ATS Fellows,

It has been an honor and a privilege for me to serve as the President of the ATS over the last year. I want to begin my letter by expressing my sincere thanks to the members of the current Board of Directors for their time and thoughtful contributions to the many tasks that we addressed, and the challenges that we faced this year. I also want to thank the representatives from the general membership who went above and beyond the ‘call of duty’ to work with the Board on the three task forces that emerged to advance the objectives of the Visioning Task Force that was highlighted in the message from my predecessor, Ken Wallace, a year ago. Finally, I want to thank Raul Suarez for his effective and diligent direction of the Academy.

Historically, the President uses this annual message to review the accomplishments made by the Academy, and to celebrate the various new and exciting initiatives that were launched during the past year. At the onset, it is important to recognize that the organization continues to be on a stable financial foundation, thanks to the dedicated service of our current Board of Directors – especially our Secretary/Treasurer, Paul Foster. Part of our financial stability is due to the facts that we continue to successfully recruit new Fellows into the Academy each year, and that the vast majority of our existing Fellows continue to re-certify. From June, 2015 to the present, the following 6 individuals were admitted to the Academy as New Fellows: Myrtle Davis, Kok Wah Hew, Anumantha Kanthasamy, Daniel Peterson, Yvonne Will, and Wei Zheng. During that same time, 66 Fellows successfully re-certified and 3 Fellows were granted Emeritus status, which brings the total number of ATS Fellows in 2016 to 326 – 271 Full Fellows and 55 Emeritus Fellows. At our teleconference later in June, the Board will consider 9 new applications, 6 re-certifications, and 2 requests for emeritus status. Recurring efforts to identify and encourage applications by our colleagues continues to be a major effort of our Board. As most Presidents have done in the past, I encourage all members of the Academy to review the current list of Fellows posted on the ATS website, and to assist in identifying your colleagues and collaborators who are not yet, but who should be interested in being recognized as a Fellow of this distinguished organization.

This past year has been marked by a number of accomplishments, and initiatives. Throughout the year, the Board has used the revised application for new members, as well as the revised application for
re-certification that were compiled last year with great success. The consensus is that the changes made by the task forces convened by Ken during his presidency have greatly improved the processes, and have enabled both the applicants and the Board to more effectively manage expectations. The Awards Committee (Sam Cohen, Herman Autrup, and myself) selected Mel Andersen as the 6th recipient of the annual ATS Mildred S. Christian Career Achievement Award, and his ‘acceptance speech’ during our annual meeting and reception in New Orleans was very well-received. Congratulations again, Mel, for this well-earned recognition. As highlighted elsewhere in this newsletter, Matt Bogdanffy, the current Vice President, represented the Academy at the Global Collaboration Coffee, which was hosted by the SOT during their annual meeting in New Orleans. The ATS was invited to join with representatives from Eurotox (e.g., European Registered Toxicologist, ERT) and the American Board of Toxicologists (e.g., DABT) for a webinar to be hosted by the American College of Toxicology (ACT). The Academy was represented on the webinar steering committee by Matt and myself; but the full board participated in the review of our slide deck. The ACT Webinar entitled, “Exploring Certifications in General Toxicology: An Introduction to ABT/ERT/ATS Certification”, will be presented on Wednesday, June 22nd. I will be presenting on behalf of the Academy.

By far and away, besides the important activities of reviewing new applications, re-certifications, and requests for emeritus status, the Board expended the most energy over the last year in follow-up to the Visioning Task launched by Ken last year. Based on the responses to the survey that we received from the full membership, we launched three new task forces at the beginning of my term as the ATS President. The activities and output from these three task forces are described in greater detail in separate articles prepared by their chairs elsewhere in this newsletter. I want to briefly acknowledge the folks involved in these activities.

- The Recognition Task Force considered activities that, if implemented, could improve the recognition of the Academy as an organization important to toxicology, and was chaired by Matt Bogdanffy. The other members of the Recognition Task Force were Sam Cohen and Don Fox from the Board, and Jay Goodman, Ron Hines, and Ruth Roberts from the general membership.

- The Outreach Task Force considered activities that could facilitate the linkage between our Fellows (e.g., recognized experts in toxicology) with organizations seeking expertise in toxicology, and was chaired by Leigh Ann Burns Naas. The other members of the Outreach Task Force were Kyle Kolaja and Jane Ellen Simmons from the Board, and Mike Dourson, Daland Juberg, Angelo Moretto, and Joyce Tsuji from the general membership.

- Finally, the Membership Engagement Task Force considered activities that would demonstrate that the leadership/Board is willing to engage the membership/Fellows, and was chaired by Ken Wallace. The other members of the Membership Engagement Task Force were Lorrence Buckley and Paul Foster from the Board, and Jeff Fisher, Sharron Meyer, and Bernadene Magnuson from the general membership.

As I mentioned in my summary of the Visioning Task Force last year, although there were no formal linkages established between the three task forces highlighted above, and formal strategic planning for the Academy, these activities will represent critical areas of focus for the Board. As Ken captured in his message last year, the results of the Visioning Task Force lay the foundation for a strategic planning process that will occur over the next two years. Over the past year, our attention has been focused on a scoping and planning phase. Starting on July 1st, Matt will direct an implementation phase. I have one more year on the ATS Board as the Past President, and I look forward to working with Matt and the rest of the 2016-2017 Board to realize our visions for Recognition, Outreach, and Member Engagement. Although Ken will step off the Board, we will be joined by two very capable and enthusiastic leaders in
toxicology: Myrtle Davis and Jon Cook.

Seeing my reference to the fact that Ken – and only Ken – will be rotating off the ATS Board at the end of June reminded me of one last activity undertaken by the Board this year. The Board determined that there is very little consistency in the Board progression from year to year. The following numbers are associated with the directors/officers rotating, or projected to rotate off of the Board/year: 2014 – two, 2015 – five, 2016 – one, 2017 – two, and 2018 – seven. These numbers indicate that there is either too little or too much turnover from the Board on an annual basis. The Board believes that this trend is incompatible with stability and effectiveness. When it was determined that the primary driver for these fluctuations was the fact that the ATS Board had historically elected its officers from among the current members, the question was raised as to whether this approach was compatible with our commitment to member engagement. Shortly after the new Board is seated on July 1st, the full membership can anticipate seeing a proposal to amend our Bylaws so that officers will be added to the ballot and – starting this winter – officers will be elected by the full membership. When fully implemented, under normal circumstances, four directors/officers will rotate off, and four new directors/officers will rotate on to the Board each year. Stay tuned. The future is bright for the stability and effectiveness of the ATS Board, and Fellows wishing to become more engaged in the activities of the Academy should have no trouble finding opportunities to do so.

In closing, thanks again for the honor and privilege of serving as your President, and for the opportunity to contribute to the vision and success of the preeminent organization devoted to the science of toxicology. I wish you all continued success and happiness.

Michael P. Holsapple, ATS
President, 2015-2016

Update Highlights

- President’s Message
- Visioning Task Force Updates
- 2016 ATS Mildred Christian Career Achievement Award
- Member News and Milestones
- ATS New Board Members
- ATS President and Vice President
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- New ATS Fellows and Recertification
- ATS Business Meeting and Reception

ATS Recognition Task Force Update
by Matthew Bogdanffy, ATS Vice President, 2015-2016

A clear outcome of the March 2015 ATS survey was that ATS can improve its recognition among professional toxicologists, beyond the members of the Academy. In response to the survey question of whether the Academy should provide information about the specific expertise of our Fellows, approximately 75% responded that they agreed, or agreed strongly. Approximately 80% of respondents similarly felt that the Academy should more proactively facilitate access of institutions to the services of ATS fellows. The response free text also indicated that there were multiple opportunities for building ATS recognition, including engaging in activities that have greater visibility outside of ATS, engaging non-ATS members including future Fellows, and taking advantage of the growing use of social media for professional connections. These responses were the basis for creating the Recognition Task Force.

The Recognition Task Force was formed in July 2015. For its membership, the Board looked for representation from academia-, industry- and government-employed Fellows. We were pleased that all who were contacted readily
volunteered to participate, recognizing the importance of the Task Force. The members included Matt Bogdanffy (Chair), ATS Board members Sam Cohen and Don Fox, and general membership representatives Jay Goodman, Ron Hines and Ruth Roberts, with Ruth also bringing an international perspective to the team.

Over the course of several telecon, the Task Force reviewed the survey results, brain stormed over potential solutions, considered the pros/cons and likelihood of success for each potential solution, and then prioritized the solutions such that five recommendations for potential action items emerged at the top of the list. These recommendations were presented to the Fellows at the General membership meeting in New Orleans.

- Build recognition of the Academy through social media: Create an ATS LinkedIn Website
- Build recognition of the Academy through objective public scientific discourse
- Build recognition of the Academy by mentoring future fellows
- Sustain growing recognition of the Academy by establishing an ATS Committee on Recognition
- Build recognition of the Academy through high visibility Awards

These recommendations are currently being considered, along with the recommendations from the Membership Engagement and Outreach Task Forces, for further consolidation into key initiatives for implementation in the 2016-2017 year.

**ATS Outreach Task Force Update**
By Leigh Ann Burns Naas, Board Member, 2015-2016

In his President’s Message, Mike Holsapple described the activities of several task forces which were commissioned upon review of the responses of the membership to the 2015 ATS Survey.

Under Ken Wallace’s leadership, the ATS Board undertook a survey of our members to better understand how ATS could provide added value not only to the Fellows but to the scientific community as a whole. Four key themes emerged from that survey: improve recognition; more actively engage the membership; facilitate linkage of ATS with organizations seeking toxicology expertise (outreach); and remain fiscally responsible in all activities. As a result, three task forces were commissioned and the outcome of their efforts is described in this newsletter.

The Outreach Task Force was charged with exploring opportunities to facilitate the linkage between the Academy/Fellows and those seeking toxicology expertise who may be unaware of the Academy and the value our members can add. The group recognized that not all Fellows may be interested or able to participate in broad external activities so the proposals needed to be flexible. Similar to the Recognition and Membership Engagement Task Forces, the Outreach Task Force comprised Fellows from across job sectors and across the globe. As Chair, it was my privilege to work with Kyle Kolaja and Jane Ellen Simmons (Board Members) and Mike Dourson, Daland Juberg, Angelo Moretto, and Joyce Tsuji from the ATS general membership to develop proposals for consideration.

The Task Force met by teleconference several times over the course of 2015-2016 to review the results of the survey, discuss ideas, brainstorm proposals that could reasonably be brought into action. Three priority proposals emerged from these discussions and these are discussed below.

**Update/Upgrade the ATS Website.** This proposal included actions to enhance internal searchability, improve external hit rate, and adding a Public Page that could be accessed by external groups looking for experts. Links to an individual Fellow’s public page (strictly voluntary) could be made available. The Task Force considered that this would improve the ease at which external groups could find an expert and the web presence may raise the brand. However, it was also recognized that cost must be considered and we must guard against “mission creep” (i.e., we need to be very clear about what we want to do and why, and how we will define success). The group felt the impact of such a change could be high, but would be dependent on the scope/focus of the changes.

**Improve the Recognition of ATS Among External Groups Looking for Experts.** This included groups such as the Boards of the National Academies, Scientific Advisory Boards, and international organizations such as the WHO and
IARC. The proposal included adding ATS to appropriate mailing lists so we are notified in a timely manner when groups are looking for experts; providing a list with bibliography of Fellows to these groups or a link to a Public Page on the ATS Website (see proposal above); engaging existing Fellows who are in the National Academies to increase awareness; and cross-linking the ATS website to other sites (e.g., SOT, EUROTOX, ACT, RiskByes, TEF). The Task Force considered that this could improve ease at which external groups can find an expert; improve brand recognition, potentially on a global scale, and Fellow recognition; increase visibility and enhance the value of ATS, and provide greater service to government, the scientific community, and the public. Items to be aware of included the cost to modify the website, the speed at which information could become outdated if not regularly maintained by individual Fellows, the need to confirm that other groups have websites with appropriate places to inset a link to ATS (e.g., search for an expert) as well as negotiating with other groups to add a website link, and finally that potential that Fellows may receive too much contact for non-specific use. Overall, however, the group felt the impact of such a change could be medium-high, so long as it was focused and if we put appropriate processes in place to maintain activities.

**Rapid Response.** It was felt that we could explore the successes and failures of other groups’ Rapid Response processes and determine whether ATS could develop a more nimble process to rapidly respond and be a go-to for other groups. One thought was to consider a “Submit Your Issue” button on the Website to indicate we have an opportunity to respond. It was recognized that this, like the activities above, may improve accessibility to experts and brand recognition of the ATS and our Fellows; however, it would likely be reserved for “headline” issues. What remains unresolved is whether individuals would speak on behalf of the ATS - which would raise brand recognition, but comes with some obvious concerns – or whether ATS as an organization would not provide Rapid Responses but, rather, would provide the names of individuals and let those individuals respond on their own behalf. As expected, the group noted that as a matter of course, all Fellows may not always agree on a specific ‘position’ which could result in the inability to be ‘rapid’. Responding on an individual basis, and not as an organization, would alleviate much of that potential problem. The Task Force felt the impact of the Rapid Response proposal could be High, but also recognized that this might realistically be a rare opportunity. Having a process in place, however, would allow us to be prepared for anything and respond quickly.

As you read through the summaries of all the Task Force proposals, you will find many similar themes. Over the course of the next year, under Matt Bogdanffy’s leadership, these will be consolidated into key initiatives for implementation.

**ATS Membership Engagement Task Force Update**
By Kendall Wallace, Past President, 2015-2016

The ATS Membership Engagement Task Force (Kendall Wallace (chair), Lorrene Buckley and Paul Foster (ATS Board members), and Jeff Fisher, Sharron Meyer and Bernadene Magnuson (from the general membership) met twice by phone to identify and discuss initiatives for consideration by the Board to strengthen the engagement of our members in the governance and activities of the ATS; One of these is being instituted for the next round of elections. Beginning this year two persons from the general membership of ATS will be appointed to each of the Nominating and Awards standing committees. Other initiatives identified by the Task Force include, in no particular order: develop a members-only searchable directory on the Internet that can be used to identify other ATS Fellows who share a common interest or who have expertise in particular areas, including identifying and recruiting ATS Fellows to draft expert position papers or succinct informed responses to issues of public concern, leverage one or more of the existing social media platforms (Twitter, Linkedin, Blog, etc.) to encourage real-time dialog amongst ATS Fellows on topics of joint concern, including announcement of opportunities for professional advancement, improve the website to be of greater value and utility to ATS Fellows. Each of these initiatives requires varying degrees of further discussion and definition during the coming year, but they all reflect means by which ATS can take advantage of the breadth of expertise and commitment by our Fellows. I wish to thank the members of the ATS Membership Engagement Task Force for their thoughtful and enthusiastic contributions to this task of defining means by which we can better harvest the professional capital and loyalties by making the ATS a more valuable resource to our members.
Dr. Melvin E. Andersen received the Mildred S. Christian Career Achievement Award from the Academy of Toxicological Sciences at the ATS Annual Reception on March 16, 2016. The annual ATS reception is held during the Annual Meeting of the Society of Toxicology.

ATS established the Mildred S. Christian Career Achievement Award to honor the memory of Dr. Christian. Millie was one of the founders of ATS, one of its early presidents, and secretary-treasurer for many years. She devoted a significant amount of passion and hard work to establish ATS as a scientifically recognized organization. The Award is conferred to an ATS Fellow in good standing who has clearly demonstrated a lasting impact on toxicological sciences and extraordinary scientific achievement through publications, professional activities, and/or leadership that have enhanced the practice of toxicology.

Dr. Melvin (Mel) Andersen received the 2016 Mildred S. Christian Award at the ATS business meeting at the Society of Toxicology Meeting in New Orleans. The following text covers the key points made in Mel’s short talk at the meeting.

“First, let me express my thanks to you, Dr. Holsapple, and the Academy on honoring me with the 2016 Mildred Christian Award. This award, in its sixth year, has gone to a distinguished group of career toxicologists. I feel extremely honored to be included with these individuals as a recipient of this award. In the next 8 -10 minutes, I’d like to tell you all about the indirect route that led me to toxicology and reflect on lessons learned in my 45-career.

Some of you may know that my late-career achievements also include playing harmonica in a blues band (The Belladonna Blues Band – www.belladonnabluesband.com). The lead singer, bass guitar player, lyricist is Harvey Clewell with Jerry Campbell on rhythm guitar. We produced one CD in our time together: Belladonna Blues Band – The Toxic Years.

My title of my talk this evening has a similar ring to it:


My training in college was in chemistry at Brown University (1967) followed by a PhD in biochemistry and molecular biology from Cornell University (1971) studying oxygen binding and protein association processes with hemoglobin from lampreys (primitive jawless fish). Looking back, it’s fair to say that I am a chemist by training, by inclination, and likely by birth. In addition, I met my wife in high school chemistry in Cranston Rhode Island. Clearly, there was a lot of chemistry in chemistry for me.

In 1970, I was accepted to do post-doctoral fellowship at Woods Hole Oceanographic Institute on Cape Cod (only 50 or so miles from my home in Cranston, RI) and study the binding of oxygen and other small molecules to hemoglobin from large-bodied sharks and bony fishes – that is elasmobranchs and teleosts. The selective service system and the military draft had other ideas. At the end of 1970, a letter came informing me that I would be drafted at the beginning of the calendar year in 1971. To side-step the draft I visited the first recruiter on the main street in Ithaca NY. He represented the US Navy and told me the Navy needed a biochemist in Bethesda, MD. It was a bit of false-advertising. What the Navy really wanted was an individual to run a clinical chemistry laboratory at the US Navy Toxicology Unit (NTU) – an organization established in 1962 to examine the safety of naval operational environments, with particular attention on adverse effects that might arise from contaminants or operational chemicals found in submarine atmospheres. The workhorse experimental systems at NTU were 2 cubic meter Rochester exposure chambers in which we simultaneously exposed rats, guinea pigs, squirrel monkeys and beagle dogs to gases and aerosols for 23.5 hours per day – every day for 90 days. The exposures were meant to mimic a seaman’s 90-day tour on a nuclear submarine.
Our Officer-in-Charge, CAPT Jacob Siegel had been involved in creating and running the toxicology programs at NTU. He was a charter member of SOT. In addition to inhalation studies, I also had responsibilities for conducting ocular, skin and acute toxicity tests with various materials. The posting gave me a crash course in occupational toxicology and industrial hygiene.

One of my first projects was examining the toxicity of an airborne contaminant that was found at low levels in some submarine atmospheres – 1,1-dichloroethylene (1,1-DCE). This compound is converted in the body to a highly toxic metabolite – likely chloroacetylchloride – and causes severe, fatal liver toxicity. The mortality curves with 1,1-DCE were perplexing – both for oral dosing and for short-term (4 hour) inhalation studies. With oral dosing, 72-hour mortality reached a plateau and sometimes even came down at higher doses. With inhalation, the morning after single exposures, the rats were either moribund with blood transaminases over 10,000 units or perfectly fine. My standard deviations were enormous. How was I to make any sense of these mortality curves? My fledgling toxicology reading had already introduced me to probit analysis (which didn’t exactly make sense to a card-carrying biochemist accustomed to either linear or semi-log plots) and the expectation that increasing dose should increase response (read mortality with 1,1-DCE) smoothly from 0% responding to 100% responding as dose or concentration increased. Not with 1,1-DCE! It appeared that I was headed for early failure as a practicing toxicologist.

On the other hand, the chemist/biochemist in me became interested in answering a different set of questions. How much 1,1-DCE is metabolized for different dosing/exposure situations? What is the relationship between metabolized dose and lethality? How might a dose response curve change from one species to another, i.e., from the rats to people on board submarines? And, how did the increasing amount of metabolized dose lead to hepatocyte death, liver failure and, ultimately, death of the rats? To a large extent these questions about the chemical and biological basis of incidence-dose relationships have remained the focus of my entire 45-year career while working in eight different organizations, the US Navy (active duty), US Air Force (civil service), Chemical Industry Institute of Toxicology, National Health Effects Laboratory -USEPA, ICF Kaiser, Colorado State University, The Hamner Institutes for Health Sciences and now ScitoVation, LLC. In the larger perspective, my research interests began with pharmacokinetics and throughout the 1990’s morphed increasingly to pharmacodynamics and then, cell based incidence-dose modeling in the last 10 years.

To really make progress with my dose-response related questions, I needed to work with individuals with skills in laboratory work and others with skills in computational sciences. In the Navy, I found a gifted, organized young colleague -Mike Gargas. He ran the laboratory and developed key tools using closed chamber, gas uptake inhalation for assessing metabolism of inhaled vapors and gases. He had the good sense to tell me to keep my distance from the lab and not jeopardize the studies. My growing interest, in any case, was in modeling these gas uptake curves, but I had not developed any strong skill set in PK modeling, nor did I have any specific idea of the approach that we should use. Serendipity came along in the form of a request from Dr. Leon Goldberg, the editor of Critical Reviews in Toxicology, for me to expand on our 1,1-DCE research and contribute an article on “Saturable Metabolism in Relationship to Toxicity”. While writing this article, I discovered the work going on in physiologically-based pharmacokinetic (PBPK) modeling of cancer chemotherapeutics, led by Drs. Ken Bischoff and Bob Dedrick. Writing this review and discovering PBPK modeling changed the entire course of my career.

In 1978, I left active duty in NTU (which had moved to Wright Patterson AFB in Dayton OH in 1977) to take a civil service position with the US Air Force at the Toxic Hazards Division, Armstrong Aerospace Medical Research Laboratory, also located at Wright Patterson AFB. The Toxicology Branch Chief, Dr. Ken Back (also a Charter member of SOT) and a Branch-PI, Marilyn George, had been impressed with the advances in PK modeling coming from Dr. Perry Gehring and his colleagues at Dow Chemical in Midland, MI and wanted to bring the approach into the Air Force program. They hired me to develop a program to evaluate the pharmacokinetics of compounds used in Air Force operations. I quickly recruited Mike Gargas to our group. In 1982, the Division Director, Col Mike MacNaughton, recruited a colleague he had worked with at Tyndall Air Force Base, Maj Harvey Clewell, to join our PK team. Harvey (who is now an ATS fellow) arrived in 1983 and provided critical expertise in computational science and computer programming to put our PBPK modeling programs into high gear. His formal training was in chemistry and was a natural fit to the programs.
In a parallel effort, I had initiated collaboration with John Ramsey from Dow Chemical. He had completed extensive studies on the time course and tissue distribution of styrene after inhalation exposures across various concentrations and durations of exposure. We met for the first time at the SOT meeting in New Orleans in 1979. So it is fair to say that the beginning of PBPK modeling in toxicology and risk assessment took place in a room at the Westin Hotel here in New Orleans, 27 years ago. In 1984, John Ramsey and I finally completed our key paper—A Physiologically Based Description of the Inhalation Pharmacokinetics of Styrene in Rats and Humans. This paper highlighted the manner in which PBPK models supported extrapolations of tissue dosimetry across dose, dose route and species.

Then in 1987, a broader team from both Wright Patterson (Harvey, Mike and I) and Dow (Dick Reitz and Fred Smith) published a paper, “Physiologically Based Pharmacokinetics and the Risk Assessment Process for Methylene Chloride”, showing the use of a PBPK model to calculate measures of internal dose and conduct a tissue dose based risk assessment. The interest and controversy engendered by this paper within the broader risk assessment community prompted the National Academy of Sciences (NAS) to call a workshop to discuss whether PBPK models were ready for use in risk assessment. In the meeting report (Pharmacokinetics in Risk Assessment: Drinking Water and Health Volume 8) the NAS gave these PBPK methods the seal of approval and the field began a period of rapid growth that continues to this day. Harvey would become increasingly interested in showing how these tools could contribute to resolving challenges in risk assessment. I remained more wedded to developing an understanding of the biological, physiological and biochemical processes that lead to non-linear behaviors for various chemicals in the body and eventually moving to pharmacodynamics and computational systems biology pathway (CSBP) modeling. In 1989, I left Dayton to take a position at the Chemical Industry Institute of Toxicology (CIIT). One positive that came from my leaving Dayton was that over the next 10 years, most of the original Dayton team went on to distinguished careers of their own in a variety of independent positions in areas of toxicology and risk assessment.

So, that’s a synopsis of PBPK activities in my early, formative years. Rather than moving on to look at aspects of biologically based dose response and cell based modeling that came after the blossoming of PBPK modeling as a dose-response tool in toxicology/risk assessment, I would like to close the talk emphasizing five lessons from this period of my career—lessons that became key to all my subsequent activities.

1. **Find an important problem!** There is great value in having a clear problem on which to work. In my case, the problem was, and has remained, very broad. What data are required to understand the shape of dose response curves and what types of models work best to create testable hypotheses. You need both: high quality data and good quantitative tools! I have kept my eyes on this problem with single-minded, almost monomaniacal attention. In addition, the consistent focus on this overarching problem has caused me to continually reevaluate the types of experiments and the types of modeling approaches that were necessary. Clearly, the tools for pharmacodynamic modeling in the 1990’s were very different from those available in 2016 due to the fabulous advances in understanding cell response pathways and cellular signaling motifs.

2. **Surround yourself with individuals brighter than yourself!** Making progress in any large endeavor requires surrounding yourself with people with diverse skills, all interested in making progress on these problems. I’ve consistently had the good fortune of working with colleagues much more skilled than I am. In the laboratory there was Mike Gargas in Dayton and various staff in the latter parts of my career, including Rusty Thomas and Rebecca Clewell at Hamner (now ScitoVation). With respect to computational applications, there was Harvey who has worked with me in various capacities since 1983, then Rory Conolly bringing BBDR approaches using Moolgavkar-Venonz-Knudson models, Qiang Zhang and Sudin Bhattacharya teaching me CSBP modeling, and most recently Patrick McMullen providing modern bioinformatic applications.

3. **Make hay while the sun shines or carpe diem!** Our efforts with styrene and methylene chloride brought attention to the use of PBPK tools for risk assessment extrapolations. But, we weren’t about to rest on our laurels! The team in Dayton included Harvey and Mike, plus Jim McDougal, Jeff Fisher, Jeff Gearhart, and Gary Jepson, all hungry to attack problems to understand tissue dosimetry in various situations. They team
used PBPK tools to examine dermal uptake (Jim McDougal), cholinesterase inhibition by organophosphates (Gary Jepson and Jeff Gearhart), life stage modeling in pregnancy and lactation (Jeff Fisher), inhibitory interactions in the intact rat by co-exposures of 1,1-DCE and trichloroethylene (Kris Severyn and Mike Gargas), glutathione depletion (our team plus Richard D’Souza from Procter & Gamble), and again with the larger team, suicide enzyme inhibition from cis- and trans-1,2-dichloroethylenes and multi-product inhibition of metabolism with compounds such as hexane, benzene, and more recently atrazine. In addition, by extending the gas uptake tools to some 40 chemicals, Mike Gargas began a body of work developing structure activity relationships for metabolic parameters and tissue partitioning for a wide variety of volatile compounds. Mike, Jeff and Gary completed PhDs based on their work during the 1980’s at Wright Patterson.

By late in the 1980’s, the Dayton team had also begun collaborative work on non-volatiles, including nicotine (with David Plowchalk and Don deBithezy at RJReynolds) and tetrachlorodibenzo-p-dioxin (with Hon-Wing Leung and Dennis Paustenbach at Syntex) and started work on pharmacodynamics (with organophosphates, styrene, TCDD, chloroform and nicotine). Over a span of just about 5 years, the WP-AFB group had tackled in at least some preliminary form most of the key issues that would arise in using PBPK tools for evaluating tissue dosimetry as a risk assessment tool. Importantly, Harvey Clewell began his career-long efforts to show how to apply these tools for sensitivity and variability analysis and for the broader applications of PBPK models in risk assessment. It was an invigorating atmosphere – referred to by several of the Dayton team as ‘Camelot’.

4. **Educate the next generation of users through papers, seminars and short-courses!** You need to begin to train others if you plan the work to have a lasting influence. Harvey, Dick Reitz and I did our first PBPK training session at an Ohio-Valley Chapter of the SOT in 1986. We followed that with sessions at the annual toxicology conference held in Dayton. Ray Yang attended some of these meetings and developed an interest in PBPK modeling. He then brought a PBPK focus to his program in mixture toxicology at Colorado State University when he became Chair, Department of Environmental and Radiological Health Sciences in 1990. In 1992 Ray began biannual, two-week long courses in PBPK modeling. By 1994, Ray, Harvey and I were the lead instructors in the course. In more recent times at Hamner, a broader team developed a series of 1-week courses including PBPK Modeling in Risk assessment, Interpreting Biomonitoring Studies with PBPK Modeling, PBPK Modeling and In vitro-In vivo Extrapolation, and Computational Systems Biology Pathway Modeling. Miyoung Yoon has become a key contributor in developing these courses in recent years. Ray, though retired, teaches a course in PBPK modeling for beginners in Ft Collins most summers.

Through these various courses, we have trained 300 to 400 students and, to the extent possible, made all training materials - lectures and models - available through the Hamner web-site. (We are now working to make these materials accessible from the ScitoVation, LLC web-site in the near future.) In addition to Ray Yang’s program at CSU, two former colleagues, Jeff Fisher a graduate student from my Dayton days and Kannan Krishnan, a post-doctoral student from my time at CIIT (1989-1992), went on to faculty positions where they developed programs at the University of Georgia and University of Montreal, respectively, training a new generation of students in PBPK and, especially at Georgia, in both PBPK and PBPD modeling. Kannan now says that I am the great grandfather of PBPK modeling in toxicology, since he is training his third generation of students and post-doctoral fellow. I am not sure he intended this as a compliment.

5. **Share the credit for success as broadly as possible!** Lastly, and arguably most important, I learned that it is simply astonishing what a team can accomplish when no one individual has to get the credit. My early career work, starting in the US Navy and as a civilian with the US Air Force, relied on energetic, dedicated teams,
full of talented individuals with diverse interests who quickly became a group of close friends contributing broadly to most of the research initiatives in the lab. This evening, I am grateful to receive an individual award from the ATS. However, I owe the successes throughout my career to teams at various institutions/organizations who wanted to work together to solve problems. I was extremely fortunate that so many wonderful colleagues came my way over these 45 years. They enriched my life with their intelligence, hard-work and, what have now become, enduring friendships.

So, what did I contribute to the mix? Let’s see. There was the consistent focus on the longer term problem, for sure. And some questionable personal characteristics - I was consistently impatient with the small things - getting experiments completed, writing papers, setting up courses- generally patient pursuing the larger goals of working to understand incidence – dose relationships, persistent in maintaining focus on this larger goal, and now-and-then decidedly pigheaded. It’s probably essential to have persistence, patience and pigheadedness to work on a single topic over such a long career.

Nonetheless, most-of-all you need great colleagues, good fortune and a supportive wife and family. In all these areas, I have been extremely fortunate and feel a deep sense of gratitude.

Oh yes, that girl I met in high-school chemistry, Christine Jaeger, is here to share this wonderful evening with me. Thank you for our long partnership, Chris”.

Mildred S. Christian Career Achievement Award Details

**PLAN AHEAD:** Deadline for Nominations for the 2017 Mildred S. Christian Career Achievement Award is November 20, 2016.

ATS established the Mildred S. Christian Career Achievement Award to honor the memory of Dr. Christian, known to many as “Millie.”

She gave much of her time and financial resources to the Academy and helped to make the ATS into an efficient and scientifically recognized organization. Many of the policies and practices used today benefit from her efforts.

The ATS award is conferred to an ATS Fellow who has clearly demonstrated a lasting impact on toxicological sciences. The previous winners have been Bruce Ames, Curtis Klaassen, John Doull, Roger McClellan, Glenn Sipes, and Melvin Andersen.

The criteria for the award include, but are not limited to, the following:

1. The awardee must be an ATS Fellow in good standing as either a full ATS Fellow or ATS Emeritus. A Fellow that is a current member of the Board of Directors of ATS is not eligible to receive the award.
2. The awardee must have demonstrated extraordinary scientific achievement through publications, professional activities, and/or leadership that have enhanced the practice of toxicology as judged by the Board of Directors.

The ATS Board of Directors is requesting nominations from the ATS Fellows for the 2017 Mildred S. Christian Award. Nominations remain active for two years. If you believe an ATS Fellow meets the criteria for this award, we request that you submit a letter of support along with the nominee’s biographical information (complete CV if possible) to Raul Suarez for the Board’s consideration. The deadline for receipt of nominations for the 2017 award is November 20, 2016.
Member News

Two ATS Scientists Elected to American Association for the Advancement of Science: Drs. Anumantha Kanthasamy and Rao M. Uppu

The American Association for the Advancement of Science (AAAS) recently elected two of our Fellow ATS for their prestigious society. Election to the Fellow status of AAAS is based on contributions to innovation, education, and scientific leadership. The tradition of electing AAAS Fellows began in 1874 to recognize members for their scientifically or socially distinguished efforts to advance science or its applications.

Dr. Rao Uppu is recognized for his distinguished contributions in the field of oxidative biology, particularly for modeling and understanding of enzymatic hydrogen transfer, biological nitration, and signaling by "ozone-specific" oxysterols.

Dr. Anumantha Kanthasamy is recognized for his distinguished contributions in the field of neurotoxicology and neurodegeneration, and for the development and translation of new therapeutic strategies to treat neurodegenerative disorders.

The newly elected Fellows were formally recognized on Feb. 13, 2016, at the AAAS Fellows Forum during the society's annual meeting in Washington, at the Omni Shoreham Hotel.


ATS Represented at the SOT Global Collaboration Coffee
By Matthew Bogdanffy, ATS Vice President 2015-2016

The Society of Toxicology has hosted a Global Collaboration Coffee at its Annual Meeting for the past five years to establish a dialogue with international toxicology societies. Supported by IUTOX in this effort, the goal of this meeting was to advance sharing of toxicological resources and materials among countries where such resources are plentiful with others that are underserved. Recently, SOT invited IUTOX to assume responsibility for the Global Collaboration Coffee to keep the conversation going with its international audience and to take the next steps in implementing a plan for collecting and sharing information in an organized way.

Elaine Faustman PhD, DABT, ATS, Chair of the IUTOX Education Committee and Emanuela Corsini, PhD, Chair of the IUTOX Communications Committee, led the session in New Orleans, which served as the bridge between the Global Communications and Collaboration in Toxicology session that was held with the Hispanic Organization of Toxicologists (HOT) in Brazil during the CTDC9 Meeting and a session of the same name to be held in Mexico during ICTXIV Meeting in October 2016. Matthew Bogdanffy, PhD, DABT, ATS, represented the Academy of Toxicological Sciences as its current Vice President.
The event offered an opportunity for scientific leaders to connect and gain a better understanding of the initiatives of societies around the world. Three topics were covered at the meeting: mentoring, funding opportunities and practical technology solutions. Regarding mentoring, having mentors within the mentee’s local region was considered advantageous to understanding local needs and cultures. The use of social media, blogs and communications tools such as Skype are facilitating these relationships. Academia and national toxicology programs were discussed as good sources from which to recruit mentors.

Funding of travel is consistently of interest to the IUTOX member societies and various awards including the SOT Global Initiatives fund were discussed. IUTOX was suggested to serve as a clearinghouse for such awards.

Regarding practical technology solutions, the discussion was quite interesting with suggestions such as the use of YouTube for transferring technical methods and procedures to distant locations. Access to electronic information through open access journals via the National Library of Medicine and following scientists via ResearchGate were cited as examples of expanding access to information. Similarly free webinars offered through the SOT Scientific Liaison Coalition and through contract research organizations, as examples, were highlighted as technological applications that are improving access to training. SOT President and ATS Past President Dr. Peter Goering highlighted the dissemination of free jump drives that contain SOT CE courses to representatives from countries where toxicology is underrepresented.

Following the coffee, attendees adjourned together to the Global Gallery, where the poster describing the Academy was presented together with many other toxicology affiliated societies from around the world.

Many ATS members participated in the Past Presidents Fun Run at the SOT Annual Meeting

![Many ATS members participated in the Past Presidents Fun Run at the SOT Annual Meeting](image1.jpg)

![Many ATS members participated in the Past Presidents Fun Run at the SOT Annual Meeting](image2.jpg)

![Many ATS members participated in the Past Presidents Fun Run at the SOT Annual Meeting](image3.jpg)
Election Highlights—Incoming ATS Board of Directors

In February 2016, ATS Fellows cast their ballots to elect new members to serve on the ATS Board of Directors. The ballot included an impressive list of candidates who stepped forward to serve the membership. We are pleased to welcome **Jon C. Cook**, Pfizer; and **Myrtle Davis**, National Cancer Institute to the ATS Board of Directors.

In addition, we express our gratitude to **John M. DeSesso**, Center for Toxicology and Mechanistic Biology, and Exponent; **Mary Beth Genter**, University of Cincinnati; and **Berna Magnuson**, Health Science Consultants, Inc., for participating as candidates in this election process.

Incoming Members to the ATS Board of Directors

**Dr. Jon C. Cook**

Jon C. Cook is Senior Director of Investigative Toxicology at Pfizer Inc. (1998-present) where he has worked on early and late-stage drug development teams. Prior to joining Pfizer Inc., he was a Senior Research Toxicologist at DuPont-Haskell Laboratory (1987-1998) and a Postdoctoral Fellow at Chemical Industry Institute of Toxicology (1985-1987). Dr. Cook received his B.S. in Physiology from the University of California, Davis, and his M.S. and Ph.D. degrees in Toxicology from North Carolina State University. He is a Diplomate of the American Board of Toxicology and a Fellow of the Academy of Toxicological Sciences.


Dr. Cook has been active in the Society of Toxicology (SOT) throughout his career. He was elected to the “Presidential Chain” of the SOT serving as Vice President-Elect, Vice President, President, and Past President from 2009 – 2013 and to Council from 2002-2004. He has served on numerous SOT Committees including the Endowment Board (2007-2010, 2013-2015), Services Strategy Committee (2006-2007), and Continuing Education Committee (member, 1991-1996; Chair, 1993-1994). He has served as the Vice-President-Elect/Vice-President/President/Past-President of the SOT Carcinogenesis Specialty Section (2001-2005)

**Dr. Myrtle Davis**

Myrtle Davis, DVM. Ph.D. is the currently the Branch Chief for Toxicology and Pharmacology in the Developmental Therapeutics Program of the Division of Cancer Diagnostics and Treatment of the National Cancer Institute and serves as Scientific Director of the Laboratory of Investigative Toxicology at the Frederick National Laboratory for Cancer Research (FNLCR). Dr. Davis contributes broadly to the DCTD by providing mechanistic toxicology expertise to drug discovery and development teams, creating and leading major research initiatives within DTP and managing the daily operations of the Toxicology and Pharmacology Branch. The branch is responsible for developing safety evaluation strategies to establish toxicology profiles for investigational agents in the NCI's Experimental Therapeutics Program (NExT). The branch also provides expertise in discussions with the FDA about the design and adequacy of planned (or completed) nonclinical toxicology studies that are expected to support Investigational...
Prior to her appointment at NCI in 2008, Dr. Davis was a Research Advisor in the Investigative Toxicology Group at Lilly Research Labs, Eli Lilly and company. Prior to taking the position at Eli Lilly in 2002, Dr. Davis was an Associate Professor in the Department of Pathology at the University of Maryland, School of Medicine where she had an active grant-supported research program exploring mechanisms of toxicant-induced apoptosis and the role of protein phosphorylation.

Dr. Davis is an active member of the Society of Toxicology and is a long-standing member of the Society of Toxicological Pathology. She currently serves on SOT Council and on the Board of Trustees for the ILSI Health and Environmental Sciences Institute as an outside activity. She was a member of the Institute for Laboratory Animal Research Council, The National Academies of Sciences for a six-year term ending in 2012. She served as Co-Editor in Chief for the ILAR Journal and has served and an Associate Editor for various Toxicology sand Journals including Toxicological Sciences. She also served as a member of the standing NIH Study Section, ALTX1 for 5 years. She has authored several book chapters and co authored peer-reviewed publications on a range of topics including apoptosis, toxicant-induced cell signaling and biomarkers of tissue injury. She has also developed course content and lectures for medical and graduate student education.

Activities particularly relevant to cardiovascular safety include: Associate Editorial Team Lead, Cardio-Oncology Clinical Topic Collection on ACC.org, Member of the NCI Cardiotoxicity Task Force, Member of the NCI/NHLBI Cross Functional Team to develop research program opportunities in Cardio-oncology; Member of the HESI Cardiac Safety Technical Committee; Laboratory Contributor and partner for the Comprehensive In Vitro Proarrhythmia Assay initiative (CIPA).

A native New Yorker, Dr. Davis completed a postdoctoral fellowship in Toxicologic Pathology at the University of Maryland. She earned a Ph.D. in Toxicology from the University of Illinois Champaign-Urbana and obtained her Doctor of Veterinary Medicine degree from Tuskegee University School of Veterinary Medicine. She also completed undergraduate work in Chemistry and Math at Tuskegee University.

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**2016-2017 ATS President and Vice President**

**Matthew S. Bogdanffy ATS President**

Dr. Bogdanffy received his Ph.D. in toxicology from Northeastern University, Boston, MA and was a postdoctoral fellow at the CIIT Centers for Health Research in North Carolina. He spent 17 years with the DuPont Company in various roles including Research Manager and Director of Biochemical and Molecular Toxicology. He has been with Boehringer Ingelheim Pharmaceuticals in Ridgefield Connecticut since 2004 and is Director of Regulatory Toxicology. Dr. Bogdanffy has authored more than 85 research papers and book chapters in toxicology and risk assessment. He has served on the editorial board of several toxicology journals including Associate Editor for the journal Toxicological Sciences. He is a past member of Council for the Society of Toxicology (2009-2011) and is currently a member of the Endowment Fund Board. He is an Adjunct Professor at the University of Connecticut, a Diplomate of the American Board of Toxicology and a member of the Board of Directors and Fellow of the Academy of Toxicological Sciences.
Leigh Ann Burns Naas Elected ATS Vice President

Leigh Ann Burns Naas is Vice President of Drug Safety Evaluation at Gilead Sciences. Prior to Gilead, she was a Drug Safety Therapeutic Area Leader for Antivirals and Infectious Disease (2001–2006) and Oncology (2007–2011) at Pfizer, and was Immunotoxicology Lab Supervisor then Group Leader for Product Toxicology at Dow Corning Corporation (1994–2001). Throughout her career, her work has focused on strategic aspects and the design of safety programs to support chemical product development and registration, and the clinical development and licensure for small molecules and biotherapeutics, including vaccines. Leigh Ann is a member of the Editorial Board for the International Journal of Toxicology and Journal of Immunotoxicology, and is an Associate Editor for Toxicology Reports. She is currently editing two volumes (Immune and Hematopoietic Systems) of Comprehensive Toxicology, 3rd Edition. She is a former member of the BoD of the ABT and a current member of the BoD of the ATS. Leigh Ann has been very active in both the Society of Toxicology (SOT) and the American College of Toxicology (ACT) serving on several committees both elected and appointed in both. In the SOT she is also a Past-President of the Immunotoxicology Specialty Section, was a founding member and interim officer of the Biotechnology Specialty Section, and has been a Councilor for the Women in Toxicology SIG. She has been active in the ILSI HESI Immunotoxicology Technical Committee (2001–2011) and the IQ Consortium (BoD; DruSafe; 2013–present) and has demonstrated a long commitment to promoting advancements in basic and applied toxicology and the impact of toxicological sciences on human and environmental health across multiple scientific organizations and in the literature, and in the training/education of the next generation of toxicologists. Leigh Ann received her doctorate degree in pharmacology and toxicology from the Medical College of Virginia/VCU in 1992 with an emphasis on immunotoxicology, and completed a postdoctoral fellowship in biochemical and molecular immunology at the Mayo Clinic in Rochester, MN. In addition to being a Fellow of the ATS, she is a Diplomate of the ABT and a European Registered Toxicologist (UK).

ATS Board of Directors—Terms

2015-2016
Michael P. Holsapple, President (2013-2017)
Matthew Bogdanffy, Vice President (2013-2018)
Paul M. D. Foster, Secretary/Treasurer (2014-2018)
Kendall B. Wallace, Past President (2012-2016)
Herman Autrup (2015-2018)
Lorene Buckley (2015-2018)
Leigh Ann Burns Naas (2013-2016)
Donald A. Fox (2015-2018)
Kyle Kolaja (2015-2018)
Jane Ellen Simmons (2015-2018)

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Jon C. Cook (2016-2019)
Myrtle Davis (2016-2019)
Donald A. Fox (2015-2018)
Kyle Kolaja (2015-2018)
Jane Ellen Simmons (2015-2018)

A special thanks to our outgoing Past President, Kendall Wallace, for his service and commitment to ATS.

Thank You to Our 2015-2016 ATS Donors

In appreciation for the very generous support from the membership, please join us in thanking the members listed below who donated additional money to fund emerging initiatives:

Exponent
William T. Allaben
Barbara D. Beck
Matthew S. Bogdanffy
William K Boyes

James Bruckner
Leigh Ann Burns Naas
John J. Clary
Morris Cranmer
Michael J. Derelanko

Dan Dietrich
Marion F. Ehrich
Exponent
Paul M.D. Foster
Bruce A. Fowler
ATS New Fellow Designation and Recertifications

New ATS Fellows from April 2015–January 2016: Myrtle Davis, Kok Wah Hew, Anumantha Kanthasamy, Daniel Petersen, Yvonne Will, and Wei Zhang—Congratulations!

During that same timeframe, ATS Fellows who have demonstrated their continued commitment to ATS by seeking and attaining recertification are William Allaben, Melvin Andersen, Elizabeth Anderson, Herman Autrup, David Basketter, Linda Birnbaum, Brad Bolon, Jonathan Borak, Leigh Ann Burns Naas, Jan Chambers, Samuel Cohen, George Corcoran, Joan Cranmer, Bryan Delaney, Michael Denison, Daniel Dietrich, David Dorman, David Eaton, Marion Ehrich, Jeffrey Fisher, John Fowler, Donald Fox, Jay Goodman, James Green, William Greenlee, Bryan Hardin, Stephen Harris, Philip Harvey, Kenneth Hastings, Uwe Heinrich, Mark Hite, Saber Hussain, Robert Kapp, William Kelce, Kyle Kolaja, Edward Lock, Michael Madden, Charlene McQueen, Frederick Miller, Richard Miller, Angelo Moretto, Gerard Nohynek, Ofelia Olivero, Richard Parent, Jongsei Park, Douglas Patterson, Dennis Paustenbach, Robert Phalen, James Popp, Kenneth Ramos, Ruth Roberts, Colin Rousseaux, Harry Salem, Alfred Sciuto, Jane Ellen Simmons, Glenn Sipes, William Slikker, Keith Solomon, John Thomas, Cheryl Lyn Walker, Kendall Wallace, Anetta Watson, Myra Weiner, Peter Working, Errol Zeiger. Additionally, Craig H. Farr, Felix de la Iglesia, and Ali Karakaya were granted Emeritus status.

Since 1981, the Academy of Toxicological Sciences (ATS) has certified toxicologists who are recognized by their peers for their expertise and sound scientific judgment; these toxicologists are awarded the title of Fellow. The purpose of this recognition and certification is to ensure the competence and experience of professionals whose work affects public welfare.

Please Pay Your Annual ATS Membership Dues

Please note that the Annual Membership Dues is due by September 15 of each year. You will receive a notice later in the summer for dues payment, and we ask that you remember to pay your dues promptly. Fellows who have not paid their annual dues as of December 1 will be considered delinquent. For any Fellow who remains delinquent for 30 days (January 1), the Fellow will be encouraged to pay dues in a prompt manner so that their certification and privileges are not suspended pending dues payment. If dues remain unpaid for one year (September 15 of the following year), the Fellow will be informed that their Fellowship status has been revoked. The designation of Fellow can no longer be used, including any professional media and correspondence, from that day forward. This includes, but is not limited to, business cards, letterhead, curriculum vitae, etc.
2016 ATS Annual Business Meeting and Reception Was Great Success!

Over 60 ATS Fellows gathered to renew long-standing friendships and to welcome the new ATS Fellows at the 2016 Annual Business Meeting and Reception held in the Hilton New Orleans Riverside. The highlight of the evening was the presentation of the 2016 ATS Mildred Christian Achievement Award to Melvin E. Andersen.

ATS President Michael P. Holsapple thanked the board for their active involvement and encouraged all ATS members to foster the interest of distinguished toxicologists to submit applications to become Fellows of the Academy of Toxicological Sciences. Special recognition was given to Dr. Kendall Wallace who completed his terms on the ATS Board of Directors.

Below are some pictures of ATS Fellows at the Reception:
The ATS Board of Directors is currently evaluating changes to the Academy’s By-Laws. Please watch for messages in the near future requesting your input on proposals for changes.