

BENCHMARKS

A Baker Company Newsletter

Spring 2006

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Dr. David G. Stuart Receives The Arnold G. Wedum Distinguished Achievement Award

In recognition of his contributions to the field of biological safety in research, teaching, leadership, and service, David G. Stuart, Ph.D. received the Arnold G. Wedum Distinguished Achievement Award at the American Biological Safety Association meeting in Vancouver, B.C. in October 2005.

Dr. Stuart has been a microbiologist for over 35 years, spending over half of his career performing research, writing, and teaching about ventilation equipment (safety cabinets, fume hoods, isolators).

Dr. Stuart is a pioneer in the field of biological safety. Prior to ABSA he was appointed by the National Institutes of Health as a Charter Member of the Steering Committee of the Biological Safety Conference. In addition, he served on the NSF Joint Committee for many years influencing the content of NSF Standard 49 and the development of their certifier accreditation program. Currently he has been serving on a NIOSH working group to develop new standards for chemotherapy drug preparation.

“Dr. Stuart’s enthusiasm and willingness to collaborate has advanced the careers of many others in the field”

— Jack. S. Wunder

His research on vapor handling characteristics and performance envelopes of BSCs has been instrumental to the field. NSF based their definitions of cabinets on this work, and the concepts have been critical to the laboratory risk assessment process.



In the 1980s he performed the first VHP decontamination of BSCs, hoping to find an alternative to using toxic formaldehyde. He has continued this research to this day, and today VHP decontamination is a hot topic in the certification field.

“Doc is one of the most dedicated teachers in the field of contamination control”

— James T. Wagner

Dr. Stuart has been serving as an advisor to VHP equipment manufacturers, and has been helping develop new products that could completely change the decontamination process.

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**EAGLESON INSTITUTE
2006 SEMINAR SCHEDULE**

MARCH

27-31 Advanced Certification

APRIL

1-2 NSF Exam

MAY

8-9 Safety Cabinet Technology

10 Intro to Certification

10 ASHRAE 110 Testing

Workshop

11-12 HVAC Systems &

Laboratory Design

SEPTEMBER

11-15 Advanced Certification

16-17 NSF Exam

25-28 Testing HEPA filters

NOVEMBER

6-7 Safety Cabinet Technology

8 Intro to Certification

8 ASHRAE 110 Testing Work-
shop

9-10 HVAC Systems

13-16 Commissioning Class



The Eagleson Institute

The Eagleson Institute once again provided management services for CDC's International Symposium on Biosafety, which took place in Atlanta,

Georgia from January 21-25, 2006 and focused on Current Challenges in Animal Biosafety and Bio-security. Over 600 people attended, making this the largest symposium ever. Julie Gerberding, MD, Director of CDC, began the meeting with an overview of "Global Outbreaks and Infectious Diseases."

The symposium included presentations on occupational health, facility operations, facility design, safety oversight, recombinant DNA, transport of animals, public communication, and BSL-3Ag issues. Pre-symposium classes focused on ABSL guidelines, developing safety programs and manuals, using viral vectors in animal research, animal health care issues, design and construction of animal facilities, risk assessment for unique animals, infection control in animal research facilities, crisis and emergency risk communication, and managing program reviews in biocontainment.

One of the social highlights was the banquet, which had an African rainforest theme. After a dynamic presentation on gorilla behavior by Tara Stoinski, Ph.D. the entire room participated in a lively, interactive drumming program with Drum Café.

The Eagleson Institute is a nonprofit foundation with a mission to promote the principles and practices of laboratory safety.

www.eagleson.org

For more information:

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Michigan State University

The Diagnostic Center for Population and Animal Health (DCPAH) serves as the State of Michigan's top diagnostic laboratory and one of the country's premier laboratories of its kind. Demand for the new facility grew in part from a recent outbreak of bovine tuberculosis in northern Michigan. The prime objective of the DCPAH is to provide accurate diagnostic tests on a variety of animal tissues and support for practicing veterinarians, farmers and animal owners. This new facility also provides clinical testing experience for undergraduate and graduate veterinary students from Michigan State University.

"Labs from around the world" showcases state-of-the-art laboratories throughout the world that are equipped with safety cabinets from The Baker Company

Labs From Around the World



Joe Hattie of Michigan State University stands next to his Baker Class II and Class III Biological Safety Cabinets. Baker cabinets provide personnel, product, and environmental protection.

A Few Minutes with Dr. David Stuart — by Cliff Colby

CC: I understand you grew up on a farm in Maine. How did that prepare you for a career as a scientist?

DS: I learned to work alone and to solve problems by myself. I would be responsible for a job and my father would just drop off my lunch and some extra fuel. If something broke I needed to fix it on my own. I also learned, by working with my father and grandfather, to appreciate their world views.

CC: Can you tell us about your undergraduate degrees?

DS: I have degrees in Bible Studies and General Biology and nearly another in Psychology. I also fulfilled the requirements to be certified as a school teacher. I have a very broad education and have been able to reconcile science and the Bible.

CC: You've taught bio-safety all over the world. What has been your biggest challenge?

DS: My biggest challenge always is putting together the materials to do the workshops. Simple things like extension cords sometimes have to be manufactured because they are not readily available. Of course there are some cultural differences as well.

CC: I've noticed that your teaching style is very enthusiastic and you make a real connection with the classes. Does this come naturally or were you inspired?

DS: Some of it comes naturally but I also had a great teacher in speech class that inspired it. It is also the nature of the subject — I really get into it! I'm interested in what I am teaching.

CC: How would you compare your experiences teaching at Montana State University with your work at The Baker Company?

DS: They have been much alike. There have been great people to work with, lots of teaching, and research. I've also served on many committees for both.

CC: Can you tell us about your time at The Baker Company?

DS: My tenure at the Baker Company started with a bang on three fronts that determined the roles I would play during my career here. Almost immediately after my arrival the Company was awarded a project to design and build 3 design verification prototypes of a general purpose work station to fly on NASA's Space Shuttle. I was made project officer on this effort which turned out to be a very challenging and exciting time. This was the beginning of my work in the lab and my collaboration with engineering. I very much enjoyed working with Jack Eagleson, Dennis Eagleson, Ted Greenier, Lin Steadman, Roger Rumery, Bob Jones, Ron Gingras, Dan Ghidoni, and David Eagleson on improving existing equipment and designing and testing new products. In those days Larry Roberge could run every machine we had in the plant and could make any crazy part we dreamed up in no time at all. It was exciting and rewarding to be part of coming up with all sorts of new ideas and approaches for our Company and industry.

I love to teach and right away I was asked to revise the curriculum for, and teach in, training sessions that the Company had been giving since their invention and production of Class II BSCs. This has carried on to a long teaching career in the Eagleson Institute.

About four months after my arrival I was sent to serve as the Company's gladiator at the NSF Joint Committee meetings where they were battling over the first revision of Standard 49. To this very day I am working on addendum to the Standard.

Within a couple of years I was put in charge of the Test Area and was appointed QC Manager. This resulted in my working with people in most areas of the Company from whom I learned a great deal. A while later I was asked to work on the early stages of a company quality system which grew into David Smith joining us and our achieving accreditation under ISO 9000. Again, this exposed me to many learning experiences through out the Company. All of this yielded grist for the publication mill. I have presented many papers at industry conferences, written chapters for books and edited the latest revision of the Green Book.

Friends thought I was out of my mind to leave a very successful Tenured Full Professorship to go to a small company in Maine. I am very glad I did. It has been GREAT!

CC: What sparked you to pursue a career in microbiology?

DS: I have always been fascinated by small things. I remember as a small child looking at a can of dog food and on the label was a kid looking at a can of dog food and on that can was a kid looking at a can of dog food. I wondered, even as a small child, how small things could get. Later I had a professor at Gordon who taught an introduction to microbiology. I loved it!

CC: I hear that you are a light airplane pilot, a sailor, and once worked as an elevator operator. It seems that you have always been moving. What do these activities say about you?

DS: I love to do different things. The pleasure is in the learning. I loved to learn how to fly and how to navigate.

CC: Do you plan on ever retiring or will you keep working?

DS: I am retired! I just work part time now. I would like to keep my hand in.

CC: You seem to be always busy, what do you do to relax?

DS: Now that I am retired I've been reading for pleasure, I've been developing my homestead, and I do some RV "Camping" as well as sailing and kayaking. We hope to travel in the RV trailer and I will continue improving the homestead.

CC: Finally in closing, what message do you have for the world?

DS: God is good, He loves us, and He wants to help us with our lives.

CC: Thank you Professor, this has been a delightful conversation

DS: You are welcome



Visit Our Web Site:
www.bakerco.com

You'll be able to:

- See our Tradeshow and Event schedule
- Request a quote
- Download product specifications
- Learn about the different types of biological safety cabinets
- Find your local Baker representative
- Request technical assistance
- Read industry specific white papers
- Register your warranty
- Download .pdf files of all current product brochures
- Find a certifier
- Review our FAQs
- Read Acumen research papers

The Baker Company Presents Poster at ABSA

Daniel J. Ghidoni, PE presented a poster at this year's ABSA meeting regarding the biological protection capabilities of large biosafety enclosures used to house robotic pipetting systems, flow cytometers, and other large laboratory equipment that may generate bioaerosols. The poster was co-written by Eugene Lockhart, Mark Zarembo and David Eagleson.

The use of robotics and automated equipment to perform repetitive tasks in the microbiology lab is becoming more prevalent with advances in technology. While this equipment has increased productivity and quality control while reducing worker stress, it has not eliminated the need for engineering controls to assure product sterility and to protect the lab worker from potentially hazardous bioaerosols. Cell sorting and pipetting are two examples of the most prevalent automated procedures that produce bioaerosols; additionally, automation is applied to applications for high-throughput real time polymerase chain reaction (PCR) and drug filling lines where containment of hazards may be necessary. As these techniques become more commonplace, they are increasingly being applied to research involving hazardous agents.

The size of the automated equipment along with support and interface needs usually prevent the use of standard class II Biological Safety Cabinets (BSCs) as the engineering control. The development of large biosafety enclosures for this equipment has identified the need for unique design solutions and test procedures. Performance testing of these enclosures demonstrates that class II performance levels are attainable and verifiable for the various challenges imposed by the large automated equipment and their interface to ancillary equipment. Given the possibility for aerosol generation, risk assessment may dictate that these operations be performed in a biological safety cabinet.

For a copy of the poster or for additional information, please contact us here at The Baker Company at 800-992-2537

Arnold G. Wedum Award — *Continued from Page 1*

Dr. Stuart has more than 50 publications to date, including book chapters for CDC, ASM and ABSA's anthologies. He has given numerous presentations at ABSA, and has taught bio-safety workshops around the world. He is one of the Eagleson Institute's most valued instructors, teaching about 10 week-long classes a year. International work includes teaching classes in Hong Kong and this April (2005) in China, teaching for the Dept of Defense at VECTOR in Russia, and a trip to Peru to help this country develop a Biological Safety Cabinet certification program. In addition, he serves as a mentor to many other instructors, as his teaching skills are admired by many. One of his undergraduate emphases was in education, and he continually looks for innovative ways to educate others.

His continual high level of enthusiasm and energy for every task that he takes on, from his research, his writing, to his teaching. He gives every assignment his serious attention, and helps every individual who comes to him with a request. Over the course of his career, large numbers of bio-safety professionals have benefited from his contributions to the field.

"Dr. Wedum was a true pioneer in inventing Biosafety as we know it, not only a pure scientist but also a man who applied his science to further the health and safety of the research community. So it is fitting that Dave has been honored in Dr. Wedum's name, he also is a master at both. I consider myself fortunate to have worked so long with such an outstanding individual, he has touched many lives and contributed so much."

— Dennis Eagleson, President & CEO The Baker Company

Please join The Baker Company in congratulating Dr. Stuart on receiving this prestigious award

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