Virginia Scientists

Volume XVI, Issue I *September-October, 2006*

Virginia Tech, 2006 Meeting

As is our tradition, the 84th VAS Annual Meeting was held concurrently with the 65th Annual Meeting of the Virginia Junior Academy of Science at Virginia Polytechnic Institute and State University, May 23-26, 2006.

Elected Virginia Academy of Science officers for 2006-2007 are:

President Donald A. Whitney, Dean of the Graduate College, Hampton University.

President-Elect Werner Wieland, Biological Sciences, University of Mary Washington.

Vice President James H. Martin, Biology, J. Sargeant Reynolds Community College.

Secretary Jennifer S. Wayne, Biomedical Engineering, Virginia Commonwealth University. Treasurer Arun Kumar Verma, Mathematics, Hampton University.

President Don Whitney

In the VJAS, volunteer State-wide Readers Panels reviewed and commented on submissions, and the papers of 487 middle and high school researchers were selected for presentation. The "VJAS Experience," as past Director Don Cottingham has called this 3-day immersion in Virginia college life, included formal scientific communications of the VJAS researchers' findings, "Dinner with the Scientists," presentations at VAS scientific sessions, a huge pizza party, tours of Virginia Tech labs and research facilities, and living in the dorms of one of America's finest institutions of higher education. This year's George W. Jeffers Memorial Lecture featured Stefan Duma, Director of the Virginia Tech-Wake Forest Center for Injury Mechanics; a second lecture by James Beard, Curator of the Virginia Museum of Natural History, explored volcanoes in Virginia. *(See "2006 Meeting" on page 2)*

Physician Honored with AAMC Humanism in Medicine Prize

By Elizabeth Simpson, The Virginian-Pilot, November 7, 2005.— Reprinted with permission.

As a Norfolk high school student in the 1950s, Melissa Warfield won a VJAS Outstanding Research Prize. At William and Mary, Dr. Warfield studied biology under VAS co-founder Donald Davis, who is also recognized for establishing the Virginia Institute of Marine Science. She practiced her specialty in medicine, pediatric oncology, for most of her career at the Children's Hospital of the King's Daughters in Norfolk. Teaching EVMS physicians biomedical ethics has been another focus for over 40 years. In 2002, Melissa was recognized, with Donald Davis's family, during the 80th VAS Meeting Banquet at Hampton University.

It's been more than a decade since her whistling drifted through the halls of Children's Hospital of The King's Daughters, and years since Dr. Melissa Warfield pressed her hand-carved wood animals into the hands of nurses, a nod of respect she gave to those on the front line of comfort for her small patients.

Many a semester has passed since Melissa Warfield peppered pediatric residents at Eastern Virginia Medical School with questions or set a young cancer patient on her lap for a spin on a stool. It's been a while, too, since she had a heart-to-heart talk with parents or paid a pharmacy bill they couldn't afford. But they have not forgotten her.

No, doctors and nurses still quote Warfield, and patients name children after her. Former medical students talk about how she guided them to just the right career path, and scores still finger the carvings – geese, rabbits, dogs – she whittled for them in the evenings when she left the well-lit halls of the hospital she helped establish. There must be hundreds of the wood mementos out there – as well as admirers.

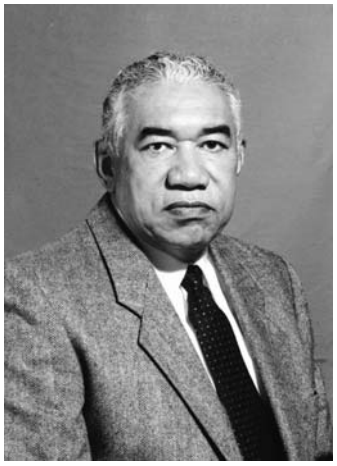
A body of people Warfield touched as mentor and doctor gave testament so strong that a national organization of medical educators honored Warfield with a cov-

(See "Melissa Warfield" on page 2)

2006 Meeting (from page 1)

Over $150,000 in scholarships and prizes were awarded to VJAS students. These included fully funded trips to the 2007 AJAS/AAAS meeting in San Francisco, three new scholarships from Virginia Tech, and the two annual prizes from the Virginia Environmental Endowment: The Frances and Sydney Lewis Scholarship and The Henry W. MacKenzie, Jr. Scholarship were awarded to Leah J. Hendrix and Abby M. Hughes, respectively; both are from Chesapeake Bay Governor's School in Bowling Green. Additional scholarships are sponsored by Old Dominion University, Randolph-Macon Woman's College, Randolph-Macon College, Virginia Wesleyan College, Virginia Commonwealth University, Hampton University and Bethel High School students.

VAS is indebted to VJAS Director Susan Booth, the Academy's 33-member JAS Committee, and the hundreds of wonderful teachers, donors, and volunteer scientists who make our annual "VJAS Experience" such a challenging, fulfilling, and successful event in American science education.



Fellow Bob Willis

VAS scientists shared their enthusiasm and interests with VJAS members and, at the Sidney S, Negus Memorial Lecture, heard one of the more familiar public faces of the national global warming debates: Patrick Michaels, Virginia's state climatologist and University of Virginia Research Professor of Environmental Sciences. Over 150 research papers and 43 posters were presented in the Academy's 18 disciplinary sections.

The newest Academy Fellow, Robert A. Willis, Jr., Professor and Chair of Computer Science at Hampton University, was named at the annual banquet. Three VAS endowed prizes were also awarded:

- Maria Happel, College of William and Mary – The Blanton M. Bruner Memorial Scholarship.
- John Michael Joyce, Longwood University – The Vera B. Remsburg Memorial Scholarship.
- Jennifer Carman, University of Richmond – The Edward S. Harlow Memorial Scholarship.

***Melissa Warfield** (continued from page 1)*

eted award. The Association of American Medical Colleges on November 5 presented her its "Humanism in Medicine" Award. The national prize honors one exceptional mentor each year.

Now 75 and suffering from a lung ailment, the retired EVMS professor was too sick to attend the gala affair in Washington, D.C. It's the type of attention she typically avoided anyway. "I don't get too worked up about things like that," Warfield said from a hospital bed set up in her modest home near Ocean View in Norfolk. But, she added in her understated manner, "it is an interesting thing to have happen."

Indeed, interesting things happen around this no-nonsense woman with the driest of wit. She was a behind-the-scenes kind of doctor who didn't call attention to herself or make more of things than needed be. She had an integrity about her and characteristics that stood the test of time: An approachable nature…A sense of calm in the middle of crisis…An upbeat demeanor that often led her to whistle. "You never hesitated to call her in the middle of the night about a patient," said Kim Stewart, a nurse who worked with Warfield treating children with blood disorders, the doctor's specialty. "She would always be pleasant and rational."

Warfield's relationship with the hospital goes back to when she was 12 years old. She used to put away clean linens in the closets at York Street Clinic, the precursor to CHKD. In 1960 the Granby High School graduate returned to the clinic as a pediatrician, then worked shoulder to shoulder with others to build the region's only children's hospital. Warfield had a vision for a hospital with private rooms for children instead of wards and a place where parents could spend the night. "Those ideas were avant-garde at the time," said Dr. Jean Shelton, one of Warfield's many medical residents.

She once donated her paycheck during a budget crisis. Her list of accomplishments continued once the hospital became bricks and mortar. She started the pediatric residency program at EVMS and served as its director. She diagnosed early lead poisoning cases in Norfolk, then met with public health officials to set up a prevention project. She established programs for abused children and those with sickle cell anemia. In her later years, she established bioethics committees and taught the subject at EVMS. She loved teaching as much as treating. "It all goes together," said Warfield, now a professor emeritus.

Dr. Rebecca Byrd, who now heads CHKD's blood disorder unit, was a medical resident under Warfield in the early 1970s. She remembers learning everything from the philosophical to the ordinary. Warfield showed students how to re-wrap the babies once an exam was

finished. "She had a certain way she thought it needed to be done," Byrd said.

Warfield's mind still is sharp as a scalpel, but she doesn't wax poetic about her accomplishments nor express much emotion about her award. "When you get this old, there aren't many surprises," she said one evening last week. Her hair, cut short and sensible, was neatly combed. Her dark brown eyes were lively and observant. Despite the tube that fed her oxygen, she sometimes ran out of air by the end of a sentence. One of her around-the-clock caregivers suggested she wear gold earrings for a photograph. "Let's leave them off," Warfield said. "I want to look like my regular self."

Warfield, an only child, had no children and never married, so her patients and medical students were like a family to her. She could be on the hospital doorstep in 10 minutes if need be and often was. "That's what the job calls for," she said.

Patients remember that kind of thing – at least 35-year-old Tina Hooker does. The Virginia Beach woman was 11 years old when Warfield told her she had leukemia.

What stands out in Hooker's mind was Warfield's forthright manner. "She said the chemo would make me sick and that I would lose my hair," Hooker said. "She said it's going to be a rough road but that I'd be fine." Warfield laid out the survival odds for Hooker's parents and told them they needed to be strong for their daughter.

"I had some boo hoos with my mom," Hooker said. "But Dr. Warfield made me snap out of it." Four years later, when she was discharged, she asked Warfield whether she thought Hooker could have children someday. "I don't see any reason why not," the doctor told her. "But get married first." Hooker did. Ten years ago she named her first child, Melissa, after Warfield.

Especially in Warfield's early years as a doctor, the survival rates of childhood cancer were grim, so her healing nature often helped others in the midst of death. Warfield dealt with patients and families with compassion and candor. Sometimes she didn't need words, hospital chaplain Evelyn Keever said; rather she would sit quietly with family in a dying child's room. But those are things, Warfield said, that are true of any doctor, especially those who specialize in illnesses such as cancer and sickle cell anemia. "The reason you get into medicine is to help out."

She showed the same dismissive style when she was named Tidewater Woman of the Year in 1983, "I try to be good at what I do – my medical trade – and try to be a good citizen, which is what I think everyone is supposed to do," she said that year. "I hadn't noticed that I was any better at all than anyone else."

Other people did and still do. When EVMS medical students Helen Harvey and Frances Wood learned of Warfield through some of their professors, they nominated her for the award from the Association of American Medical Colleges. "Even in a field where there was often little to no hope at the time, she found a way to give back," Harvey said. "She was a humanist first and a doctor second."

After they found out she had been chosen for the honor, they set out to gather photos of her – without much success. One of Warfield's caregivers still was searching the home for one last week. "Is this you?" she asked, holding up a graduation photograph. Warfield peered at the picture. "No, it doesn't look like me…. Must be a former student." "What about this one?" "No, that's my mother."

Warfield did volunteer work after she retired. She whittled and read. A recent favorite lighted up her face. "I love my Harry Potter," she said.

A decade has passed since this sensible soul left the halls of the medical school and hospital, but people still recall her upbeat whistling, her careful re-wrapping of babies, her steady presence in the rocking chair where she wrote out doctor orders.

She allows for a small appreciation of that. "It's nice," she said, "to be remembered."

Reach Elizabeth Simpson at (757) 446-2635 or elizabeth.simpson@pilotonline.com.

Aravich also Honored

The Association of American Medical Colleges named Dr. Paul Aravich, EVMS Associate Professor of Pathology and Anatomy, to receive one of the four awards nationally for Distinguished Teacher.

AMHC noted, "Dr. Paul Aravich makes community service a priority for his students, encouraging them to go beyond grades and get involved outside the medical school. In recent years, he has partnered his students with allied health professionals for volunteer service with a local chapter of the Alzheimer's Association and has arranged for his students to teach seventh-graders about bicycle helmet safety."

AAAS Annual Meeting, St. Louis MO, February 16-20, 2006

Report of the AAAS/NAAS Representative, James P. O'Brien

VAS Council, Virginia Tech, March 25, 2006

AAAS Affiliates Meeting, Feb. 17

Alan Leshner, AAAS Executive Officer presiding.

I. Update on Evolution vs. Intelligent Design/Creationism and ways Scientific Community Can Work to Effectively Defend Science and Science Education.

Eugenie Scott, Executive Director, National Center for Science Education

1. Three (Mythic) Pillars of Creationism

1. Evolution is not believed by scientists like it once was.
2. Evolution and faith are irreconcilable.

[If framed this way, people will choose faith; need mainline religions to "step up to the plate."]

3. Only fair to balance evolution with other information.

[e.g. "teach the controversy" or "teach strengths and weaknesses of evolution" or "critical analysis of evolution."]

2. Recent Victories

(A) Pennsylvania: Kitzmiller vs. Dover re newest form of creationism: i.e., Intelligent Design… "Thoroughly trounced" by tracing roots back to creationism. The judge (a Bush Appointee) "got it." (Supreme Court struck down creation science in 1967). Case is NOT a national precedent, **BUT** thoroughness of the argument and judges thorough opinion will serve as guide for other cases.

(B) Georgia: Spellman case brought about removal of (tepid) disclaimer in front of science textbooks. Judge decided disclaimer did advance religion in the "fairness" pillar because of history of the origins of the disclaimer (emanated from creationism).

(C) Southern California. Termination of a high school philosophy class because impetus was creationism.

(D) Ohio: 2002 state school board included "critically analyze aspects of evolution" in science education standards. A few weeks ago, because of Ohio Academy of Science and Ohio Concerned Citizens, this standard was rescinded.

In sum, creationism is illegal because it violates first Amendment. Even so, "critical analysis" approach has been proposed in South Carolina. So far in 20 cases, AAAS has advocated local intervention; national resources have been brought to bear in legal disputes.

However, in spite of legal and regulatory successes, the problem is not solved. In fact, individual science teachers often self-censor in the face of possibly upsetting some parents.

What strategies can AAAS pursue to help science educators? Scientists must come to aid of teachers (Leshner):

- get elected to school boards; attend school board meetings (familiarity, at least)

- write op/ed pieces (not just letters-to-the-editor)

-speak up in public venues available (hearings, neighbors, museums/conservancies/zoos, other grassroots)

-affiliates speak up, advise legislators

-responsiveness of AAAS Board (can react within 36hr.)

-information re other organizations (i.e., opt-in to emails; join)

-National Center for Science Education
-National Association of Biology Teachers
-American Critical Society
-Alliance for Science

Roles of Affiliates – Need more than just statement of website… Need widespread personal commitment.

Some Suggestions:

-need real human beings (must be locals) to go to school board meetings

-appeal to their better nature

(e.g., fairness to children so they can grow up to compete in global economy)

-give officials a way out of the dilemma

(e.g., inform how recent cases have been decided, how most parents support sound science curricula, etc.)

-officers/members keep up-to-date (*Science*, opt-in to emails) [handout]

Notes from discussion (and other events):

Science Teachers on front line of attacks.

Scientists have failed science teachers:

Inadequately prepared them.

Inadequately prepared non-science majors (general public).

University tenure systems (must include service to science education – e.g., mentoring/advocacy)

Apathy.

Disconnect from the public (remoteness, perceived arrogance).

Remedies…

Curriculum Reform

-Science research track

-Science teaching track

Teach What and How of science as well as content to undergrads, especially future teachers so they are informed and empowered

"All politics if local"

-scientists must get on school boards.

-ally with fellow mainline church/synagogue congregants.

-must write op/ed articles.

-early warnings and resources for national legal resources.

Science literacy in U.S. high schools, universities & public is very poor.

Need to respond at all levels of education and preparation

-Where will undergraduates come from?

-Where will future scientists come from?

-Where will future science teachers come from?

-How do we better prepare all K-Professional?

Next "battleground?" … Neuroscience.

Nothing like a crisis (crises) to promote self-criticism, reflection and action. May be on the verge of transformation in American science and science education. At least the warning flags are being raised.

II. Congressional Innovation Initiative/President's American Competitiveness Initiative.

William Bonvillian, Vice President for Government Relations, MIT Washington Office (slides handout)

1. First major competitiveness legislation since 1987 Fair Trade Act. Then: Japan launched "lean manufacturing," also German productivity/share of global market. So, quality built into product, worker empowerment, and just-in-time supply.

2. Present competition is very different from Japan/Germany pressures of 1987. Now: about manufacturing and China. China can codify and digitize manufacturing of large amounts of components worldwide. The other new element is global competition to U.S. lead in services – new competitive era..

3. Issue for U.S. companies arises from fact that they are so pared down to core components they may not be able to cope with discontinuous change and disruptive innovation.

4. Remedies? High risk grants, innovation clusters, phase 3 "bridge" programs, advanced manufacturing, service systems science, tech talent program, intangibles accounting, professional science masters, ARPA-E (See slide titles numbered "2-10").

III. National Association of Academies of Science Assembly of Delegates, February 18

Student/sponsor travel, especially to Far East meetings is expensive. Informed Lyn Elfner I would speak to Ertle Thompson about the intent for the Dallas Cocke Memorial Scholarship and the possibility of its use for such travel.

I will also consult Ertle about his NAAS Directory library about transmission to Lyn Elfner, archivist.

IV. Section Y: General Interest in Science and Engineering, February 18

Fellows allotment = 5 …11th largest (n = 1700) of 24 Sections, with many secondary members. Email Fellow recommendations/ nominations/vita to Section Y Secretary JoAnn Valenti … valentijm@yahoo.com

Council on Public Understanding of Science Prize: Most worthy are not being nominated.

Also attended Psychology and Education Sections' meetings.

Respectfully submitted,
James P. O'Brien

A Progress Report on The Flora of Virginia Project-Summer 2006

On August 17, 2006, the Foundation of the Flora of Virginia Project (FFVP) will celebrate its 5th anniversary. Over these last five years the FFVP, working with the Academy and other Virginia organizations and individuals has made exciting progress. Below is a summary of this progress:

- **A contract with the University of Virginia Press to publish *The Flora of Virginia* by 2011-2012 has been offered and will be signed by the end of this summer**
- ***The Flora of Virginia* will be a one volume manual for plant identification of 3800 native and naturalized species occurring in Virginia**
- **The manual will feature 1435 core species illustration and 35 illustrated plates to assist in identification of species of difficult genera**
  - **More than 450 of the core illustrations have been completed with 200 more scheduled for completion by the end of this year**
  - **The Academy has funded approximately 200 of these illustrations**
- **Preparation of the contents of the manual is making progress**
  - **Dichotomous keys to identify genera and species of one half of the 204 families of vascular plants in Virginia are completed**
  - **The first stage of writing species descriptions is completed for one half of the 3800 species; work on genus descriptions has begun**
  - **The Fellow designed a contribution to fund the writing of 125 of the descriptions**
  - **The second stage of species descriptions using herbarium specimens is underway**
- **Fund raising is continuing to make progress**
  - **Approximately $525,000 of the $2,200,000 Project budget has been raised**

    in direct and in-kind contributions
  - **A professional grant writer is now under contract**
  - **Outreach to let people and groups know about the project and to raise funds continues**
  - **Presentations to groups, articles in newspapers and magazines (the May issue of *Southern Living* in the Mid-Atlantic supplement included an article on the Flora of Virginia Project and Marion Lobstein in "Finding Virginia's Flora")**

The dream of the Academy to support development of a modern Flora of Virginia is being realized. The past and continued support of the Academy and Academy members is essential to its success. The work of John Clayton of colonial Virginia will be brought into the modern World. Check *The Flora of Virginia* website for updates on the project and how you can support the project: http://www.dcr.state.va.us/dnh/vaflora.htm.

How You Can Support The *Flora of Virginia* Project

You can support The Flora of Virginia Project by making a contribution of any amount and/or you may subscribe to the first edition of the *Flora of Virginia* for a donation of $1000. Donations may be made in multiple year pledges.

Donations to the Flora of Virginia Project5, a 501(c) (3) organization, are tax-deductible as permitted by law.

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P.O. Box 512, Richmond

VA 23218-0512

For questions or to donate securities, please call Chris Ludwig, Director of the Flora of Virginia Project, at 803 271-6206.

Marion Lobstein is also available for you to contact with questions at 703 636-7150 or at

mblobstein@earthlink.net.

THE TIME IS RIGHT FOR A NEW FLORA FOR THE OLD DOMINION!

Long Time Academy Member Passes

William J. Watt, sustaining member of the Academy and former dean of the College at Washington and Lee University, died July 25, 2006 at the age of 80. Watt earned his B.S. from the University of Illinois in 1949, his masters from Cornell University in 195,1 and his Ph.D. in inorganic chemistry from Cornell in 1956. He previously taught at Cornell and Davidson and served in the U.S. Army from 1944-46. Watt was named assistant dean of the College in 1966, associate dean two years later and dean in 1971. He retired in 1994. During his career at W&L, he wrote several successful grant proposals to fund faculty research, spearheaded a Campaign for W&L that raised $531,000 from faculty and staff and even resolved a student protest in 1970 over wearing robes to graduation. He also chaired two presidential searches and helped the university with its transition to desegregation in the late 1960s and coeducation in the mid-1980s. Watt was an active participant in his community, too, serving as president of the Rockbridge Chapter of the Virginia Museum of Fine Arts, as president of the Rockbridge Concert-Theater Series, as president of the Lexington Branch of the English Speaking Union, as a board member of Episcopal High School, as chairman of the Rockbridge Regional Library board, as a member of the vestry of R. E. Lee Memorial Episcopal Church, as a member of the Fortnightly Club, and as a member of the board of publishers of Shenandoah. "Bill's contributions to Washington and Lee University as faculty member and dean and citizen of the community, have been matched by few others" said Ken Ruscio, president of W&L. "But he will be remembered even more for the manner of his leadership, his warm intelligence, his civility and his concern for faculty and students."

Academy Seeks New Virginia Scientists Editor

This is your chance to make a contribution!

VIRGINIA SCIENTISTS is the newsletter of the Virginia Academy of Science and is published three times a year. In addition to members, it is also mailed to government officials, members of the General Assembly, and Virginia college and university presidents. Correspondence should be addressed to the Co-Editor at: Tidewater Community College, 1700 College Crescent, Virginia Beach VA 23453, (757) 822-7447, FAX (757) 427-0327, jobrien@tcc.edu.

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Membership in the Academy is organized into sections representing various scientific disciplines as follows:

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7. Biomedical & General Engineering
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