point of crisis anywhere in the world. One of these simulations, PORT-SIM, is designed to predict the movement of military cargo through a seaport. VMASC scientists and engineers are working to improve PORTSIM by modeling the effect of commercial cargo flow on the handling and processing of military equipment and supplies.

A third project, funded by the Lockheed Martin Corporation, involves the development of new and more efficient methodologies for specifying the behavior of what computer scientists call “objects.” The end goal is to develop simulation tools that are easy to use and require minimal training. The results of this project should reduce the time and effort required to develop new computer models.

A number of other potential projects are at the discussion or proposal stage. VMASC is working with several large manufacturing companies to define simulation tools that capture the product distribution process. These tools will permit decision makers to ask “what if?” questions designed to improve customer service and reduce distribution costs.

We are also proposing the development of a simulation exercise to train local government officials for emergency preparedness, and a simulation to assist the Virginia Department of Mental Health to implement an area and more uniform process for managing publicly funded health care.

VMASC wishes to adapt and apply this exciting new simulation technology in the commercial business sector. Today’s commercial simulations primarily focus on situations requiring high accuracy and focus on stand-alone applications and are not always able to exchange data with other simulations. When applied to training, the simulations tend to be limited to a single user on a single computer.

Tomorrow’s simulations will capture the entire complexity of a given business operation. These simulations will be built on standardized models running on different hardware platforms, to work in unison. They will also allow multiple users, perhaps separated by great distances, to exchange information and to interact with one another as if they were all part of the same simulation. All this, and they will play on ordinary, networked personal computers.

Because the primary mission of VMASC is economic development, each VMASC project will include both commercial partners: an application partner and a technology partner. An application partner is the end user—the company for which a prototype simulation tool is being developed. This partner defines the project requirements and then evaluates the final product. A technology partner is the company that participates with VMASC in the development of a prototype simulation tool. This partner brings to the table project tools, expertise, and manpower.

At the project conclusion, the application partner has gained a new management tool to help provide competitive advantage in the marketplace. The technology partner has acquired new expertise, software, or possibly even an entire product. Regional economic development occurs because of the additional jobs and investments the second market sector of the technology partner and the competitive advantage gained by the application partner.

VMASC’s mandate to help commercial businesses utilize the exciting new simulation technology is now being developed for the military. VMASC is working with several large manufacturing companies to define simulation tools that capture the product distribution process. These tools will permit decision makers to ask “what if?” questions designed to improve customer service and reduce distribution costs.

VMASC envisions a future in which desktop simulation tools are as common as word processing, spreadsheet, and database tools are today. These tools will be based on networked, business-enterprise models supported by readily available and accurate databases that can be quickly and easily updated with satellite and map data available over the internet. These simulations will provide the user with numerous new capabilities for interactive decision making and team-centered training and rehearsal.

VMASC has the capability to develop and apply prototype enterprise business models. Enterprise models capture the macro-level salient features and processes of a complex business. These models are used to construct computer simulation that assist decision makers to better understand the current business climate and to investigate the options available for action.

Roland Mielke is VMASC technical director and a professor in Old Dominion’s Department of Electrical and Computer Engineering.

Down The Simulation Road

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Obesity is a national concern. The population as a whole is heavier; physical inactivity and 'dietary choices' have gotten older, for example, it inevitably has gotten fatter. With obesity come predispositions to such maladies as high blood pressure, diabetes, heart disease and stroke.

"People simply think that obesity means any physical countermeasures, including weight reduction and a dedicated exercise program, should be undertaken only for the right reasons. Before opting for extensive "exterior remodeling," Cash urges concentration on "the interior," the eating and emotional issues that persist no matter the intensity of other efforts.

"The most effective exercise is attention to change what you look like and how your body feels and what's called it," Cash avers. "That's the criterion. That way you maintain momentum. The point is to add to experience. But don't evaluate your experience with an arbitrary weight scale."

"We avoid a diet in a basic sense when humans can replace hair, surgically reshape body contours and smooth wrinkles with lotions and creams. By all means, Cash says, one should avail oneself of such options when necessary. But they aren't panaceas. Physical change is one guarantee of genuine psychological change—or of a productive, enriching life.

"Be good consumers," he advises. "Here are all the options; take one and move on. Don't rub something on your head or take a pill so you'll have dating, mating and job opportunities. Don't spend the best years of your life worrying about your appearance."

Pick up a magazine or watch television, Cash says, and you can link the physical ideal to the physical ideal. Even though beautiful models comprise the most rung fraction of humanity, we nonetheless compare ourselves to their supersomatic few, often internalizing doubts in our own innate physical inferiority. Cash cites dietary disorders as one example of obsession with a model-like thinness not only a few anorectically equipped to indifferently maintain without undue effort or taking physical harm.

Nor are the relentless body-image media messages lost on potential employers. In several carefully controlled studies, researchers have found that attractive, well-built people are more quickly, tend to succeed faster and eventually make more money than equally talented but shorter, plainer colleagues.

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There are a few, though, where we say we need to change—namely, the cosmetics, weight-loss and fashion industries, as well as the media messages. I really wish we had a different society, but we didn't," Cash says. "I resent my profession's treachery to empower people to be victims. If we stop paying attention to the messages, the messages start divulging. We stop buying into them. And they don't work any more."

In an effort to help people address negative physical preoccupations, Cash has written "The Body Image Workbook: An 8-Step Program for Learning to Like Your Look." The book, published in 1997 by New Harbinger Publications, is based on earlier therapeutic modalities derived from clinical trials of hundreds of student Old Dominion over the last 12 years. Indeed, the book has been part of Cash's current research to evaluate the success of "self-administered" body-image modification.

"If you can become aware of a problem then you can change it," Cash says. "We educate people, give them a system and a framework. Then we can teach them specific, active, therapeutic techniques to alter thought patterns that produce certain behaviors. We help people change their body image by changing their mind about their body."

Cash says, based on earlier studies, more than half of the workbook users should become "functionally recovered." The goal here is not to change an overeating problem, or to avoid fatty foods, but to help people change the body image they have about their body.

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