



Annual Report

January 1-December 31, 2021



Wild horses in Argentina posing for Prof. Seppo Salminen as he, Dr. Gabriel Vinderola and other team members collect fecal samples for a microbiome project. Details of the project are described in this ISAPP blog post, [Domestic horses from different geographical locations harbor antibiotic resistant gut bacteria, unlike their wild counterparts](#)

ISAPP is an international, non-profit collaboration of scientists, which exists to advance scientific excellence in probiotics and prebiotics. Although the first discussions regarding founding of ISAPP began in 1999, the organization was incorporated in 2002 with the goal of being the leading scientific organization dedicated specifically to probiotics and prebiotics. In recent years, ISAPP has expanded its reach to other 'biotic' substances, synbiotics and postbiotics, as well as fermented foods. ISAPP brings together scientists from all pertinent disciplines, including microbiology, immunology, biochemistry, nutrition, molecular biology and food science, as well as healthcare professionals in fields such as family medicine, gastroenterology, pediatrics and infectious disease. This report features highlights of ISAPP accomplishments during 2021.

As a scientific society, ISAPP ensures its activities are focused on science, not promotion of any commercial products or advocacy of any categories. The activities of ISAPP are dictated by an academic board of directors, and facilitated by the ISAPP's Executive Science Officer, Mary Ellen Sanders, PhD (see page 9 for the complete list of board members).

Several notable personal changes were experienced in 2021. Most painful was the loss of Prof. Todd Klaenhammer, founding ISAPP board member, friend and colleague to so many within the ISAPP community. The news of his passing in March found those who knew and worked with



Prof. Todd Klaenhammer in his lab at NC State

him sharing memories of Todd's scientific prowess, his untiring support of the network of scientists around him, and his ability to engender laughter with his stories. As one former collaborator put it, "I was not prepared to finish enjoying his friendship and mentorship." See here for a tribute to Prof. Klaenhammer in the ISAPP blog: [In Memoriam: Todd Klaenhammer](#).

In June, we saw the completion of Prof. Seppo Salminen's three-year term as ISAPP President, and welcomed Prof. Dan Merenstein into the role. Prof. Salminen's dedication, scientific astuteness and kind way of managing ISAPP affairs made the past three years our best yet, even under the cloud of COVID-19. We are thrilled to have Dan taking the reins; he will be the first MD taking the position as ISAPP President, and with this we can expect a greater clinical focus to our activities. It was difficult to see Prof. Glenn Gibson retire from the board. ISAPP has no stronger supporter than Glenn, and he has worked tirelessly since founding this



Prof. Seppo Salminen at ISAPP 2016, Turku, Finland

organization to advance its mission. Although we were disappointed that we were not able to thank him or Seppo in person for their leadership, we look forward to doing so at the next in-person meeting. Finally, we also welcomed a new board member, Dr. Anisha Wijeyesekera. We are looking forward to benefitting from Dr. Wijeyesekera's expertise in metabolic profiling for functional assessment of the gut microbiota, particularly in response to prebiotics and probiotics. Read more about her [here](#).



Prof. Glenn Gibson and Gregor Reid at ISAPP 2009

Corporate membership dues fund ISAPP's activities. Industry scientists from corporate members comprise the ISAPP Industry Advisory Committee (IAC), which offers industry perspectives for consideration by the board of directors. Each year, the IAC elects a representative to serve in a non-voting, advisory capacity to the Board of Directors. At the 2019 annual meeting, Marla Cunningham assumed the position of senior IAC representative. She has worked diligently (even attending board

meetings at midnight her time in Northgate, Australia) to represent industry perspectives and provide invaluable feedback into ISAPP projects, initiatives and communications. A junior IAC representative, SuszIE Tyree, was elected at the ISAPP 2021 virtual event.



Marla Cunningham, Sr. IAC representative

The ISAPP Students and Fellows Association (SFA) is a group of young scientists in related fields who gather at the annual ISAPP meeting and participate as speakers, poster presenters and participants. This year Daragh Hill, a PhD candidate from University College Cork is capably leading the SFA.



Daragh Hill, SFA President

ISAPP unveiled a new logo at our 2021 virtual meeting. The new look reflects the organization's growth and evolution as ISAPP nears the 20th anniversary of its existence. Different versions of the logo were developed, to use for different purposes:

Who we are:



What we do:



Where we've been:



Specific activities:



Read more about the logo [here](#).

For additional details, see www.isappscience.org.

WHAT PEOPLE ARE SAYING ABOUT ISAPP

ISAPP Industry Member

ISAPP is the preeminent source for scientific information on probiotics, prebiotics, synbiotics, and postbiotics. Indeed, all of their work – scientific papers, webinars, videos, infographics – is grounded in the latest research, which helps advance our scientific understanding while enabling people to learn more about these important topics.

ISAPP - Student and Fellows Association Member

To me, ISAPP represents everything done right from a scientific association standpoint - judicious advocacy campaigns, stewardship by legitimate experts, and a reliable, as well as progressive, central source of information relating to a specific topic. Moreover, as a young scientist the Students and Fellows Association of ISAPP offers many unique opportunities not often found elsewhere including industry immersion and collaboration with field leaders studying prebiotics, probiotics, and postbiotics.

ISAPP Board Member

ISAPP continues to be a world leader in the biotic field, providing tangible outcomes to a variety of stakeholders. The expert consensus panels, webinars, and continuing education courses they organize not only work to educate the community on the various definitions, but provide guidance on how biotic substances may be incorporated into one's diet to improve health.

ISAPP's ACTIVITIES: STEWARDSHIP, ADVANCING THE SCIENCE, AND EDUCATION

Despite the challenges wrought by the global response to the COVID-19 pandemic, ISAPP as an organization has continued to flourish over the past year. Our industry membership continues to grow, and our communications activities are visible to a larger global community than ever before. Across all channels, ISAPP reaches approximately 55,000 individuals per month—primarily academic and industry scientists, but also clinicians, students and members of the general public.

ISAPP board members have always represented diverse expertise. But with the publication of consensus papers on synbiotics in 2020 and postbiotics and fermented foods in 2021, ISAPP has seen its public purview expand beyond probiotics and prebiotics to embrace the broader scope of 'biotics' in general. For all of these categories, we continue to focus on our core values of **Stewardship, Advancing the Science, and Education**. Our [industry partners](#) support these activities through their insights and financial contributions.

As mentioned above, Prof. Glenn Gibson, [retired from the board of directors](#), convinced that it was time for the next wave of innovative scientists to take the lead. In his honor, the [Glenn Gibson Early Career Researcher Prize](#) was instituted.

Below is a short summary of how ISAPP promoted its core values over the past year.

Stewardship

- **Response to articles.** Two medical societies weighed in on clinical use of probiotics. ISAPP board members provided important perspective on these published conclusions: [The American College of Gastroenterology recommends against use of probiotics for primary or secondary prevention of C. difficile](#); [Can dietary supplements be used safely and reliably in vulnerable populations?](#)
- **Advocating for improved probiotic quality.** Mary Ellen Sanders continues to serve as chair of the Expert Panel on probiotics for the [United States Pharmacopeia](#) (USP), working with industry and government scientists and USP staff to develop quality standards for probiotic supplements. A webinar highlighting some of these efforts was held November 16. ISAPP members may access the recording [here](#)*. (*ISAPP members, please email info@isappscience.org for the password to access this recording.)
- **ISAPP consensus definition panels.** Some of the most frequently downloaded papers from *Nature Reviews Gastroenterology & Hepatology* are the ISAPP consensus statements on [probiotics](#) (2014), [prebiotics](#) (2017), and [synbiotics](#) (2020). In 2021, ISAPP extended this purview with publications of consensus statements on [fermented foods](#) and [postbiotics](#). ISAPP hosted a [webinar](#) for members only, which addressed how to implement these ISAPP definitions.

- **Postbiotics:** The publication of the consensus paper on postbiotics was accompanied by a webinar and several blogs ([here](#), [here](#), [here](#)) to clarify and reinforce the implications of the postbiotic definition.

Advancing the Science

- **Adequate intake of live dietary microbes.** ISAPP has extended efforts to explore the role of live dietary microbes and health. Underway is an assessment of NHANES data to determine if there is sufficient evidence linking live dietary microbe intake and health in Americans to support an official dietary recommendation. ISAPP is also collaborating with Institute for the Advancement of Food and Nutrition Sciences (IAFNS) on a Live Dietary Microbes subcommittee of their Gut Microbiome committee. This subcommittee has funded a [scoping review of published research](#) that might inform on this question. Some members of the ISAPP board also co-authored a [paper that calls for investigation of evidence for links between live dietary microbes and health](#).
- **Collaboration with the Institute for the Advancement of Food and Nutrition Sciences.** Mary Ellen Sanders represents ISAPP on the IAFNS [Gut Microbiome Committee](#). She co-chairs, along with Dr. Bruno Pot, the Live Dietary Microbe subcommittee of this group. Comprising industry, government, non-profit organization and academic experts, the Gut Microbiome Committee addresses translation of gut microbiome research into actionable items related to the food industry.
- **Collaboration with GMFH.** As a representative of ISAPP, Mary Ellen Sanders serves on the Board of Experts for the [Gut Microbiota for Health](#) platform.
- **SFA engagement.** ISAPP's [Students and Fellows Association](#) encompasses a global network of early career professionals who will be the leaders in 'biotics' for the future. This year ISAPP worked with the SFA on blog posts and other activities to promote the innovative work carried out by these members.

Education

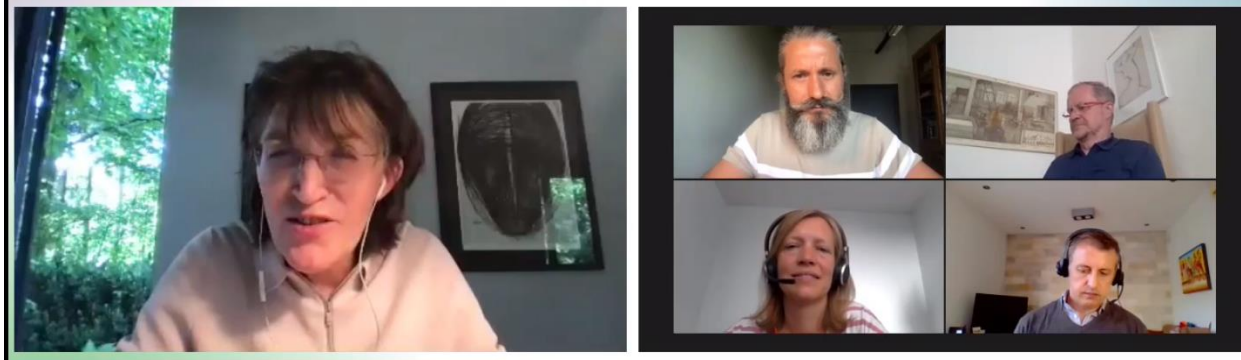
- **Over 5900 dietitians reached with ISAPP's continuing education course on probiotics, prebiotics and fermented foods for dietitians.** Mary Ellen Sanders and Bob Hutkins collaborated with registered dietitian and University of Illinois Assistant Professor of Nutrition, Hannah Holscher, to create a comprehensive self-study continuing education course worth 2 credits for dietitians. The free course, available [here](#), was published by *Today's Dietitian*. The course has been a huge success - after only 7 months, 5,927 dietitians have taken the course and this number will continue to climb. The course can be downloaded for general education purposes as well. See this related [blog](#).
- **Webinars.** ISAPP has developed a [webinar program](#) – with some webinars open to [members only](#), and others open to any who would like to attend - to address timely topics. This will help members and others to stay up to date on the latest developments in the field with ongoing learning opportunities throughout the year. It also allows an unlimited number of individuals per member company to participate in these ISAPP educational events.
- **Blogs.** ISAPP board members and guests contribute their valuable perspectives in blog posts on our website.

- **ISAPP podcast.** Stay tuned for ISAPP’s newest approach to communicating about the science of ‘biotics’, which will launch in Q2 2022.
- **New infographics and expanded translations.** See [here](#) for the full array of ISAPP infographics, including several new ones for 2021. Many infographics have been translated in a variety of languages to expand our global reach.
- **ISAPP definitions disseminated at scientific conferences:** Board members Gabriel Vinderola, Hania Szajewska, Mary Ellen Sanders, Seppo Salminen, Maria Marco and Karen Scott spoke on the ‘biotics’ definitions in several meetings: Sept 17 the XII WORKSHOP [SEMIPyP - I CONGRESO SIAMPyP](#); Oct 8 the 7th [International Congress on Probiotics, Prebiotics in Pediatrics](#); Nov 9 The Fermentation Association; Dec 9 IAFNS/ASN/AND [collaborative webinar](#).

2021 Papers from ISAPP Activities (See [full list of ISAPP Publications](#))

- Salminen, et al. 2021. [Expert consensus document: The International Scientific Association for Probiotics and Prebiotics \(ISAPP\) consensus statement on the definition and scope of postbiotics](#). *Nature Rev Gastroenterol Hepatol*. 18:649–667. And a follow up: [Reply to: Postbiotics — when simplification fails to clarify](#)
- Cunningham M, Vinderola G, Charalampopoulos D, Lebeer S, Sanders ME, Grimaldi R. [Applying probiotics and prebiotics in new delivery formats – is the clinical evidence transferable?](#) *Trends Food Sci Technol*: 112, June 2021, Pages 495-506.
- Cunningham M, Azcarate-Peril MA, Barnard A, Benoit V, Grimaldi R, Guyonnet D, Holscher HD, Hunter K, Manurung S, Obis D, Petrova MI, Steinert RE, Swanson KS, van Sinderen D, Vulevic J, Gibson GR. [Shaping the Future of Probiotics and Prebiotics](#). *Trends Microbiol*. 2021 Feb 4:S0966-842X(21)00005-6. doi: 10.1016/j.tim.2021.01.003.
- Marco, M.L., Sanders, M.E., Gänzle, M. *et al.* [The International Scientific Association for Probiotics and Prebiotics \(ISAPP\) consensus statement on fermented foods](#). *Nat Rev Gastroenterol Hepatol* (2021). doi.org/10.1038/s41575-020-00390-5.

SUMMARY OF ISAPP 2021 ANNUAL MEETING



Hania Szajewska, Patrice Cani, Seppo Salminen, Sarah Lebeer and Gabriel Vinderola (L to R, Top to bottom) interact in a session titled "*Postbiotics: scientific, industry, and regulatory perspectives*", held during the closed portion of the 2021 ISAPP meeting, June 3

Due to restrictions imposed by the global response to the COVID-19 pandemic, ISAPP did not have an option for an in-person meeting for 2021. But the virtual meeting was well received, incorporating plenary lectures, Q&A and networking sessions. Read the full 2021 meeting report [here](#).

Recorded talks and abstracts from the meeting are available [here](#) (for open access) and [here](#) (for content restricted to ISAPP member companies – password needed.)

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