A Message from your President, Angela Huckstep
(thedangeloid@gmail.com)

Dear Readers,

Well, we've made it! First of all I want to welcome all of you who are presenting their research papers at the 2012 Virginia Junior Academy of Science Research Symposium. You all have worked indubitably hard on your papers, and now you all have earned the chance to share your scientific endeavors with judges, fellow VJAS members, and fellow sponsors—job well done. The student government is extremely excited to be here along with the VJAS members at Norfolk State University, as this is the one time of the year when we all get the chance to congregate and show the laborious fruits of our school year. Although this goes without saying, please remember to treat the NSU campus with the utmost respect, along with fellow members, sponsors, judges, and NSU staff. In this issue, we have a short article containing a few last minute tips for polishing your ten-minute presentations, as well as an extended exposé on this year's Dinner with the Scientists attendees. Take full advantage of all the opportunities that this year's Symposium has to offer, and make it a memorable learning experience for yourself and those around you... and remember... the VOICE would love to hear about your experience at the 2012 Symposium, or any contribution for that matter, so please remember to submit your thoughts and findings to us.

Best of luck to everyone participating!

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Last Minute Tips for Symposium Presentations!

MEGAN STEWART • HANOVER, VA

1. **Practice!** Be sure to know your presentation and are confident you are able to answer the judges’ questions. By practicing your presentation with teachers and peers you become more familiar especially with the time constraints.

2. **Be prepared for technological issues!** Have a backup plan if you are not able to open and navigate your presentation using the University’s computers. Make sure your presentation is in a compatible file type and anticipate any future difficulties when you load your presentation prior to the beginning of the session.

3. **Relax and be confident!** This is your research and you have worked hard to be here. Be proud of yourself and enjoy the experience of sharing your research with experts and peers. If you have practiced your presentation there is no reason to be nervous!

4. **Be on time and watch other presentations in your category.** When you watch other presentations in your category you become familiar with the judges who will be evaluating your efforts and get to learn from the efforts of your peers.

5. **Enjoy yourself!** Of course the main focus of these three days is your presentation and representing your work to the esteemed judges in your field, but there are also opportunities to enjoy yourself and socialize with your peers who share a common interest in science. Take this time to meet new people and be proud of your accomplishments here.
For the 2012 Symposium, the student government thought they would give VJAS members a bit more of the upper hand when it came to the annual Dinner with the Scientists event—how is this may you ask? Well, we have gotten ahold of a few of the scientists that will be dining with us, and have gathered some information about them to give you a sneak peek as to what is in store. This way, members will be better familiar with the gracious scientists that have offered to dine with us this year. This event is designed so that budding scientists have the chance to rub shoulders with the professionals, so be sure to take advantage of this opportunity to ask questions!

**Dr. Martin David Crosby** received his PhD in Fisheries Biology from Auburn University in 1987. He earned a MS in biology from West Georgia College (University) in 1980. Dr. Crosby also attended the University of Georgia receiving a BSA in Biological Science in 1974. Since 1993, Dr. Crosby has been the Fish Health Specialist with the Virginia Cooperative Extension at Virginia State University. He also worked for the Mississippi Cooperative Extension service, MSU in Stoneville, Mississippi as an Area Fisheries Specialist. Since 1998, Dr. Crosby has served as secretary, editor and chair for the VAS Section Agriculture, Forestry and Aquaculture. Dr. Crosby is currently serving as councilor for this section. For many years, Dr. Crosby has participated in the judging of student papers in the JVAS. Dr. Crosby’s current duties and responsibilities as fish health specialist include: managing the fish health program at VSU which includes the fish health diagnostic laboratory for identifying and recommending solutions to disease outbreaks, disease prevention by educating fish producers on fish health management through workshops, newsletters, and fact sheets, and fish health research on current disease problems in Virginia. Other duties include the operation of the catfish hatchery and conducting catfish production research. He has published numerous extension publications in aquaculture, water quality and fish health. As an Extension Specialist, he is interested in: the Ecology and Taxonomy of Fish Parasites; high Intensive Catfish Production Methods; and Microbial Ecology of Fish Ponds. Dr. Crosby organized a Symposium for the 5th International Conference on Recirculating Aquaculture on "Streptococcus, An Emerging Pathogen of Recirculating Aquaculture Systems. Dr. Crosby is a member of the following professional organizations: American Fisheries Society (Fish Health Section & Fish Culture Section), the American Society of Parasitology, American Microscopical Society, and the Helminthological Society of Washington.
Matthew Banks grew up in small farming town outside of Dayton, OH. His post high school education path includes earning a Doctor of Pharmacy from Ohio Northern University in Ada, OH (2003), a Doctorate of Philosophy from Wake Forest University, Winston-Salem, NC (2007), a Postdoctoral Fellow at Emory University, Atlanta, GA (2007-08), a Postdoctoral Fellow at Virginia Commonwealth University in Richmond, VA (2008-10), and is a Assistant Professor in the Department of Pharmacology and Toxicology at VCU (2010-present) He has completed research on MDMA induced neurotoxicity and hyperthermia; understanding the behavioral and neurochemical effects of abuse drugs, and the development of treatment strategies; and understanding the neurochemical effects of pain. Banks has received research awards at the pharmacy and graduate student level and also as a postdoctoral fellow. He is also a licensed pharmacist and practiced pharmacy during graduate school.

Michael Korn grew up in Germany and received his degrees from the University of Freiburg in Chemistry with an emphasis in polymers. He came to the US in 1994 and has lived in various places, including Pittsburgh, Pennsylvania, North Carolina, Texas, and Uganda, Africa. Some projects he has been involved in include organic semiconductors, liquid crystals, and polymers. He has had students work with him on organic semiconductors who presented a poster at the VAS fall meeting last year and were awarded a $500 research award.

Dr. Gerald Engel holds the Frederick H. Leonhardt Computer Science Chair, and he is Professor of Computer Science and Engineering at the UCONN’s Stamford Campus. His research interests include computer education and the social and ethical impacts of computing. Dr. Engel is distinguished for initiating curriculum studies in computer science, which have defined the field. Additionally Dr. Engel was a leader of the development of the accreditation program in computing. He served as 2005 President of the IEEE Computer Society, the oldest and largest membership organization for computing professionals. He is currently serving as President of the IEEE Society on the Social Implications of Technology and Vice President of the International Federation of Information Processing. Dr. Engel is a fellow of the IEEE, ACM the Computer Science Accreditation Board, and the Accreditation Board for Engineering and Technology. Dr. Engel received his B.S. from Hampden-Sydney College, M.A. from Louisiana State University and D. Ed. in computer science from Pennsylvania State University. In addition to the University of Connecticut, Dr. Engel also served at the Virginia Institute of Marine Science, Old Dominion University, Christopher Newport University, and the National Science Foundation.

Dr. David S. Torain II is from Chapel Hill, North Carolina and attended North Carolina State University in Raleigh, North Carolina. Publications that Torain has worked on include “An Eigenvalue Search Method using the Orr-Sommerfeld Equation for Shear Flow” in the Journal of Computational and Applied Mathematics, and “Using Technology to Support Algebra Teaching and Assessment: A Teacher Development Case Study”. He has received a grant from the National Science Foundation for a study concerning Dynamical Systems (A dynamical investigation of Unmanned Aerial Vehicles: Control of Chaotic Clusters (Networks)) with Dr. Ira Walker (Aerospace Engineer) and Dr. Morris Morgan (Civil Engineer) in February of 2012, as well as one from the Virginia Space Grant Consortium (VSGC), an Aerospace Partnership in Education, Research and Industry from 2008 to the present. Torain has also been recognized by the Federal Bureau of Investigation’s (FBI) Citizens’ Academy at the Norfolk Field Office of the FBI (2011).

Gene R. Bryson, Sr. is from Bassett, Virginia. He attended Brevard College in Brevard North Carolina, and earned his BS and MS degrees from Virginia Commonwealth University. Bryson’s studies include research on Juvenile Diabetes, Adult Diabetes, Reyes Syndrome, and Crohns Disease. He has received recognition in
gastroenterology for his study involving how “Transforming Growth Factor Beta Selectively Augments Collagen Production in Human Smooth Muscle Cells, and in analytical biochemistry for “A Microassay to quantitate Collagen: Synthesis by Cells in Culture”, and “An in vitro microassay to Quantitate collagen synthesis and its utility for analyzing the effects of defined inflammatory mediators”. Apart from his scientific endeavors, Bryson also coaches the US Master Swim team.

Chemistry chair at the Symposium, Doreen DeVore was born and raised in Iowa, and has lived in Harrisonburg since 1977. She first attended the University of Iowa, earning a BS of General Science (Medical Technology). DeVore has been the administrative assistant for the Shenandoah Regional Science Fair since 1988, and the administrative assistant/co-director of the Virginia Junior Science and Humanities Symposium since 1992. DeVore believes that a science background is useful to every citizen no matter what career path they take, even the mommy-volunteer track. The critical thinking learned in science is helpful in evaluating everything from political concepts to choosing consumer items.

Dr. Joseph D'Silva, Ph D is originally from Dhaka, Bangladesh, and now resides in Chesapeake, Virginia. He attended college at Notre Dame College in Dhaka, Bangladesh; the University of Dhaka, Bangladesh; the University of British Columbia, Canada; and the Royal Holloway College (London University) in Britain. D’Silva is a parasitologist, and has worked with fish and rat parasites. He began with identifying parasites from the guts of fish and then later on looking at histological structure of a parasite. He has also worked on circadian rhythms in a round worm in rats. He and his students, along with me and another researcher from Norway, have described a new species of parasite from a migratory fish from the Bay of Bengal. At Norfolk State University D’Silva has been studying a protozoan parasite in the oyster in the Elizabeth River along with a group of students. These parasites cause huge mortalities in oysters in the Chesapeake Bay, and their epidemiology is of interest to many. D’Silva states that he is fascinated by free living microscopic invertebrates in small water bodies: “Last summer two high school students identified several of them while working with me. This summer we intend to work on rotifers and their ecology. If you like to work with microscopic animals, I would like to help you. One might think that all the animals in the world have been discovered. This is not true and there are still many exciting discoveries that remain to be made. I hope one day some of you will take my place and come to know what a wonderful world we live in.”

Preetpal Singh Sidhu is from Richmond, Virginia and teaches at Virginia Commonwealth University. Sidhu has earned a PhD in Medicinal Chemistry from School of Pharmacy at Virginia Commonwealth University, and is currently working as Post Doctoral Fellow. Sidhu has worked on various projects for drug discovery of novel inhibitors for thrombin as anticoagulant drug. In these projects, Sidhu gained experience in synthetic chemistry, as well as various analytical tools and computational drug design process. In addition Sidhu received the “Graduate Student Research Award” in 2009 at the American Association of Pharmaceutical Scientists.

Dell Young is from Franklin, Virginia. Young attained an undergraduate degree in Biology from Virginia Wesleyan College, and received a MS in education from Old Dominion University in Virginia Beach, Virginia. Young has spent 35 years as an educator in Virginia Beach Public Schools teaching AP Biology; as well as being a reader for AP Biology tests for two years, the current Director of the Tidewater Science and Engineering Fair, and a current coach for public teachers for VISTA. In addition, Young received the teacher of the year award from her high school in 2006, and the National Science Foundation’s Presidential Award for Excellence in Math and Science Teaching in 2000.

Thomas C. DeVore represents the Department of Chemistry and Biochemistry and The Center for Materials at James Madison University. He attended Muscatine Community College, and earned his BS degree in Chemistry and
Mathematical Sciences from the University of Iowa, and his Ph.D. in Physical Chemistry from Iowa State University, along with post-doctorial training at the University of Florida. DeVore’s research has included topics concerning the catalytic photospliting of water, reactions of alcohols on metal oxide and sulfide catalysts, thermal decomposition of metal hydroxides, and metal oxidation reactions. He has earned the LaRose Fellowship in Physics, is a Madison Scholar, and has received the Madison Service Award. DeVore represents the Chemistry Section chair of the VAS.

**Suely M. Black** is from Rio de Janeiro, Brazil. She has a B.Eng. in Chemical Engineering and MS in Chemistry from Rio de Janeiro Federal University, and a M.Ph. and Ph.D. in Chemistry from Columbia University. She is currently the Director for the graduate scholarship program, IGERT-MNM, that supports students to participate in an innovative research and education program in collaboration with Purdue University and Cornell University. Students, called “trainees”, participate in interdisciplinary research in magnetic and nanostructured materials, and meet weekly to learn about the technical aspects of the research and develop professional skills that are essential for their success after graduation. The National Science Foundation has funded this project for four years, for a projected total of $3.2M.

**Peter J. Kennelly** represents the Department of Biochemistry at Virginia Tech. He earned his BS in Chemistry from the Illinois Institute of Technology in Chicago, Illinois (1978), was a Lab Technician at the Illinois Institute of Technology (1979). Kennelly earned his Ph.D. BCHM from Purdue University in West Lafayette, Illinois (1985), and completed his Postdoctoral at the University of Washington in Seattle, Washington (1989). His research is focused on the origins and development of protein phosphorylation-dephosphorylation as a mechanism for controlling sensor response processes in living organisms. In humans, it is estimated that 30-50% of all proteins are subject to modification via the covalent attachment of a phosphate group. The human genome contains 500 genes that encode the protein kinases responsible for catalyzing this process, and an equal number of protein phosphatases that catalyze the hydrolytic removal of these groups. He uses ancient microorganisms, the Archaea, to study the form and function of the earliest protein kinases and protein phosphatases. In addition, Kennelly received the 2009 Distinguished Agricultural Alumni Award from Purdue University. He has also served as a Career advisor for over twenty years, head of the Virginia Tech Department of Biochemistry (2005-present), the Chair of the Education and Professional Development Committee, has been apart of the American Society for Biochemistry and Molecular Biology since 2012, is a co-author of Harper’s Illustrated Biochemistry (textbook), is a member of the Editorial Boards of the Journal of Biological Chemistry, Analytical Biochemistry, Archives of Biochemistry and Biophysics, and has reviewed Grants and Fellowships for NIH, NSF, Fulbright.