of SIVB as it continues to grow in the future.

The Business Office welcomes your thoughts and ideas on ways to expand our membership and grow the Society for in Vitro Biology as an organization. Please contact me directly by sending your suggestions to [elliswheat@aol.com](mailto:elliswheat@aol.com).

**Marietta Wheaton Saunders**  
*SIVB Managing Director*  
[elliswheat@aol.com](mailto:elliswheat@aol.com)



# IN VITRO ANIMAL CELL SCIENCES

The 2017 In Vitro Biology Meeting, held June 10–14 in Raleigh, North Carolina, was an resounding success, thanks to the diligent efforts of the Program Committees, Local Organizing Committee (LOC) and the SIVB Business Office: **Addy Alt-Holland** (Program Chair; Tufts University), **Joshua Gasiorowski** (IVACS Program Chair; Midwestern University), **Pon Samuel** (PBS Program Chair; Dow AgroSciences), **Sadanand Dhekney** (PBS Sr. Co-Chair; University of Wyoming), **Pierluigi Barone** (PBS Jr. Co-Chair; Dow AgroSciences), **Albert Kausch** (Education Chair; University of Rhode Island), **Elena Arthur** (IVACS Student Co-Chair; North Carolina Central University), **Whitney Harchenko** (PBS Student Co-Chair; Montana State University), **Allan Wenck** (LOC Chair; Bayer CropScience), **Marietta Wheaton Saunders** (Meeting Secretariat and Managing Director for Society for In Vitro Biology; New Beginnings Management), and **Michele Schultz** (Publications Manager for In Vitro-Animal and In Vitro-Plant; New Beginnings Management). The Local Organizing Committee included **Jeffrey Adelberg** (Clemson University), **Addy Alt-Holland** (Tufts University), **Elena Arthur** (North Carolina Central University), **Christopher Bagley** (Bayer CropScience), **Vadim Beilinson** (AgBiome), **Ming Cheng** (BASF Corporation), **Yinghui Dan** (Virginia Polytechnic Institute and State University), **Thomas Gurganus** (BASF Corporation), **Sergei Krasnyanski** (North Carolina State University), **John Lehman** (East Carolina University), **Baochun Li** (Bayer CropScience), **Hong Luo** (Clemson University), **Samson Prabhakar Nalapalli**, **Yufuko Nishimura** (Bayer CropScience), **Yongqing Niu** (Bayer CropScience), **Qiudeng Que** (Syngenta Crop Protection), **Weiming Wang** (ArborGen), and **Margaret Young** (Elizabeth City State University). Over eighty IVACS members attended the meeting, representing a unique cross-section of universities and industries, both local to the meeting venue and from around the world.



The IVACS Section Chair, Michael K. Dame (L), greets attendees at the Welcome Reception.

**Dr. Anthony Atala**, Director of the Wake Forest Institute for Regenerative Medicine, delivered a remarkable Keynote Address, Regenerative Medicine: Current Concepts and Changing Trends. He captivated the audience with his work in organ and tissue transplantation driven by recent advance in vitro biology and bioengineering.

The meeting commenced with a Saturday workshop conducted by Beckman Coulter experts, *Grow with the Flow: Expand Your Applications in Biological Research with Flow Cytometry*. Meeting presentation topics included: *Innovative Advances in Flow Cytometry and Cell Sorting for Plant & Mammalian Cells; From Single Cell Analysis to Multiplexed Screening Assays of Cell Cultures; Cell Culture Systems for Agricultural and Environmental Research; Microbiome Challenges to Scale Production; In Vitro and Silico Databases and Analysis; Scaffolds from Plants and Animals for Human Tissue Engineering; Microfluidics for Applied Biology; Exosomes/Secretomes; and Natural Products and Biologics*. In all, there were 17 IVACS symposium presentations and 4 plenary presentations. IVACS Contributed Papers broke out into 3 sessions to make room for 10 presentations. Other posters included 5 interactive posters, 23 posters, and 6 silent abstracts.

Students are an important component of the SIVB meetings. They presented an enjoyable and vigorous interactive evening symposium, Persuasive Presentations: *Tips and Techniques for Public Speaking*; a networking luncheon, *Creating Winning Resumes and CV*, a Student Affairs; an Ad Hoc Student Committees Breakfast; and a non-competitive student oral presentation session. Student and postdoctoral IVACS oral

competition were judged by **Addy Alt-Holland**, **Mae Ciancio**, **Justin Colacino**, **Michael Dame**, **Barbara Doonan**, **Michael Fay**, **John Harbell**, **Kolla Kristjansdottir**, and **Brad Upham**. **Robert Garcia** (Midwestern University) received 1st place for *Enhanced Directional Axon Outgrowth of Peripheral Nerve Fibers Using Submicron Topographic Cues and Live Cell Imaging*; **Sarah J. Poynter** (University of Waterloo) received 2nd place for *Scavenging for Bacteria: Identification and Characterization of Rainbow Trout MARCO*; and **Shawn J. Waller** (University of North Carolina) received 3rd place for *Characterizing Functional Differences in Sea Anemone Hsp70 Isoforms Using Budding Yeast*.

The IVACS Annual Business Meeting, held June 12, 2017 at the In Vitro Biology Meeting, Raleigh Conference Center. The meeting started with the recognition of the IVACS elected officers for 2016/2018 term.

- **Michael K. Dame** – Chair
  - **Joshua Z. Gasiorowski** – Vice Chair Meeting Program
  - **Kolla Kristjansdottir** – Vice Chair Membership
  - **Stephanie DeWitte-Orr** – Secretary
  - **Brad L. Upham** – Fundraising Officer
- IVACS recognized the leadership and dedication of the Board of Directors:
- **Dwight T. Tomes** – President
  - **John W. Harbell** – President Elect
  - **Sukhpreet Sandhu** – Vice President
  - **Eugene Elmore** – Past President
  - **Harold Trick** – Secretary
  - **Michael J. Fay** – Publications Chair
  - **Thomas J. Flynn** – Public Policy Chair
  - **Fredy Altpeter, John J. Finer, J Denry Sato, Brad Upham** – Members-at-large

We also recognized and thanked all of the IVACS members who helped to raise funds for the 2017 SIVB In Vitro Biology Meeting. We sincerely thanked the following sponsors for their generous financial support. **IVACS members – let’s match their example and effort where we can to build our program and future!**

- **ATCC**
- **Barbara Doonan**
- **Beckman Coulter**
- **Michael J. Fay**
- **JHarbell Consulting LLC**



- *JV Biolabs LLC*
- *Midwestern University*
- *J. Denry Sato*

One IVACS member, **J. Denry Sato**, was honored with Lifetime Achievement Award for his years of exemplary research, achievements, and pioneering contributions to the field of cell culture. We thanked the American Type Culture Collection (ATCC) for their special contributions to this award.

Two IVACS members were presented with the Distinguished Service Award, **Vivian Dayeh** and **Michael Fay**. Student awards were recognized: The 2017 SIVB Cellular Toxicology Award to **Matt Desrosiers** (Worcester Polytechnic Institute); the Joseph F. Morgan and Student Travel Award to **Matthew Guerriero** (University of Guelph); the Wilton R. Earle and Student Travel Award to **Sarah Poynter** (University of Waterloo); and Student Travel Awards to **Shanee Herrington-Krause** (Wilfrid Laurier University) and **Amanda Youssef** (Midwestern University).

IVACS should recognize another special event for 2017. **The Intel International Science and Engineering Fair** (July 2016–July 2017; see *In Vitro Report* Issue 51.3) is the world's largest international pre-college science competition, providing a forum for more than 1,500 high school students from over 40 countries to showcase their independent research. Over 100 students received SIVB certificates and letters of recognition for projects related to the areas of *in vitro* biology. At the North Central State Science & Engineering Fair **Gregory Johnson** (Burnsville, Minnesota) was awarded Best Exhibit from SIVB was for *The Potential Antimicrobial Capabilities of Common Home Remedies*.

**The 2018 SIVB In Vitro Biology Meeting**, returns to St. Louis, Missouri on June 2–6. We anticipate an outstanding program due to the efforts of the meeting leadership and session conveners; **David D. Songstad** (Program Chair), **Joshua Gasiorowski** (IVACS Program Chair), **Sadanand Dhekney** (PBS Program Chair), **Piero Barone** (PBS Sr. Co-Chair), **Raj Deepika Chauhan**, (PBS Jr. Co-Chair), **Albert Kausch** (Education Chair), **Tristen D. Wright** (IVACS Student Co-Chair),

**Foaziatu Bukari** (PBS Student Co-Chair), **Marietta Wheaton Saunders** (Meeting Secretariat), and the Local Organizing Committee, **Charles L. Armstrong**, **Piero Barone**, **Mike Boyer**, **Brad Castanho**, **Raj Deepika Chauhan**, **Kevin Cook**, **Jean Layton**, **Mary Ann Saltarikos**, **Sukhpreet Sandhu**, **Vladimir Sidorov**, **David Stanley**, **Shubha Subbarao**, **Nigel J. Taylor**, **Veena Veena**, **Dannette Ward**, **Ningning Zhang**, and **Zhanyuan J. Zhang**.

**2018–2020 IVACS officers.** We would like to welcome and thank the upcoming IVACS officers for their continued dedication and service to SIVB: **Kolla Kristjansdottir** (Midwestern University) for Chair, **Mae J. Ciancio** (Midwestern University) for Vice-chair Meeting Program, **Andrew W. Truman** (University of North Carolina) for Vice-chair Membership, and **Matthew Desrosiers** (Worcester Polytechnic Institute) for Secretary. In the same spirit, IVACS would like to sincerely thank **Marietta Wheaton Saunders** (Managing Director), **Michele Schultz** (Publications Manager), and the entire staff of New Beginnings Management for their constant work to execute the daily functions of SIVB and to make possible our annual meetings.

**Future role of IVACS.** The 2017 Keynote speaker, **Anthony Atala**, eloquently showed the vital role of continually emerging *in vitro* discoveries. His presentation truly exemplified the translational importance of the cutting edge synergy between *in vitro* biology, material science and bioengineering. **Robert Whitehead** (now at Vanderbilt University) published in the IVACS flagship journal, *In Vitro Cellular & Developmental Biology*, in 1987 a method to isolate individual crypts from human colon mucosa to culture in a three-dimensional collagen gel. Recently this technique laid the ground work for the organoid culture model, which itself was named the 2017 Method of the Year (Nat. Methods). The *In Vitro Animal Science* Section is ideally positioned to serve as a platform to engage the scientific community with this exciting attention on the field of *in vitro* biology.

**Michael K. Dame**  
*In Vitro Animal Cell Sciences*  
 Section Chair  
 mdame@med.umich.edu

## PLANT BIOTECHNOLOGY

The 2017 *In Vitro Biology* was held from June 10th–14th at the Raleigh Convention Center located in Raleigh, NC. The Keynote speaker **Anthony Atala** (Wake Forest Institute) provided an engaging cutting edge talk titled “Regenerative Medicine: Current Concepts and Changing Trends”. Following the joint sections’ social on Monday was a special pre-screening presentation of “Food Evolution,” a documentary from the Academy Award®-nominated director **Scott Hamilton Kennedy** that is narrated by the science communicator **Neil deGrasse Tyson**. The film’s focus was to separate the publicity from the science in the polarized debate that is incited by gross misperception surrounding GMOs and food.

Prior to the start of the conference an all day workshop titled “Grow with the Flow: Expand Your Applications in Biological Research with Flow Cytometry” sponsored by Beckman Coulter was well attended. **Pon Samuel** was the moderator of the workshop that included demonstrations and presentations by **Sarah Schuett** (NCSU), **Dharlene Tundo** (Vitaquest) and **Emily Wear** (NCSU).

The 2017 Plant Biotech Section Program Planning Committee did an excellent job in providing a diverse and cutting edge program. The committee was lead by **Pon Samuel** (Program Chair), **Sadanand Dhekney** (Sr. Co-Chair) and **Piero Barone** (Jr. Co-Chair). Plenary Symposia included ‘Innovative Advances in Flow Cytometry and Cell Sorting for Plant and Mammalian Cells’, ‘Microbiome Challenges to Scale Production’ ‘Scaffolds from Plants and Synthetic Materials for Human Tissue Engineering’ and ‘Natural Products and Biologics’. There was a total of nine Plant symposia included such diverse topics such as ‘Cannabis: Past, Present and Future’, ‘Biosafety Best Practices for GMOs and Regulatory Challenges with Genome Editing’, ‘Regulatory Protocols for Transgenic Crops-Assessing Pollen-Mediated Transgene Flow in Annual and Perennial Crops’, ‘Practical Media

Improvement Using DOE: Case Study Comparisons of a Commercially Available MS Media Improvement Kit', 'Medicinal Plants', and a workshop titled 'Workshop on Cannabis Best Practices and Regulation'. In addition there were the interactive poster sessions and student workshops.

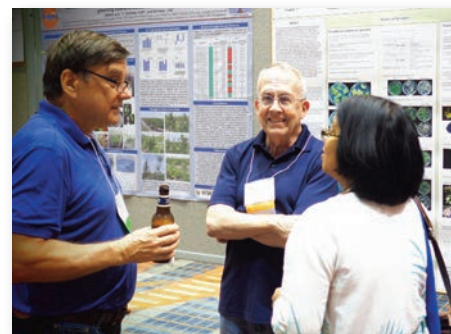
**Jeff Beringer** and **Piero Barone** coordinated the Student and Post-Doctoral Oral Competitions, respectively. The Student Oral Competition, judged by **Nancy Reichert**, **Michael Kane** and **Randall Niedz**, awarded first place to **Kerri Neughbauer** (Kansas State University), second place to **Quang T. Nguyen** (University of Queensland), and third place to **Megan Philpott** (Cincinnati Zoo & Botanical Garden). The Post-Doctoral Oral Competition, judged by **Prakash Kumar**, **Dennis Gray** and **Daniel Bergey**, awarded first place to **Bin Tian** (Kansas State University), second place to **Anne-Catherine Vanhove** (Cincinnati Zoo & Botanical Garden), and third place to **Ratna Karan** (University of Florida). **Jordan Brungardt** and **Matt Desrosiers** moderated a Non-competitive Student Oral Presentation.

At the SIVB opening ceremony acknowledgments were provided to those who received the Distinguished Service Awards for their commitment and service to the society. Recipients included **Vadim Beilinson** (AgBiome), **Vivian Dayeh** (U. of Waterloo), **Michael Fay** (Midwestern University), **Theodore Klein** (consultant), **Sergei Krasnyanski** (North Carolina State University) **Quidend Que** (Syngenta) **Pon Samuel** (Dow AgroSciences), and **Mary Welter** (consultant). The 2017 Lifetime Achievement award was presented to **Gregory Phillips** (Arkansas State University) in recognition for his outstanding efforts to the Society, his scientific contributions to many in vitro culture systems, and his editorial services to Plant Cell Reports and In Vitro Cellular and Developmental Biology – Plant. Dr. Phillips' research has focused on the development and application of cell genetics and biotechnology to improve crop plants. At the SIVB PBS business meeting acknowledgments were given for the Young Scientist award to **Sukhpreet Sandhu** (Bayer Vegetable Seeds), the Distinguished Scientist award to **Allan Wenck** (Bayer Crop Science) and the Fellow award to Kan Wang (Iowa State University).

Despite a reduction in the number of agricultural biotechnology companies that historically have supported the plant section of SIVB, fund raising efforts were successful in generating \$44,001 for the SIVB Plant Activity Fund (an increase over last year). Companies donating to the Plant Activity Fund include the old standbys and several new and up and coming companies. Companies to be recognized include AgBiome, Agristarts, Ball Horticultural Company, Bayer CropSciences, Bayer Vegetable Seed, Canopy Growth Corp., Corteva, Cotton Incorporated, Council of Biotechnology Information, Dow Agrosciences, Duarte Dry Creek Labs, Dupont Pioneer, Meristematic Inc., Monsanto, Precision Biosciences, Syngenta and The Scotts Miracle Grow Co. A grant from the USDA-Biotechnology Risk Assessment Grant Program (BRAG) provided an additional \$12,300 (submitted by **Sadanand Dhekney**). Also, individual donations continue to provide much needed financial support to the society. A total of \$92,201 in funds was secured through fund raising for all SIVB funds and activities.

As the journal *In Vitro – Plant* generates a significant source of revenue for the society, I would strongly encourage all Plant Biotechnology section members to consider submitting manuscripts for publication. **Dave Duncan** is the current Editor and is welcoming new manuscripts to review. For those wishing to share personal achievements with the society, **Sylvia Mitchell** is looking for input for the In Vitro Report Explants.

The 2018 In Vitro Biology Meeting will be held June 2nd through June 6th in St. Louis, MO at the Hyatt Regency St. Louis at the Arch. The 2018 Plant Biotechnology Section Program Planning committee consists of **Sadanand Dhekney** (Program Chair), **Piero Barone** (Sr. Co-Chair) and **Raj Deepika Chauhan** (Jr. Co-Chair). The four plenaries will focus on genome editing, as will many of the plant plenaries. Plant plenary topics are as diverse as 'Cannabis Genomics' to 'GLP for High-Throughput Plant Production Systems'. We will be fortunate to hear the latest on CRISPR technology from **Rachel Haurwitz** (Caribou BioSciences) as she will highlight some of the cutting-edge areas of research and product development for CRISPR in ex vivo cell therapies and livestock breeding.



*Plant Biotechnology members use the poster sessions and social event to learn more about each other.*

In addition another flow cytometry workshop scheduled for June 2nd will provide opportunities for attendees to learn about state of the art techniques on flow cytometry for gene editing and RNA targeting purposes. Beckman Coulter is the corporate sponsor for this workshop. The workshop should provide for ample opportunities for intellectual interaction with your fellow scientists around the use of flow cytometry.

It takes a huge commitment and lots of volunteer hours to put together a scientific program that is diverse and innovative for the meetings each year. There's not enough space to describe the commitment and dedication I've witnessed by the PBS program planning committee members that I've had the pleasure to work with the last two years. I personally would like to provide a special thanks to **Pon Samuel** (2017 PBS Chair), **Sadanand Dhekney** (2017 PBS Sr. Co-Chair/2018 PBS Chair), **Pierluigi (Piero) Barone** (2017 Jr. Co-Chair/ 2018 Sr. Co-Chair, and **Raj Deepika Chauhan** (2018 Jr. Co-Chair) for all their hard work to provide such a diverse and engaging meetings.

There will be a new slate of officers taking over at the 2018 meeting. **Randall Niedz** will be the new PBS Section Chair, **Jeff Beringer** the PBS Section Vice Chair and **Jessica Rupp** as PBS Secretary/Treasurer. On behalf of myself and the outgoing PBS officers **Ming Cheng** (Vice Chair) and **Mary Ann Saltarikos** (Secretary/ Treasurer), I would like to welcome the new officers and wish them much success in their new roles.

**Mary Welter**

*Plant Biotechnology Section Chair*

*Me\_welter@att.net*



# HISTORY AND RECORDS

The History Society was established in 1979 at the Seattle Washington Tissue Culture Association (TCA) meeting as the Records and Historical Committee. The charge of the committee is to preserve historical information concerning the growth, maintenance and *in vitro* experimental use of cells, tissues and organs. The History Society, in conjunction with the Records and Historical Committee oversees contributions to the SIVB archives located in the main library of the University of Maryland, Baltimore, MD. This archived material is available to all that would like to acquaint themselves with the history of tissue culture and scientific application to *in vitro* biology.

Members of the History Society and Records Historical Committee include: **Sandra L. Schneider** (Chair), Research & Clinical Laboratory Systems; **Gertrude C. Buehring** (Co-Chair), University of California, Berkeley; **Barbara B. Doonan**, New York Medical College.; **Ian Freshney**, University of Glasgow; **Cynthia L. Goodman**, U.S. Department of Agriculture, ARC, Biological Control of Insects Research Laboratory; **Leonard Hayflick**, University of California, San Francisco; **Wallace L. McKeehan**, Center for Cancer & Stem Cell Biology Institute of Biosciences and Technology (IBT) Texas A&M Health Science Center, Houston, TX; **Tetsujo Okamoto**, Department of Molecular Oral Medicine and Maxillofacial Surgery, Graduate School of Biomedical Sciences, Hiroshima University, Japan; **Jon Ryan**, Consultant Wheaton; **Yvonne Reid**, American Type Culture Collection and Global Biological Standards Institute (GBSI) Cell Authentication; **Denry Sato**, Manazar Project Foundation, and **Guy Smagghe**, Ghent University, Belgium.

The History Society and Records History Committee nominated and supported the 2017 Lifetime Achievement Award for **J. Denry Sato**, D.Phil and SIVB Fellow status for **Miho Kusuda Furue**, DDS, PhD. Dr. J. Denry Sato, Scientist of the Manazar Project Foundation and Emeritus Editor-In-Chief of *In Vitro Cellular & Developmental Biology/Animal* was honored for his pioneering contributions to the field of *in vitro* biology and applications to human disease and cancer treatment. Dr.

## THE LIFETIME ACHIEVEMENT AWARD

*The Lifetime Achievement Award, initiated in 1991, is the highest award given by the Society to those scientists who have achieved academic excellence in their field of study; to honor those who have made significant contributions to the field of in vitro biology and/or in the development of novel technologies that have advanced in vitro biology. The emeritus scientists that have been recognized and received the Lifetime Achievement Award to date include:*

NAME	YEAR	NAME	YEAR
Richard G. Ham, PhD	1991	Vimla Vasil, PhD	2007
Toshio Murashige, PhD	1991	Indra K. Vasil, PhD	2007
Judah Folkman, MD	1992	Jack M. Widholm, PhD	2008
Folke Skoog, PhD	1992	Toyoki Kozai, PhD	2009
Leonard Hayflick, PhD	1995	Glenn B. Collins, PhD	2009
Nelly Auersperg, MD, PhD	1997	Christopher J. Bayne, PhD	2009
Katherine K. Sanford, PhD	1997	Masayoshi Namba, MD	2009
Joseph Leighton, PhD	1998	Peggy G. Lemaux, PhD	2010
Sergey Fedoroff, PhD	1999	Wilf A. Keller, PhD	2010
James L. Vaughn, PhD	2000	Donald E. Ingber, PhD	2010
Atsushi Komamine, DSc	2000	Niels C. Bols, PhD	2012
Jun Mitsuhashi, PhD	2000	Wallace L. McKeehan, PhD	2012
Karl Maramorosch, PhD	2001	William J. Smith, PhD	2013
June A. Bradlaw, Ph.D.	2001	Paul J. Price, PhD	2013
Ian Freshney, PhD.	2001	Michael E. Kane, PhD	2014
Sadar S. Sohi, PhD.	2002	David W. Barnes, PhD	2014
Gordon A. Sato, Ph.D	2002	Gertrude Case Buehring, PhD	2015
Thomas Grace, PhD	2004	Delia Bethell, PhD	2015
Trevor Thorpe, PhD	2004	Eugene Elmore, PhD	2016
Walter Nelson-Rees, PhD	2004	Yvonne Reid, PhD	2016
Oluf Gamborg, PhD	2005	J. Denry Sato, DPhil	2017
Robert Langer, ScD	2005	Gregory C. Phillips, PhD	2017
Wei-Shou Hu, PhD	2006	Sandra L Schneider, DrPH*	2018
Bob Conger, PhD	2006	John J. Finer, PhD*	2018

\*Nominated

Sato pioneered the development of serum-free media specific for hybridoma and stem cell culture. This work led to the discovery of the epidermal growth factor (EGF) signaling pathway for proliferation and differentiation of normal and cancer cells, as well as cell selection based on cholesterol autotrophy. The product of this technology was the first FDA approved monoclonal antibody to human EGF receptor (Erbix/Certuximab) to treat advanced colon cancer. The award for Dr. Sato was generously funded by the American Type Culture Collection (ATCC).

Dr. Furue, DDS, PhD, Project Leader, Laboratory of Stem Cell Cultures, National Institutes of Biomedical Innovation, Health and Nutrition was recognized with SIVB Fellow status for her regenerative medical research on the culture, development, and application of pluripotent stem (iPS) cell technology. Award

travel for Dr. Furue was generously funded by the Nikon Corporation.

The History Society recognizes the passing of Dr. Gordon H. Sato, emeritus pioneering scientist, mentor and lifetime friend to his many Society colleagues.



**Dr. Gordon Hisashi Sato**  
(December 24, 1927–March 31, 2017)

Dr. Gordon H. Sato, an innovator in mammalian tissue culture and integrated cellular physiology, passed away in 2017. In tribute to Dr. Sato, a collection of invited remembrances from six colleagues whose associations with Dr. Sato spanned more than 40 years was published as. *A tribute to Dr. Gordon Hisashi Sato (December 24, 1927-March 31, 2017)*. Sato JD, Okamoto T, Barnes D, Hayashi J, Serrero G, McKeehan WL. *In Vitro Cell Dev Biol Anim*. 2018 Mar;54(3):177-193. doi: 10.1007/s11626-018-0230-1. Dr Sato was a past president of the Tissue Culture Association (now the Society for In Vitro Biology), editor-in-chief of *In Vitro Cellular and Developmental Biology* (1987–1991), and the recipient of the lifetime achievement award from the Society for In Vitro Biology (2002). He was elected to the US National Academy of Sciences in 1984.

**Sandra L. Schneider**  
*Records and Historical Chair*  
drsandra@stic.net

## STANDING COMMITTEES

### AWARDS

The Awards Committee consisting of **Mary Welter** (Chair, Plant Biotechnology Sciences), **Ming Cheng** (Vice Chair, Plant Biotechnology Sciences), **Michael Dame** (Chair, In Vitro Animal Cell Sciences), **Kolbrun Kristjandottir** (Vice Chair, In Vitro Animal Cell Sciences) and **Maria M. Jenderek** (Chair) discussed and recommended for approval SOP for the Life Achievement Award. The approved by the Board of Directors SOP outlines eligibility criteria, fundraising requirements for Life Achievement Awards nominators (to cover the awardee expenses to attend the award ceremony) and the time frame for the nomination process. The Committee made efforts to inspire all Society members to nominate accomplished colleagues and the response was very positive. The Committee would like to express a deep appreciation to all Nominators and congratulate the 2017 Awardees; job well done and the awards truly deserved. The Society has outstanding members who make our organization successful and of interest to young scientists and students. The awards criteria are posted at the SIVB website <https://sivb.org/awards.html>

### 2017 Awards

#### *Lifetime Achievement Awards*

Dr. J. Denry Sato (IVACS) and Dr. Gregory Phillips (PBS) won the 2017 Life Achievement Award.

**Dr. J. Denry Sato** received his Doctorate of genetics from Oxford University, UK, was a postdoc in Dr. Gordon H Sato group at University of California San Diego, and then worked at numerous locations including Cold Spring Harbor biological laboratory, Beckman Research Institute, W. Alton Jones Cell Science Center, Mt. Desert Island Biological Laboratory and at ATCC. Dr. Sato has a long list of scientific achievements including the development of media and growth conditions for hybridoma and stem cells, development of first neutralizing anti-EGFR, characterized VEGF, and helped produce FDA approved monoclonal antibody for human colon cancer treatment (Erbix/certuximab). Dr. Sato has 100 peer-reviewed articles, 5 patents, and 14 genbank submissions. He served as an Ad hoc reviewer for numerous journals including PNAS, Journal of Immunology Methods and Journal of Cellular Physiology. Dr. Sato has received numerous awards including the national research service award, institute of general medical scientists and SIVB senior investigator, fellow and distinguished service awards. Dr. Sato has been extraordinarily active in SIVB since 1985 including but not limited to serving as the reviewer, associate editor, editor-in-chief, emeritus editor in chief of *In Vitro Cellular and Developmental Biology-Animal journal*, SIVB board of directors, world congress scientific advisory board, program committee, symposium contributor, and history and records committee.

**Dr. Gregory Phillips** was an early leader in legume tissue culture. He developed a comprehensive tissue culture system for red clover, including legume basal medium L2, micropropagation, somatic embryogenesis, meristem-tip culture for virus elimination, immature zygotic embryo rescue to recover interspecific hybrids, and cell suspension culture. He was an early adopter of the use of picloram as a synthetic auxin in plant tissue culture. At New Mexico State University, he developed or refined micropropagation, plant regeneration and

gene transfer systems for onion, chili pepper and tomato. His lab also worked with desert willow, pecan, cacti, peanut, cotton, alfalfa, and soybean. At Arkansas State University, he maintained a small research program on rice biotechnology, rice microbiome, and soybean haploids. While at New Mexico State University, Dr. Phillips held a series of part-time administrative roles in research, graduate education and department development. At the Arkansas State University he served as Dean of the College of Agriculture and Technology for eight years before returning to the faculty. He has served as Vice President of the SIVB, and served as an officer for the NMSU chapter of the honor society Gamma Sigma Delta. Dr. Phillips was active for over 20 years as an editor for the journal *Plant Cell Reports*, and served as acting managing editor when managing editor Oluf Gamborg was away from the office. In 1999–2007, he assumed the role of editor-in-chief for the society-based journal *In Vitro Cellular and Developmental Biology – Plant* after serving as an associate editor. Dr. Phillips established the first functioning editorial board for *In Vitro Plant*, advocated publishing the IAPTC/IAPB newsletter as part of *In Vitro Plant*, and was involved in transitioning from a self-published journal to one offered through Springer, which has strengthened the financial viability of the journal. He coordinated the development of an updated editorial scope for the journal with peer review criteria for each category. In 2004, Dr. Phillips was inducted as a Fellow of the Society for In Vitro Biology.

#### *Fellow Awards*

Dr. Miho Kusuda Furue (IVACS) and Dr. Kan Wang (PBS) won the Fellow Awards.

**Dr. Miho Kusuda Furue** holds degrees as Doctor of Dental Surgery (DDS) and a PhD in Dentistry, Maxillofacial Surgery, Hiroshima University and is a licensed Dentist. Dr. Furue has been active in the Japanese Tissue Culture Association since 1988 and in SIVB member since 1994. She has been awarded the SIVB Distinguished Award for demonstrated service to the Society. She has also been a member of board of directors for JTCA since 2005. Dr. Furue has over 58 original publications, 9 reviews, 5 book chapters and 13 platform presentations. She holds 6 patents with



several pending patent application on the developmental of stem cell technology. Dr. Furue is an expert on embryonic stem cells and induced pluripotent stem cell culture and differentiation. She modified a pre-existing serum free medium for mouse myeloma cells and created a feeder cell-free culture system that supported the pluripotency and proliferation of mouse embryonic stem cells for over 200 population doublings. Subsequently, Dr. Furue modified the mouse serum- and feeder-free ES medium for use with human ES cell lines. This medium can also be used to propagate pluripotent human cells (iPSC) derived by reprogramming differentiated cells. Dr. Furue made significant scientific achievements in the field of stem cell culture. She has been an active of the Japanese Tissue Culture Association since 1988 and active as a SIVB member since 1994. Dr. Furue has been instrumental in maintaining and supporting the SIVB international scientific relations with the European and Japanese Associations.

**Dr. Kan Wang** is widely recognized as a noted pioneer and world expert on the mechanisms of *Agrobacterium tumefaciens* and *Agrobacterium* plant transformation of monocot and dicot crops. Dr. Wang is the editor of the highly regarded and widely used book *Agrobacterium* Protocols. She leads multiple roles at Iowa State University (ISU) that includes Global Professor of Biotechnology, Professor of Agronomy, Co-Director of the Crop Biotechnology Center, Director of the Center of Plant Transformation/Plant Science Institute and Director of the Plant Transformation Facility (PTF). PTF has served globally over 200 research groups from 17 countries and its robustness has supported many research projects that have led to significant advances in genomic research. Dr. Wan has published a total of 72 peer-reviewed original articles, 18 book chapters, 4 proceedings and 3 books for which she was author, co-author or corresponding author. Dr. Wang has recruited and mentored many students as faculty member of four interdepartmental graduate programs at ISU. She has mentored 15 PhD/MS graduate students, supervised 31 scientific and professional staff, trained 14 undergraduate student interns, trained 18 international visiting scholars and co-mentored 39 undergraduate students from Midwest non-research colleges and historic

black colleges. Her outreach to the scientific community includes being on the editorial board for five international journals, faculty expert to the World Food Prize Youth Institute and contributed to many workshops in the public education of plant genetic engineering. Dr. Wang has been an active member of SIVB for 13 years and has served it in many capacities. She has served as PBS Program Chair, Senior Co-Chair, and Jr. Co-Chair from 2009-2011, the Awards Committee Chair 2014-2016, member of the Program Committee 2005-2006 and has contributed as author and reviewer for the Journal In Vitro Cellular and Developmental Biology-Plant.

### ***Distinguished Scientist Award***

Dr. Allan Wenck won the 2017 Distinguished Scientist Award.

**Dr. Allan Wenck** received his Master of Science from University of Tennessee, Knoxville TN and his PhD in Biological Sciences from University of South Carolina. He received his JD from North Carolina Central University in 2013. Dr. Wenck has been employed by three plant biotechnology companies since 1998. First at Syngenta, he was a Scientist and team leader and developed pipeline level transformation activities in maize, wheat, rice and barley and establishing fluorescent tools for developing transformation technologies in multiple crops. At BASF he was team leader involved in transformations in maize, soybean and other crops and developed new non-GM rice with resistance to multiple ACCase inhibitors. Most recently, at Bayer Crop Sciences he serves as a team leader of 60 scientists covering all aspects of transgenic plant production from vector design through to seed hand off for field studies. Dr. Wenck has 11 publications and 2 patents. Dr. Wenck has been actively involved in SIVB as Vice President for the society, Co-chair plant section, Senior co-chair of plant section, local organizational chair for 2017 meeting, co-convener for 7 symposiums and helped raise over \$150,000 as VP and Jr-co chair. He has also been associate editor for the In Vitro Plant journal. Dr. Wenck has extensive scientific accomplishments at biotechnology companies and has helped improve the science that is needed to generate novel products through development of alternative

selection methods and higher efficiency approaches to transformation.

### ***Young Scientist Award***

Dr. Sukpreet Sandhu won the Young Scientist Award.

**Dr. Sukpreet Sandhu** received her Master of Arts in Biochemistry from Punjab Agricultural University in India and her PhD in plant genetics from University of Florida. She has served as a research assistant in rice research at Punjab University and at University of Florida, she studied transgenic grasses under the direction of Dr. Fredy Altpeter. She is currently a Scientist at Bayer Crop Sciences where she works on vegetable seeds and cell biology techniques to fast track breeding programs in vegetable crops. Recently, she spent 6 months in Mannheim Germany on special assignment for her company. Dr. Sandhu has received several graduate student awards from the University of Florida and Punjab University. She has 11 publications and 2 patents. She received a travel award, volunteered at the meeting and received 2nd place in the graduate student poster competition. She has received the SIVB distinguished service award. She served as plant program co-chair in 2014, plant program chair 2015 and serves as Vice President for In Vitro Biology 2016-2018. She also was able to help obtain a NIFA-BRAG grant in support of SIVB sessions. This young scientist has 11 publications and is responsible for managing her department at Bayer Crop Sciences. Dr. Sandhu has taken an active role in SIVB since a graduate student earning her way up the ranks to Vice President for In Vitro Biology.

The evaluating committee this year consisted of **Pamela Weathers** (Chair), **Vivian Dayeh**, **Argelia Lorence**, **Sylvia Mitchell**, and **Cindy Goodman**. The SIVB Student Award Program provides recognition and financial support for students who have contributed and made outstanding achievements in the field of in vitro biology. The following awards were presented at the 2015 meeting. The **Wilton R. Earle** and **Student Travel Awards** were presented to **Sarah Poynter**, University of Waterloo, for "Scavenging for Bacteria: Identification and Characterization of Rainbow Trout MARCO." The **Philip R. White Award** was given to **Michelle McKee**, Worcester

Polytechnic Institute, for “A Novel Approach to Cell Selection from Taxus Plant Cell Culture via an Engineered Mammalian Caspase”. The **John S. Song Award** was given to **Lauren Erland**, University of Guelph for “A New Balancing Act: Melatonin and Serotonin as Mediators of Plant Morphogenesis”. The **Honor B. Fell** and **SIVB Travel Awards** were presented to **Cassandra Downey**, University of Guelph for “Micropropagation of *Miscanthus x giganteus* ‘Illinois’: Improved Regeneration Capacity of Callus Cultures and Optimized Microrhizome Development of in Vitro Plantlets”. The **Cellular Toxicology Award** was presented to **Matt Desrosiers**, Worcester Polytechnic Institute, for “Absorption and Distribution of the Antimalarial Drug Artemisinin Delivered Orally as Dried Leaves of *Artemisia annua*”. The **Hope E. Hopps** and **Student Travel Awards** were given to **Neelam Negi**, Jawaharlal Nehru University, for “Overexpression of AhCuZnSOD and Pyramiding of AhCuZnSOD with the AhcAPX Gene Enhance Salinity and Dehydration Stress in *Brassica juncea*”. The **Joseph F. Morgan** and **Student Travel Awards** were given to **Matthew Guerriero**, University of Guelph, for “The First Wave of Inflammation: Elucidating the Ability of AF and NP Cells to Respond to IVD Herniation Triggered Damage”. Student Travel Awards were given to **Whitney Harchenko**, Montana State University, for “RNAi Knockdown of Potato Genes Crucial for Potato Virus Y Replication”; to **Shanee Herrington-Krause**, Wilfrid Laurier University, for “Identifying Cytoplasmic DNA Sensors, DHX9 and DDX3, in Rainbow Trout”; to **Benham Tabatabai**, Morgan State University, for “Enhancement of halotolerance in *Fremyella diplosiphon* by electroporation-mediated overexpression of malate dehydrogenase gene”; and to **Amanda Youssef**, Midwestern University for “The Influence of Defined Extracellular Geometries on Mammalian Transgene Expression”. Certificates were presented at the SIVB Business Meeting on June 13, 2017 to honor these exceptional students.

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**Pamela J. Weathers**  
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## 2017 Award Winners



*Left image: Lifetime Achievement Award Winer J. Denry Sato (center) is congratulated by (L to R) Tetsuji Okamoto, Ahn Lee, Sandra L. Schneider, and Miho Furue.*

*Right image: Lifetime Achievement Award Winner Gregory Phillips (L) is congratulated by Baochun Li (R)*



*Left image: Mary Welter (L) presents Allan Wenck (R) with the 2017 SIVB Distinguished Scientist Award.*

*Right image: Kan Wang accepts the 2017 SIVB Fellow Award.*



*The Distinguished Services Award Recipients included: (top row, L to R) Sergei Krasnyanski, Ted Klein, J. Pon, Samuel, Mary Welter; (bottom row, L to R) Vivian Dayeh, and Michael Fay.*

*(Bottom Row, Far right images) Student poster competition winners included Eric Dean (L) and Kevin Piumno (R).*



*Pam Weathers (L) and Dwight Tomes (far right) congratulate the student award winners (from L to R) Benham Tabatabai, Michelle McKee, Amanda Youssef, Neelam Negi, Matthew Guerriero, Shanee Herrington-Krause, Sarah Poynter, Lauren A. E. Erland, Matthew Desrosiers, Cassandra Downey, and Whitney Harchenko (insert).*



## CONSTITUTION AND BYLAWS

In 2017, no items were brought to the Constitution and Bylaws Committee either by the Board of Directors or members of the Society. Since not all members are able to attend the June committee meetings in person, should you wish to suggest improvements to our governing documents and volunteer to assist in preparing recommendations, you may reach out to the Committee Chair with your thoughts.

**Theodore Klein**  
*Constitution and Bylaws  
Committee Chair*  
[theomklein@gmail.com](mailto:theomklein@gmail.com)

## DEVELOPMENT

The Development Committee helps to secure financial support for the society. In 2017, the core members of this team included **Piero Barone**, **Sadanand Dhekney** and **Sukhpreet Sandhu** (Chair). This core team was supported by IVACS and PBS members who helped to generate contributions for the 2017 In Vitro Biology Meeting. Piero made an outstanding effort by actively identifying prospective donors and working with SIVB members to gain support from companies. We received contributions from 23 companies 10 individuals contributions. We generated \$92,201. in contributions. Kudos to a marathon effort by Piero in raising this support for SIVB . A big part of this success came from grants. Sadanand secured a USDA grant, and Marietta Saunders secured a grant from The North Carolina Biotechnology Center. Another remarkable contribution was secured by **Pon Samuel** and **Mary Welter** from Beckman Coulter for a Flow Cytometer Workshop. Not only is the workshop a great addition to the In Vitro Biology program, but such a partnership with key companies could be a model to generate funding for SIVB in the future. Great job Pon and Mary!

The core team heavily relied on support from the Local Organizing Committee, led by **Allan Wenck** (also past-Vice President, SIVB). Allan had set the stage with a solid contribution in 2016. In 2017, we expected a challenging environment considering major consolidations in the Ag Industry and overall a tough market environment, the impact of

which is evident from smaller contributions coming from big Companies. Nevertheless, we were able to generate interest from small companies, e.g. Duarte Dry Creek Labs, Agristarts. We have been very fortunate to have members like **David Songstad**, whose continued efforts to rally support for the Society has helped us tremendously. We appreciate the support from several individual contributors who have been long time members of SIVB. It goes to show their commitment and belief in SIVB's mission. We continue to urge SIVB members to help in this pursuit. We appreciate your ideas for alternate sources of funding and relying on your networks. We are trusting on support from all SIVB members to help us secure a thriving future of SIVB.

Support for SIVB came from the following funding sources: AgBiome, AgriStarts, ATCC, Ball Horticultural Company, BASF Corporation, Bayer CropScience, Bayer Vegetable Seeds, Beckman Coulter, Cotton Incorporated, Council of Biotechnology, Dow AgroSciences, Duarte Dry Creek Labs, DuPont Pioneer, Hort Americas, JHarbell Consulting LLC, JV Biolabs, Monsanto Company, National Anti-Vivisection Society, International Foundation for Ethical Research, Precision Biosciences, Syngenta, and The Scotts Miracle Grow Company. Grant funding from USDA Biotechnology Risk Assessment Grant Program (BRAGP) and the North Carolina Biotechnology Center. Individual contributors are: Barbara Doonan, Dwight Tomes, J. Denry Sato, Michael Fay, Ming Cheng, Nancy Reichert, Pamela Weathers, Robert and Gale Lawrence, Timothy Burcham, and Wayne Parrott.

**Sukhpreet Sandhu, Development  
Committee Chair**  
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## EDUCATION

The Education Committee has the task to further the educational goals of the Society for In Vitro Biology (SIVB). Over the years, the committee has worked together with the Student Affairs Committee to provide a number of engaging events at the SIVB annual meeting. The following is a highlight of events from 2017 and upcoming events at the 2018 Annual Meeting.

The Education Committee includes an outstanding group of participants. The Committee is currently under the chairmanship of **Albert Kausch**, University of Rhode Island, and includes: **Addy Alt-Holland**, Tufts University; **Daniel J. Barnes**, Mississippi State University; **Yinghui Dan**, Virginia Polytechnic Institute And State University; **Vivian Dayeh**, University of Waterloo; **Michael E. Kane**, University of Florida; **Sylvia Adjoa Mitchell**, University of the West Indies; **Kerri Allison Neugebauer**, Kansas State University; **Valerie C. Pence**, Center for Conservation and Research of Endangered Wildlife; **Jessica L. Rupp**, Montana State University; **James J. Sadler**, University of Florida; **Carol M. Stiff**, Kitchen Culture Kits, Inc; and, **Margaret M. Young**, Elizabeth City State University.

The events that had been planned for the 2017 meeting in North Carolina were successful. One contribution from the Education Committee and the policy Committee was the synthesis and submission of a public commentary submitted to the USDA and the FDA regarding policy on the regulation of products from gene editing. The small ad hoc committee included **Albert Kausch**, **Wayne Parrott John Cordts**; **Ray Shillito**; **Wayne Parrott**; **Alan McHughen**; **David Songstad**, **Dwight Tomes**; **Allan Wenck**, and others. There are current plans to construct a formal policy statement for the Society based on those documents. This year's meeting (2018) features a Plenary session on this topic co-convended by **Addy Alt-Holland** and **Albert Kausch**.

The 2017 SIVB meeting included a poster presentation competition with prizes awarded including Best Student Poster. As with all other forms of research presentation, students were judged on the overall quality of their presentation and work. On Sunday evening, June 11 from 7:30pm–9:30 pm there was a special symposium on *Persuasive*

*Presentations Tips and Techniques for Public Speaking.* This interactive workshop provided participants with practical tools for public speaking in any setting.

On Monday afternoon, June 12 from 12:30–1:30 pm there was a **special Student Luncheon—Creating Winning resumes and CVs.** This workshop provided a framework on how to build an effective resume and CV. A career expert rendered a lecture on practical ways to create a resume and CV and how to make it stand out from everyone else. We should make a recommendation at this year’s meeting to create separate section on the website to include this information more broadly for students.

Also on Monday afternoon, June 12 from 3:30 pm–5:00 pm a **special Non-competitive Student Oral Presentation Session** was held. This session was well received as an opportunity for graduate students to practice their oral presentation skills in a low pressure setting and to receive valuable feedback from SIVB members.

On Tuesday, June 13 at 7:00 am–8:00 am the **SIVB Student Affairs and Ad Hoc Student Committees** attended a special breakfast meeting for the Student Affairs Committee and 2017 Award recipients.

This year in St. Louis, we have planned visits to several of the areas biotechnology companies. The committee will be working with the program development committee to schedule events for this year’s meeting including; scheduled visits, and the SIVB Student Affairs and Ad Hoc Student Committees.

Dr. Kausch has developed an entire course on Biotechnology as a general education course at the University of Rhode Island which has become quite popular and successful. It is developed as both a online and on campus course and is cross listed between four departments. At the University of Rhode Island this course enrolls over 600 students per semester. For the online course all of the lectures have been video recorded digitally and edited with the powerpoints intercalated, so that they appear as live lectures. The Education Committee will be seeking to look into the prospects for making these made available through SIVB (free as a resource, and available for credit through URI and perhaps other institutions). This will all need to be vetted through SIVB.

In addition we will also be making a recommendation for updating the Protocols tab for the SIVB website.

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## LONG-RANGE PLANNING

The Long Range Planning Committee (LRPC) is a standing committee of the SIVB charged with discussing and developing strategic ideas for the long-term benefit of our membership. In helping to develop the society’s Strategic Plan for the LRPC, the Constitution and Bylaws Committee (C&BC) provided considerable guidance which directed that the LRCP to work with the various Committees and sections in the society to implement the Strategic Plan. The final Strategic Plan was approved by the SIVB board in 2016. The details of the Strategic Plan were provided in the 2016 annual report for this committee.

Below are the strategic priorities from that plan that the LRPC is working to implement: Overarching goal: Expand, convey and promote the embedded knowledge and experience of in vitro science. This goal includes basic and applied research, sharing research results via publications and meetings, service/outreach efforts for novel techniques, training, enhancing student scientific competencies, sharing information with lay audiences, and promoting the professional development and recognition of members.

Several major areas of LRPC activity with the responsible primary committee in 2017 were:

1. Promote and enhance the knowledge base and information exchange of in vitro science (Publications).
2. Promote scientific competencies among Develop/strengthen partnerships with federal agencies to encourage establishment of standards to ensure application of

standardized cell culture research practices (Education, Program).

- The “Best practices in mammalian cell culture” project headed by Dr. Yvonne Reed is now complete and the manuscripts have been published in In Vitro-Animal. This project drew on the expertise of a number of senior society members to share their unique perspectives in various aspects of mammalian cell culture.
3. Promote the professional development of members (Membership, Awards, Program and Sections (all)).
  - Recognize and reward excellence among members within the Society.
  - Provide opportunities for all members to participate in all facets of the Society, including governance, serving on committees and contributing in other areas of interest to the members.
  - Provide opportunities to contribute to the Society’s annual meetings as presenters, session chairs or co-chairs, and as members of the program committee and local program committee.
  4. Insure that financial practices, annual meetings, and other activities of the society are conducted effectively, and in a fiscally sound manner that allows continuation and expansion of the SIVB (Development and Program Committees and sections).
  - Develop a diversified and structured approach to fund-raising and generation of revenue.
  5. Insure continuity of the activities of the Society (Finance).
  - Develop an active Emeritus member group including an active bequest program.

This program was developed in 2017 and is being implemented in 2018.

It should be remembered in all of these efforts, the business office has played a major role in facilitation and coordination of the programs.

Respectfully submitted for the committee, Dwight Tomes, Nancy Reichert, Addy Alt-Holland, David Songstad, and Marietta Wheaton Saunders

**John W. Harbell**  
*Long-Range Planning Committee Chair*  
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## LABORATORY MATERIALS AND BIOSAFETY

The Laboratory Materials and Biosafety Committee (LMBC) provides a mechanism within the Society for In Vitro Biology (SIVB) to promote laboratory standards, biotechnology practices, laboratory materials, safety equipment, and facilities that constitute biosafety levels 1–4 associated with *in vitro* and biotechnology methodology. The goals of the LMBC are: 1) to provide an educational process and format to distribute information regarding potential hazards and risk assessment associated with: the cell culture process, the use and handling of biological agents, quality control of biomaterials, and updates on federal regulation pertinent to research, industry and clinical biotechnology applications; 2) to recommend laboratory practice, operation, or materials based on risk assessment of the agent or material and the laboratory activity involved; and 3) to promote the interaction of committee members with national and international scientists, professional groups, and manufacturers regarding the design, processing, and use of material for *in vitro* and biotechnology methodology.

The LMBC committee members represent government, university/academia, private industry and include: **Linda B. Jacobsen** (chair); **Sandra L. Schneider** (co-chair), Research and Clinical Laboratory Systems; **Walter Finkbeiner**, University of California-San Francisco; **Thomas Goodwin**, Sovaris Aerospace; **John Harbell**, JHarbell Consulting, LLC.; **John Masters**, University College London, Institute of Urology-UK; **Tohru Masui**, JCRB Cell Bank, Division of Bioresources, National Institute of Biomedical Innovation, Osaka, Japan; **Colette J. Rudd**, Rudd & Associates; Lynn Rutsky; The University of Texas Health Science Center Houston; **Glyn N. Stacey**, National Institute for Biological Standards and Control-UK; and **Alda Vidrich**, University of Virginia Health Sciences Center.

The area of regenerative medicine and bioengineering has hypothesized and developed decades of technology to find and characterize adult human progenitor-like cells to treat human disease. Well the majority of this work has been done with

adipose or bone marrow derived adult mesenchymal stem cells (MSC), major organs have been explored as a progenitor cell repository. Scientists at the Diabetes Research Institute (DRI), University of Miami, have isolated, identified and characterized a population of cells in a defined area of the human pancreas. These cells can be stimulated in culture with and FDA-approved growth factor bone morphogenic protein 7 (BMP-7) to develop into glucose-responsive beta cells. *Cell Reports Volume 22, Issue 9, p2408–2420, 27 February 2018. P2RY1/ALK3-Expressing Cells within the Adult Human Exocrine Pancreas Are BMP-7 Expandable and Exhibit Progenitor-like Characteristics.* These studies have the potential as an endogenous cell repository for pancreatic B cell regeneration for therapeutic applications to Type 1 and Type 2 diabetes.

**Sandra L. Schneider**  
*Laboratory Materials and Biosafety*  
*Committee Co-chair*  
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## MEMBERSHIP

The continued success of the SIVB is due to its membership. Membership has had a steady decline since 2011; however, hopefully the tide has turned as membership has seen an increase of 6.12% in 2017. The largest increase is in regular (6% increase) and student membership (17% increase). At the end of 2017, our total membership was 451 members, which included: 81 Emeritus Members, 3 Honorary Members, 7 Life Members, 279 Regular Members, 74 Student Members and 7 Post Doctoral Members. This increase is likely due to the combination membership and annual meeting registration discount offered to new and returning members.

The SIVB office continues to encourage membership renewal by sending out broadcast emails and hardcopy membership forms. The annual meeting local organizing committee and the membership committee has been connecting with current and past SIVB members to ensure continued engagement with the society. This initiative, along with the Member-get-a-Member campaign, will increase membership in the coming year. For more information on the Member-get-a-Member campaign please

complete the referral form at <https://sivb.org/membership/membership-referrals.html>. The program has brought in a few new members each year. If every member starts a conversation about the benefits of being an SIVB member to a colleague, we would see the continued increase in membership in the future.

A special prize drawing was held during the SIVB Business Meeting for all members who renewed their 2017 membership by December 31, 2016. The winners of the drawing were: **Zhanyuan J. Zhang**, who won free membership for 2018, and **Joseph Tumilowicz**, who won free registration to the 2018 In Vitro Biology Meeting. Congratulations to you both.

The Membership Committee continues to discuss ways to build the membership base. At their June Committee Meeting, a number of suggestions were proposed, such as limiting the cities where SIVB holds its annual meeting to 2–3 set locations; offering discounted rates to speakers who are not currently members to join the SIVB the year after they speak; offering options for multi-year memberships; reviewing the current print vs. online subscription model for members; reaching out to the Education Committee to further develop the SIVB website's videos to increase outreach; and the creation of a GoogleDoc prepared in conjunction with the Local Organizing Committee to identify and reach out to appropriate colleagues near the meeting city to personally encourage participation. Some of these options have been tabled for the time being and others are being implemented in 2018.

As always, please contact the SIVB office ([sivb@sivb.org](mailto:sivb@sivb.org)) if you have a membership initiative idea. We would love to hear from you!

**Vivian Dayeh**  
*Membership Committee Chair*  
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## NOMINATING

New officers were chosen from the assembled slate of candidates in the 2018 election. Join us in supporting our newest officers as they assume positions at the Board meeting in the St. Louis.

The election results are as follows:

### ***SIVB Officers and Committee Chairs***

Allan Wenck – President Elect

Sukhpreet Sandhu – Vice President

Harold Trick – Secretary

Barbara Doonan – Treasurer

Kan Wang (PBS) – Member-at-Large

Michael Dame (IVACS) Member-at-Large

Michael J. Fay – Publications Chair

Wayne Parrott – Public Policy Chair

Maria Jenderek – Awards Chair

Ted Klein – Constitutions and Bylaws Chair

Albert Kausch - Education Chair

### ***In Vitro Animal Cell Sciences***

#### ***Section Officers***

Kolla Kristjansdottir – Chair

Mae Ciancino – Vice Chair for Meeting

Andrew Truman – Vice Chair for  
Membership

Matt Desrosiers – Secretary

### ***Plant Biotechnology Section Officers***

Randall Niedz – Chair

Jeffrey Beringer - Vice Chair

Jessica Rupp – Secretary

We encourage you to actively participate with the Society and its Officers to facilitate your professional development and to ensure the Society's continued role in promoting in vitro sciences.

**Eugene Elmore**  
***Nominating Committee Chair***  
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## **PROGRAM**

The Annual Conference of the Society for In Vitro Biology was held from June 10th to June 14th, 2017, at the Raleigh Convention Center and Raleigh Marriott City Center, in Raleigh, North Carolina. We were honored to have Dr. **Antony Atala**, the Director and Chairman of the Wake Forest Institute for Regenerative Medicine, as the conference's Robert H. Lawrence Jr. Keynote Symposium speaker. Dr. Atala's stimulating lecture titled "Regenerative Medicine: Current Concepts and Changing Trends" was followed by a special Keynote Reception.

During the Opening Ceremony, the SIVB President, Dwight Tomes, PhD, presented **Gregory C. Phillips, PhD**, and **Denry J. Sato, PhD**, with the SIVB Lifetime Achievement Awards. He also

presented **Miho Furue, PhD**, and **Kan Wang, PhD**, with the SIVB Fellow Award. **Vadim Beilinson, PhD**, **Vivian Dayeh, PhD**, **Michael J. Fay, PhD**, **Ted Klein, PhD**, **Sergei Krasnyanski, PhD**, **Qiudeng Que, PhD**, **Pon Samuel, PhD** and **Mary Welter** were selected by the SIVB President to receive the SIVB Distinguished Service Award. At the Plant Biotechnology Section meeting, **Allan Wenck, PhD**, received the SIVB Distinguished Scientist Award, and **Sukhpreet Sandhu, PhD**, received the SIVB Young Scientist Award.

Special events held at the conference included a state-of-the-art workshop that was sponsored by Beckman Coulter. This workshop was titled "Grow with the Flow: Expand your Application in Biological Research with Flow Cytometry" and included 37 attendees. In addition to three distinct receptions, and the America's Finest Silent Auction, the conference's social activities encompassed the "Tuesday Night at the Museum" at the North Carolina Museum of Science, the "Research Triangle Industry Tour" and the "Afternoon in the Trees: A North Carolina State University Tour." The Tuesday Night at the Museum event was full as was the NCSU Afternoon in the Trees Tour. The Research Triangle Park tour was sold out with a waiting list. Additionally, the Joint Sections' Social was followed by a special pre-screening presentation of the documentary "Food Evolution." The IVACS and PBS Oral Presentation Competitions were held along with an impressive student poster competition, a Student Symposium titled "Persuasive Presentations: Tips and Techniques for Public Speaking, and a Student Networking Luncheon that focused on "Creating Winning Resumes and CV."

The 2017 SIVB conference allowed students, post-docs, members and invited speakers to learn from each other, exchange knowledge and ideas, strengthen existing collaborations and establish new ones in a friendly and welcoming environment. The meeting statistics showed that the total registration was 398, of which 131 were SIVB members and 11 nonmembers, 20 group registrants, 17 Research Technicians, 2 Emeritus members, 17 Post docs, 89 students, 5 one-day attendees, 12 two-day



*Martina Garda saves the memory of Greg Phillips receiving the Lifetime Achievement Award during the Opening Ceremony.*

attendees, 59 speakers, 11 volunteers, 4 guests, 18 exhibitors, and 2 staff members. 13 exhibitor spaces were utilized by 12 exhibitors, including the Society. The program included 64 speaker abstracts, 83 student abstracts, and 75 regular abstracts.

It was my responsibility and privileged to serve as the Program Chair of the 2017 SIVB Conference. I believe that the success of this meeting stems from 1) the commendable efforts of the Local Organizing Committee that spread the word about the event and assisted in the planning of the special events and tours, 2) the commitment of the IVACS and PBS Chairs and co-chairs for organizing exciting and sessions on current research topics, and last but not least, 3) the hard work and dedication of the SIVB Business Office that spearheaded the organization of the conference as a whole.

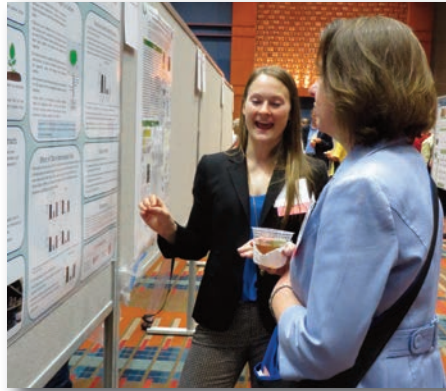
**Addy Alt-Holland**  
***2017 Program Chair***  
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## **PUBLICATIONS**

Our Society journals, *In Vitro Cellular & Developmental Biology–Animal* and *In Vitro Cellular & Developmental Biology–Plant*, continue to publish important research related to in vitro biology from around the world. The Society for In Vitro Biology and the Publications Committee thank our journal Editors, **Tetsuji Okamoto** and **David Duncan**, for their dedicated service. As outlined in the Annual Report submitted by David Duncan for *In Vitro Cellular & Developmental Biology–Plant*, the impact factor for the journal slightly decreased in 2016. The current initiative to



increase the impact factor for *In Vitro Cellular & Developmental Biology–Plant* includes publishing special issues and more review articles. The special issue of *In Vitro Cellular & Developmental Biology–Plant* on the topic of Cryopreservation edited by Barbara Reed highlights the successful implementation of this initiative. As outlined in the Annual Report submitted by Tetsuji Okamoto for *In Vitro Cellular & Developmental Biology–Animal*, the journal also experienced a slight decrease in the impact factor for 2016. A current strategy to increase the impact factor for the journal includes publishing more review articles. The publication of a series of review articles in *In Vitro Cellular & Developmental Biology–Animal* on the Best Practices in Cell Culture demonstrates the successful implementation of this strategy. The working group of scientists who contributed to the Best Practices in Cell Culture papers include: **Dr. John M. Baust** (CPSI Biotech), **Dr. Gertrude Case Buehring** (UC Berkeley), **Dr. Lia H. Campbell** (Tissue Testing Technologies, LLC), **Dr. Eugene Elmore**, **Dr. John W. Harbell** (JHarbell Consulting, LLC), **Dr. Ray W. Nims** (RMC Pharmaceutical Solutions, Inc.), **Dr. Paul Price** (Cell Culture Media Consultant), **Dr. Yvonne A. Reid** (ATCC), and **Frank Simone** (ATCC). An important issue for both journals is to increase the number of submitted manuscripts, and the Publications Committee encourages the membership of the Plant Biotechnology Section (PBS) and In Vitro Animal Cell Sciences Section (IVACS) to submit their manuscripts to our society journals. This past year the Publications Committee worked with Springer and the journal Editors to implement a modified authors checklist, a new format and print layout, and a change to the printed journal paper stock. The Publications Committee congratulates **Raymond Ramonas**, Springer Journals Production Manager, on his retirement from Springer; and we look forward to working with his replacement, **Jodi Borgenicht**. The quarterly on-line newsletter for the Society, the *In Vitro Report*, continues to serve an important role of keeping our membership informed and connected throughout the year. The Society’s social media presence



*Poster sessions continue to be one of the most effective ways to share your scientific research one-on-one during the meeting.*

continues to grow, and we are actively encouraging authors who publish in our journals to share the news of their publication on social media outlets such as Twitter and Facebook. As Chair of the Publications Committee, I want to thank Marietta Saunders and the following members of the Publications Committee for their hard work and dedication: **Barbara Doonan, David Duncan, John Finer, Cynthia Goodman, John Harbell, Maria Jenderek, Jiarui Li, Sylvia Mitchell, Ewen Mullins, Tetsuji Okamoto, Gregory Phillips, Barbara Reed, Denry Sato, Dwight Tomes, and Michele Schultz**. Remember to talk to your colleagues about *In Vitro Cellular & Developmental Biology–Animal* and *In Vitro Cellular & Developmental Biology–Plant*, and encourage them to submit their manuscripts.

### ***In Vitro–Animal***

*(For the year 3/1/17 through 2/28/18)*

The journal experienced a decrease (18%) in total submissions of new manuscripts over the comparable period last year (305 compared to 374 in 2016–2017) which is the first decrease experienced since 2011.

The numbers of submitted manuscripts for the past year compared to the prior year were: 280 regular papers (344 in 2016–2017), 12 Reports (12 in 2016–2017), 9 Reviews (13 in 2016–2017), 4 opinion Letters-to-the-Editor (0 in 2016–2017), and no book reviews (0 in 2016–2017). Of the 305 submissions, 58 were accepted (19% acceptance rate), 173 (56.7%) rejected, 13 (4.5%) withdrawn, 42 (13.7% were still in review or revision and 19 transferred to other Springer Publications (6.1%).

Thirty-one countries were represented in the submissions received in 2017/2018. Eighty-three percent (83%) of submissions were from China (120), Iran (54), Korea (24), India (18), Turkey (17), Japan (16), and USA (19). Average time from receipt to first decision in the review process was 2.5 weeks compared to 2.3 weeks overall last year. All new submissions were received through the online system.

The *In Vitro–Animal* journal publishes 10 individual issues at or around page budget levels and continues to publish on schedule. The 2016 impact factor for IVA was .897, which is decrease from the 2015 impact factor of .971 and the 5 year impact at 1.061. More than 93% of the submissions came from outside the US so there is an strong awareness of and a market for In Vitro-Animal beyond the US and North American research communities.

*In Vitro-Animal* continues to publish papers in traditional areas such as cell line derivation and toxicology, but we are also receiving increasing numbers of submissions in the areas of adult and pluripotent stem cell biology, tissue engineering, cell signaling, and methods development for cell line characterization.

In the past year several submissions included irregularities (eg. duplication, manipulation or misrepresentation of data) that were discovered by editors, reviewers or readers. IVA will take quick and decisive action in such cases to maintain the integrity of the journal and to retain the trust of its authors.

The editorial board will not review any manuscripts with the iThenticate similarity scores higher than 40%.

### ***In Vitro Cellular and Developmental Biology–Plant***

The impact factor for *In Vitro–Plant* decreased from 1.152 in 2015 to 1.024 in 2016, a number slightly lower than the 9-year running average of 1.041. One approach to increasing interest in the journal has been to increase the number of review articles published. In 2017 this number increased to six; a level not seen since 2007. We are working hard to maintain this higher level of review articles and encourage all Society members to submit a review

concerning the subject of your current research or that introductory thesis chapter.

Half of the reviews published in 2017 were in the special topic issues covering cryopreservation guest edited by **Barbara Reed**. The next special topic issues will focus on the In vitro chemistry of endangered species with **Praveen K. Saxena** as guest editor. Please contact the Editor in Chief if you have a suggestion for a special topic issue and would like to volunteer as a guest editor for the issue.

In addition to these efforts to increase interest in the journal, we have revamped the journal cover. Now the Editor in Chief will select a figure to be featured on the cover of each new issue. This figure will highlight a notable manuscript published in that issue.

Although we are pursuing these new avenues to increase the relevancy and impact of our journal, 2017 was a challenging year to fill the pages of each issue of *In Vitro-Plant*. Only 459 manuscripts were received, which is just two more than in 2016. Of those 459 manuscripts, almost 66% were rejected leaving a mere 34% acceptable for publication. Of the rejected manuscripts, almost 20% were rejected for plagiarism, a continuing problem for the journal but an improvement over the 37% plagiarized of 2016. Over 44% were rejected for technical flaws. Even though, over the past three years the number of manuscripts received each year has basically remained the same, there does seem to have been a quality improvement in the manuscripts received this year.

In 2017 there was a diverse array of countries from which manuscripts were submitted to the journal. The top 10 countries were, in descending order, India, China, Iran, Brazil, USA, Turkey, Pakistan, Mexico, Malaysia, and Egypt. Unlike 2016, 70% of these countries are also in the top 10 for supplying reviewers. However, one of the biggest problems to having a robust journal is the lack of researchers willing to review manuscripts. A total of 508 individuals were invited to review manuscripts in 2017 but only 39% of those invited (199) completed reviews. Please, when asked to review a manuscript do not



*Keynote Speaker Anthony Atala answers questions from the audience with the help of Joshua Gasiorowski during the Keynote Symposium at the 2017 In Vitro Biology Meeting.*

hesitate to do so. Your effort helps the society, is a perk on your C.V., and helps insure that when you submit a manuscript there will be reviewers available to quickly assess your work.

Finally, to maintain journal excellence SIVB members are encouraged to publish in *In Vitro-Plant*. Apart from supporting the society and fellow scientists, there are advantages to publishing in *In Vitro-Plant* such as a rigorous and fair peer review process, discounted color photograph printing, and timely publishing in a respected international journal.

### ***In Vitro Report***

The *In Vitro Report* is the quarterly online newsletter for the membership of the Society for In Vitro Biology (SIVB). The *In Vitro Report* provides a mechanism for the Society's membership to communicate with each other outside of our annual meeting and on a year-round basis. The Co-Editors are **Michael Fay** and **Sylvia Mitchell**, who work together to represent the In Vitro Animal Cell Sciences Section (IVACS) and the Plant Biotechnology Section (PBS). The Co-Editors are thankful to Michele Schultz (Publications Manager) who facilitates the editorial and publication process. The Co-Editors are also thankful to **Tetsuji Okamoto** (Editor-In-Chief of *In Vitro Cellular & Developmental Biology-Animal*), **David Duncan** (Editor-In-Chief of *In Vitro Cellular & Developmental Biology-Plant*), and the Publications Committee for their guidance and support. Routine articles in the *In Vitro Report* include: President's Report,

Journal Highlights, SIVB Meeting Updates, Feature Articles on SIVB Award Recipients, Editor's Corner, Member Profiles, and Membership News. We encourage all SIVB members to share their news and accomplishments through the *In Vitro Report*, and don't forget to read the latest issue of the *In Vitro Report* by clicking on the icon located at the upper right corner of the website for the Society for In Vitro Biology (<https://www.sivb.org>). If you have suggestions for improving the *In Vitro Report*, please contact the Co-Editors (mfayxx@midwestern.edu, sylviamitchell.biotech@gmail.com) or the Publications Manager (Michele@sivb.org).

**Michael J. Fay**  
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*Impromptu gatherings at the SIVB meetings, such as the one pictured above, allow for the exchange of scientific ideas addressing serious issues facing our members.*

## PUBLIC POLICY

The Public Policy Committee is a standing committee of the Society for In Vitro Biology (SIVB). The Committee assists Society members and the scientific community-at-large to better understand in vitro biology, biotechnology and the current research and public policy issues affecting the scientific community. The Committee supports the SIVB to interact with members of Congress and other governmental officials for the purpose of giving scientific advice on funding priorities and issues relevant to in vitro biology and biotechnology.

The SIVB is an associate member of the American Institute of Biological Sciences (AIBS) and the Council for Agricultural Science and Technology (CAST). These collations of scientific organizations support the SIVB Public Policy Committee through their legislative and lobby activities to affect national and international scientific public policy for: federal spending to support scientific research and education, impacts on natural resources and agricultural systems, protection of human rights and the ecosystem, scientific ethics and equity.

Some Public Policy Committee activities in 2017 included the following: 1) responding to public inquiries about the “SIVB Position Statement on Crop Engineering” posted on the Public Policy page of the SIVB website; 2) sending notifications to SIVB members of nation-wide events to encourage government support for science including National Call-In Day (February 2) and the March for Science (April 22); 3) notifying SIVB members of a call for comments from the U.S. FDA on its

draft guidance for “Regulation of Intentionally Altered Genomic DNA in Animals.”; 4) submitting responses to the USDA-AMS for their “proposed rule questions under consideration” for GMO labeling; 5) submitting responses to the USDA-AMS for their “proposed rule questions under consideration” for GMO labeling; 6) submitting comments to USDA-APHIS on their 2017 Proposed Biotechnology

## REPRESENTATIVES OF THE SIVB

### ATCC

No report was received from this organization.

### COUNCIL FOR AGRICULTURAL SCIENCE AND TECHNOLOGY (CAST)

The Society for In Vitro Biology is a member of CAST, which is a nonprofit 501(C)(3) organization composed of individual members and representatives from scientific societies, nonprofit and trade organizations, and commercial companies. CAST addresses issues surrounding animal, plant and food sciences, and agricultural technology including biotechnology. Their mission is to “assemble, interpret, and communicate credible science-based information regionally, nationally, and internationally to legislators, regulators, policymakers, the media, the private sector, and the public.” A complete list of their reports, to date: <http://www.castscience.org/publications>. Issue papers, commentaries, and one-page quick CASTs are freely available online. **Dr. Nancy Reichert** has

Regulations; and 7) submitting comments to FDA in response to their FDA Request for Comments (RFC) about Genome Editing in Plants.

Some new initiatives that are ongoing include the following: 1) development of an SIVB position statement on genome editing and gene drive in animals (e.g., transgenic insects) with a special thanks to **John Harbell** for taking the lead on this initiative; and 2) ways to make SIVB position statements more discoverable by web search engines and more readily accessible to the general public on the SIVB website.

As outgoing Chair of the Public Policy Committee, I want to acknowledge and thank the other members of the Public Policy Committee for their hard work and dedication: **Patrick Arsenault, Todd Jones, Nancy Reichert, Pamela Weathers, and Sydney Shaw.**

**Thomas Flynn**  
*Public Policy Chair*  
[thomas.flynn@fda.hhs.gov](mailto:thomas.flynn@fda.hhs.gov)

represented the SIVB in CAST as a member of their Board of Representatives. She assumed the presidency at the October 2017 CAST meeting in Saint Louis. Members of the Board also sit on one or more of the standing working groups. As a new member of the Food Science and Safety Work Group, I am learning the issues generally and those that are germane to the SIVB in particular. One example of major work products of the working group are issues papers. One of these is an issue paper on food biofortification lead by Nancy. Biofortification focuses on the improved nutritional value of crops through agronomic practices, conventional breeding and biotechnology. Others include Genome Editing in Agriculture—Methods, Applications, and Governance and Omega-3 Fatty Acids: Health Benefits and Dietary Recommendations. Any and all suggestions for future CAST reports would be welcomed — just email me.

**John W. Harbell**  
*CAST Board of Representatives, SIVB*  
[johnharbell@sbcglobal.net](mailto:johnharbell@sbcglobal.net)

## INTERNATIONAL ASSOCIATION FOR PLANT BIOTECHNOLOGY (IAPB)

I would like to take this opportunity to thank all of our members for supporting IAPB in 2017. Founded in 1963, the International Association for Plant Biotechnology is the largest international professional organization representing the interests of the world-wide plant biotechnology community and has been hosting successful symposia around the world since the early 60's. You are cordially invited to participate in the 14th International Association for Plant Biotechnology (IAPB) congress, which will be held in Dublin (Ireland) from 19th to 24th August 2018, with an expected delegate number to Ireland of >800. IAPB is pleased to announce esteemed keynote speakers: **Prof. Roger N. Beachy, Prof. Kevin M. Folta, Prof. Christine A. Raines, Prof. Poul Erik Jensen, Prof. Prakash P. Kumar, Prof. Cathie Martin, Prof. Sophien Kamoun, Prof. Rainer Fischer, Prof. Henry Daniell, Dr. Randy Niedz, Dr. Hugo De Groot, and Dr. Angela Sessitsch.** IAPB congress will be opened on the 19th August 2018 by a Nobel Laureate **Prof. Ada Yonath.** Due to popular demand the absolute final closing date for the submission of abstracts is now extended to March 30th. Authors will be notified on April 30th of their status. Last date to avail of early registration is May 31st.

Reduced conference rates for IAPB symposia are offered to all members, IAPB looks forward to good collaboration with its personal members to further improve the impact and the visibility of plant science in USA and beyond. IAPB offers excellent value for money and is probably the lowest membership rate for any professional organization at \$25 per year. Members will receive a copy of the IAPB newsletter twice yearly and two issues of the journal. I invite you to activate your membership with IAPB. The two societies IAPB and SIVB also work closely together and members can renew their IAPB membership through SIVB. Please contact me and I will send you an application.

**Siva Velivelli**

**US Correspondent, IAPB**  
*svelivelli@danforthcenter.org*

## SOCIAL MEDIA

There are so many ways to reach out to SIVB and your fellow members. We welcome your active participation and hope you'll find us through one or more of these outlets.

**Discussion Forum:** [sivb.org/forum/](http://sivb.org/forum/)

**Facebook:** [www.facebook.com/SIVBiology/](http://www.facebook.com/SIVBiology/)

**Twitter:** [twitter.com/SIVBiology](https://twitter.com/SIVBiology)

**LinkedIn:** [linkedin.com](https://www.linkedin.com) (Search for Society for In Vitro Biology)

**Website:** [sivb.org](http://sivb.org)

### Contact SIVB:

Society for In Vitro Biology

514 Daniels St. Suite 411

Raleigh, NC 27605

Phone: (910) 755-5431, Fax: (910) 755-5432

Email: [sivb@sivb.org](mailto:sivb@sivb.org)



*Keynote speaker, Anthony Atala, graciously took time to meet with the students who attended the 2017 Meeting.*



*During the Joint Section's Social, Hobbit Nirvana entertained our members who took to the dance floor when they weren't enjoying the evening's refreshments.*



**TREASURER'S SUMMARY REPORT**

**SOCIETY FOR IN VITRO BIOLOGY**

**STATEMENTS OF FINANCIAL POSITION  
DECEMBER 31, 2017 AND 2016**

**ASSETS**

	December 31, <u>2017</u>	December 31, <u>2016</u>
<b><u>Current Assets:</u></b>		
Cash	\$ 367,213	\$ 395,990
Accounts Receivable	-	1,315
Prepaid Expense	<u>53,669</u>	<u>55,819</u>
Total Current Assets	<u>420,882</u>	<u>453,124</u>
<b><u>Other Assets:</u></b>		
Investments	<u>196,487</u>	<u>185,961</u>
Total Other Assets	<u>196,487</u>	<u>185,961</u>
Total Assets	<u>\$ 617,369</u>	<u>\$ 639,085</u>

**LIABILITIES AND NET ASSETS**

<b><u>Current Liabilities:</u></b>		
Accounts Payable	\$ 317	\$ 1,602
Other Accrued Expenses	-	76
Deferred Dues and Subscriptions	<u>22,383</u>	<u>30,060</u>
Total Current Liabilities	<u>22,700</u>	<u>31,738</u>
<b><u>Net Assets:</u></b>		
Unrestricted	367,996	386,724
Temporarily restricted	<u>226,673</u>	<u>220,623</u>
Total Net Assets	<u>594,669</u>	<u>607,347</u>
Total Liabilities & Net Assets	<u>\$ 617,369</u>	<u>\$ 639,085</u>

**TREASURER'S SUMMARY REPORT**

**SOCIETY FOR IN VITRO BIOLOGY**

**STATEMENTS OF ACTIVITIES  
FOR THE YEARS ENDED DECEMBER 31, 2017 AND 2016**

	<u>Unrestricted</u>	<u>Temporarily Restricted</u>	<u>Total</u>	December 31, 2016 <u>Total</u>
<u>Revenue:</u>				
In Vitro-Animal	\$ 64,964	\$ -	\$ 64,964	\$ 117,477
In Vitro-Plant	47,189	-	47,189	50,109
Newsletter	6,955	-	6,955	5,549
Meetings	157,993	49,361	207,354	214,242
Horn Endowment Fund contributions	-	10	10	50
Administrative	32,686	-	32,686	29,496
Net assets released due to satisfaction of program restrictions	43,321	(43,321)	-	-
<b>Total revenue</b>	<u>353,108</u>	<u>6,050</u>	<u>359,158</u>	<u>416,923</u>
<u>Program services:</u>				
In Vitro-Animal	4,193	-	4,193	12,562
In Vitro-Plant	11,293	-	11,293	17,439
Annual meeting	134,289	-	134,289	207,241
<b>Total program services</b>	<u>149,775</u>	<u>-</u>	<u>149,775</u>	<u>237,242</u>
<u>Supporting services:</u>				
Administrative	226,084	-	226,084	226,474
<b>Total expenses</b>	<u>375,859</u>	<u>-</u>	<u>375,859</u>	<u>463,716</u>
Change in net assets before unrealized gain/(loss) on investments	(22,751)	6,050	(16,701)	(46,793)
Unrealized gain/(loss) in fair value of investments	4,023	-	4,023	5,388
Change in Net Assets	(18,728)	6,050	(12,678)	(41,405)
Net assets, January 1	386,724	220,623	607,347	648,752
Net assets, December 31	<u>\$ 367,996</u>	<u>\$ 226,673</u>	<u>\$ 594,669</u>	<u>\$ 607,347</u>