

Bhakta Rath Receives the Padma Bhushan Award

Bhakta Rath, associate director of research and head of the Materials Science and Component Technology Directorate at the Naval Research Laboratory (NRL), was awarded the Padma Bhushan Award by the president of India on April 14. Rath joined TMS in 1961 and was named a Fellow in 1992.

The Padma Bhushan Award recognizes distinguished service of a high order to the nation in any field—the arts, sciences, and public service. This highly coveted honor recognizes life-long contributions and is analogous to the knighthood of the United Kingdom and the Presidential Medal of Freedom of the United States, according to Rath. He received the award for “Excellence in the field of science and exceptional service toward the advancement of science.”

“I was greatly surprised, deeply honored, and humbled to receive this recognition with the most distinguished luminaries of India,” Rath said. “Behind every success story there are always several individuals whose relentless efforts and commitment result in success. There are too many individuals who have been key to my credentials over five decades to name, but it is truly they who should be collectively



Figure 1. The president of India, Smt. Pratibha Devisingh Patil (left), presents the Padma Bhushan Award to Bhakta Rath (right).

recognized with this award.”

Following Rath’s tenured faculty appointment at Washington State University and stints at the corporate research laboratories of United States Steel and McDonnell Douglas, he began his career at NRL. In 1976, he served as head of the Physical Metallurgy Branch. Rath later was selected to head the Materials Science and Technology Division. Currently, he manages multidisciplinary theoretical and experimental research to discover and exploit improved materials, generates new concepts associated with materials behavior, and develops advanced components based on these new and

improved materials and concepts.

Rath is a Fellow of several engineering societies in the United States and abroad and has been honored by the NRL, the Department of Defense (DOD), and numerous other professional and scholarly organizations. In 2008, he was elected to the National Academy of Engineering and received the *Acta Materialia, Inc.* J. Herbert Hollomon Award. In addition, Rath has received numerous awards including the DOD Distinguished Civilian Service Award, Fred Saalfeld Award for Outstanding Lifetime Achievement in Science, and the Presidential Rank Award for Distinguished Executive.

Justin Bennett and Ryan Morrison Receive Tau Beta Pi Scholarships



Justin Bennett



Ryan Morrison

Justin R. Bennett, an undergraduate student in the materials science and engineering department at The Ohio State University (OSU), and Ryan C. Morrison, an undergraduate student in the metallurgical engineering department at the University of Utah, each received the Record Scholarship from Tau Beta

Pi, an engineering honor society.

The Record Scholarship commemorates Leroy E. Record, Kansas Alpha ’29, who endowed \$4 million to the honorary society. The endowment was used to establish the L.R. Record Fund for Tau Beta Pi Record Scholarships.

Previously, Bennett worked as an undergraduate research assistant to Professor Katharine Flores in the materials science and engineering department at OSU. During that time, his research focused on the fundamental investigation in the elastic properties of bulk metallic glass. Bennett also worked as a teacher’s assistant for the Fundamentals of Engineering for Honors Program and is currently a co-op

with General Electric Aviation Engineering. He served as chair of Tau Beta Pi.

Morrison worked as a research assistant for Professor Michael Free in the metallurgical engineering department at the University of Utah. His research focused on vapor phase corrosion.

Bennett and Morrison are among 234 Tau Beta Pi members to each receive a scholarship.

Each month, *JOM* profiles a TMS member and his or her activities outside of the realm of materials science and engineering. To suggest a candidate for this feature, contact Francine Garrone, *JOM* news editor, at fgarrone@tms.org.



TMS Member Profiles

Hands to Work: The Practical Artistry of David DeYoung

By Lynne Robinson

Editor's Note: This paper is excerpted from an article that first appeared on the Materials Technology@TMS site. Read the entire article at <http://materialstechnology.tms.org/EST/article.aspx?articleID=2670>.

Amid smooth curls of wood and hand tools nearly a century old, things of strength and beauty emerge from David DeYoung's hands. There are favorite projects, "many of them uncompleted," says the immediate past chair of the TMS Aluminum Committee. He has a particular fondness for a clever work organizer that he designed for his wife, Joan, from walnut that he found five miles from his western Pennsylvania home. A pencil post bed awaiting final carving details is also a source of pride.

"I like to use a lot of hand tools the way woodworkers from 150 years ago did," said DeYoung. "It requires a fair bit of thinking and problem solving to make something useful that is also nice to look at."

Although DeYoung traces his initial interest in woodworking to a youth jigsaw his parents gave him one distant Christmas, his hobby took on new life—and meaning—when he discovered it could help him create a comfortable, nurturing environment for his sons, Henry and Andrew, both now in their early 20s. Henry has completed his first year of Ph.D. study in computer science at Carnegie Mellon University (CMU), Pittsburgh, while Andrew is also attending CMU as a chemistry major in his junior year. Both were also diagnosed with spinal muscular atrophy, a progressive muscle-weakening condition, when they were toddlers.

In addition to managing the rigors of Henry and Andrew's academic commitments, much of the day in the DeYoung household revolves around completing daily activities that most take for granted. Both young men



Figure 1. David DeYoung works on a shave horse as he shapes Windsor chair spindles with a drawknife.

depend on motorized wheelchairs for mobility and require a painstaking pulmonary regimen to compensate for their weakened chest muscles. Limited use of their own hands means that they rely on the hands of others for many of their needs, including scribing the mounds of work required of their studies. Their father's hands, in particular, have made it possible for them to enjoy many ordinary pleasures—like looking out a window—that would otherwise have been out of reach.

"After my sons were diagnosed, I realized that there were things that I could make that would really help out—things that I couldn't buy because they really didn't exist," DeYoung said. Over the years, DeYoung has crafted "therapy tables" that enabled him and his wife to work at a comfortable height while caring for their sons. Determining that standard medical equipment cabinets were too

awkward for his family's needs, DeYoung made his own. DeYoung's most ambitious project, however, was the one-story house that he designed and had built from scratch to the specific needs of his family.

"I picked a plan out of a book and modified it quite a bit," said DeYoung. "We had been living in a two-story house with our sons and knew at that point what we needed." DeYoung said he also drew on his experiences with his father, who died of amyotrophic lateral sclerosis, or Lou Gehrig's disease, before Henry was born. "I didn't realize it at the time, but seeing what my father needed was a learning experience that prepared me to help my sons," DeYoung said. That's why an important feature of the DeYoung house is windows that are low to the ground, "because people in wheelchairs have a hard time seeing out most windows," he said.

Based on advice given to him by an architect at Children's Hospital of Pittsburgh, DeYoung devised an open floor plan in the living area that has enabled his family to share meals and other everyday experiences comfortably and conveniently. "As the boys have grown, they've not outgrown the house," said DeYoung.

Although family and work—as a technical consultant with the Ingot and Solidification Division at the Alcoa Technical Center in New Kensington, Pennsylvania—are his highest priorities, DeYoung said his woodworking hobby fits as a way to help him gain perspective on the other demands in his life. "It helps me think when I do something with my hands," he said. "Working on a wood project helps me get away from things for a while, so I can start looking at them from a different point."

Lynne Robinson is a writer for Materials Technology@TMS.