Dear Readers,

I am excited and honored to present the third issue of The Spectra: The Virginia Engineering and Science Research Journal. Founded in 2009 by a group of students with a vision to promote undergraduate research, The Spectra continues to highlight student creativity as well as the opportunities facilitated by the University of Virginia. The Spectra is a two-way bridge, providing a way for student researchers to communicate their achievements as well as for students without experience to cross into the research community. I hope students will realize that not everyone is born doing research. In fact, each author featured in this journal is a testimony to the hard work and perseverance necessary to break into and succeed in the research community. From personal experience, a simple email expressing interest in a professor’s work will open so many doors.

There is no better time than college to explore as many research areas as possible. This year’s issue does a fabulous job in representing the immensely diverse array of research opportunities available to U.Va. students. Undergraduate thesis projects are a great way for students to conduct research and design projects. This year, The Spectra features theses ranging from optimizing nanoparticles for diffusion in muscle to creating a model that enables a more energy-efficient control of heating, ventilation, and air-conditioning systems in residential buildings. Other students become involved in research and design through university programs, such as ecoMOD, a program that aims to create sustainable, yet affordable, housing units. We are excited to publish an ecoMOD design paper for an automated drape system that reduces energy consumption in the home. A non-traditional engineering research experience can be found with U.Va.’s Policy Internship Program, which gives engineers hands-on experience with science and technology policy. In this issue, policy interns propose how to retain more women in engineering fields and analyze how to advance science in America. Many students choose to participate in summer programs at other universities to expand their U.Va. experiences. One author spent last summer at Illinois Institute of Technology developing a way to improve the body’s ability to regulate blood glucose levels. Undergraduate research at U.Va. does not have to be through an established lab or program. One of our authors conducted an independent research project on low-cost micro wind turbines. Needless to say, there are many research and funding opportunities available for U.Va. students!

Established as a self-governed organization, The Spectra owes its success to its student editors who select and peer-review the papers, design the journal, and solicit funding. I have been involved with The Spectra since its inception in 2009, and have seen the level of interest and support increase each year. This is an indication not only of the student involvement, but also of the dedication of our faculty and graduate students who help undergraduates pursue research and encourage participation in The Spectra. I cannot thank you all enough. The support of several other members from the University community should be recognized as well. Aid from the engineering alumnus Linwood A. “Chip” Lacy Jr., the Office of the Vice President for Research, and the Jefferson Trust, an initiative of the U.Va Alumni Association, has provided The Spectra with the means necessary to operate this year and for years to come.

The Spectra’s mission is to provide publication opportunities for undergraduates catering to the engineering sciences, promote a community of research, and serve as an educational tool for its readers. We hope that The Spectra will impress upon you what U.Va. undergraduate researchers can accomplish as well as inspire you to pursue research of your own.

All the best,

Hannah Meredith

Editor-in-Chief

Hannah Meredith is a fourth year biomedical engineering student from Richmond, Virginia. She has been involved with since its inception in 2009, serving as a primary editor, Associate-Editor-in-Chief, and now Editor-in-Chief. In the spirit of undergraduate research, Hannah has explored multiple research opportunities. Going a bit outside the realm of biomedical engineering, Hannah has spent some time researching molecular gastronomy, a non-traditional cooking style that enhances the eating experience by altering the appearance, texture, and flavor combinations of food. She also took the opportunity to explore the relationship between engineering and the government one summer through U.Va.’s Policy Internship Program. During her third year, Hannah joined a lab in the biomedical engineering department and started developing a clinical diagnostic test that could be used to detect an infectious strain of amoeba. She is currently finishing up this project as her undergraduate thesis. Hannah also had the opportunity to intern at the Oak Ridge National Laboratory, where she designed synthetic gene circuits to control basic cell functions. This experience sparked her interest in synthetic biology, which Hannah is excited to be continuing after graduation as she pursues her Ph.D. at Duke University. In addition to research and working with The Spectra, Hannah has served as Vice President of the U.Va. Biomedical Engineering Society and class representative for the Rodman Council, and enjoys backpacking, cooking and listening to jazz.

Hannah Meredith

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The Development and Optimization of Low-Cost Micro Wind Turbines for Off-Grid Application in Developing Regions

Kyle Teegarden
School of Engineering and Applied Science, Department of Electrical Engineering

Social Impact
Reliable access to electrical power is an essential element in overcoming the stranglehold of poverty in developing countries. Despite well-intentioned efforts, most electrification projects initiated by the developing world end in failure, largely due to high costs, inadequate maintenance, and cultural resistance. This research explores power generation by small wind turbines that are basic enough for an individual in a developing area to build and maintain, using only simple tools and materials. Electrical power can then be produced with both high autonomy and low cost.

Abstract
Nearly two billion people worldwide have no reliable access to electricity, a vital part of the path to development. Micro wind power is one promising solution. Micro wind installations offer environmental sustainability, low capital costs, and excellent adaptability to diverse environmental and cultural situations. Yet, electrification projects in the developing world, including small-scale wind power, have struggled to reach the level of success needed to significantly close the developmental gap. Current studies suggest that this disappointment is largely due to issues with the local stakeholder, including a lack of experience, technical assistance, and funding. This research explores a different approach to technical design as a way to address the economic difficulties of implementing micro wind power installations. The approach taken is unique: the target wind turbine in this study is one that can be both built and repaired using tools and experience available in a developing community. Several different configurations of a battery-charging micro wind turbine were built and tested in both a controlled environment and in real-world situations. Factors analyzed include generator type, blade design, and cost. It is concluded that not only can a micro wind turbine be built with methods available to developing communities, but such a turbine costs only 40% as much as the best commercial version on a per-watt basis and is far easier to maintain.

View the full articles online!
Synthesis of Oxidized Alginate Microbeads

Jessica Ungerleider
School of Engineering and Applied Science, Department of Biomedical Engineering

Abstract
Alginate microbeads have been investigated for cell and drug delivery. However, it is difficult to control the degradation of alginate. Oxidation of the polymer can allow for controlled degradation of alginate via hydrolysis. In this study, we investigate the influence of oxidation on the formation and degradation of alginate microbeads. Sodium alginate was oxidized by reaction with sodium periodate (NaIO4). The level of oxidation was evaluated by Fourier Transform Infrared Spectroscopy (FTIR) and spectrophotometry at 486 nm using a thiodene indicator. This partially-oxidized alginate was used to synthesize alginate microbeads using a 2-channel air-droplet microencapsulator. The physical properties of the resultant microbeads were evaluated over time. Alginate samples were oxidized at levels ranging from 2.5 to 49.5 % proportional to NaIO4 concentration, and the degree of oxidation was corroborated using FTIR. The reaction yield was 68±6.4%. Oxidation altered the microbead properties relative to controls. Spherical beads were able to be formed using alginate at 0-2.5% oxidation. Beads made with 5% oxidation formed but had an altered morphology, while oxidation levels above 5 % beads did not form. In conclusion, we have oxidized alginate and generated microbeads. The oxidation of alginate alters the ability of microbeads to form and their resultant structure. Degradation time of the microbeads is hypothesized to increase with degree of oxidation. Current studies are investigating microbead degradation as a function of oxidation. It is hoped that a solution implementing predictably degradable alginate can be eventually utilized in islet cell transplantation and drug delivery as a treatment for Type I diabetes.

Social Impact
Type I diabetes, resulting from the body’s destruction of its own insulin-producing beta cells of the pancreas, affects approximately 5 % of all diabetes patients worldwide. The disease is typically diagnosed in juvenile patients, but dealing with the condition is a life-long process. Islet-cell transplantation, a therapy for Type I patients, is the encapsulation and transplantation of new insulin-producing cells via a 3D polymer scaffold “bead”. The scaffold’s material properties studied in this paper have implications for increasing survival rate of transplanted cells, thereby increasing the viability of islet-cell transplantation as a realistic future therapy for diabetic patients.
Improving HVAC Energy Efficiency: A Two-Stage Approach

Virginia Smith
School of Engineering and Applied Science, Department of Computer Science

Social Impact
Heating, ventilation, and air conditioning (HVAC) systems are the greatest energy consumer in buildings, which account for about three-fourths of all electricity spent within the United States. This makes them an extremely important target for energy efficiency improvements. One area for improvement is in using occupancy sensors to determine which zones within residential buildings need temperature control and which do not. To allow for this type of system, we develop a mathematical model that will predict future temperatures based on current HVAC configurations. This model will enable new, more energy efficient control of the system.

Virginia Smith is a fourth-year student from Blacksburg, Virginia studying Mathematics and Computer Science. She hopes to combine her technical skills with an interest in the environment by pursuing graduate studies in the field of Computational Sustainability. Virginia has conducted this research as part of a senior thesis for her computer science degree at the University of Virginia. She would like to thank her mentors, Professor Kamin Whitehouse and Tamim Sookor, for all their help on the project.

Abstract
A significant amount of the world’s energy is used for heating, ventilation, and air conditioning (HVAC) systems. This makes them an important target for energy efficiency improvements. One step toward this goal is to find a mathematical model that accurately predicts the performance of current systems. A common energy-reducing setup in residential buildings is the electrical, dual stage heat pump air conditioner. To study this setup, we collect data from a residential testbed which has been outfitted with sensor networks for the purposes of in situ experimentation. We aim to use this information to develop new, energy-efficient control strategies for the HVAC system at hand. However, these strategies necessitate the use of models which will predict system performance. We develop a two-stage model which, first, learns thermal patterns within the building when the system is OFF due to variable factors such as sunlight, cloud coverage, and wind. This model is then included in the model when the system is ON, allowing us to predict the effect of the system configuration more accurately. Results from this model allow the prediction of temperature within an interval suitable to enable control. This model is scalable to similar systems, and thus can be used to improve the efficiency of HVAC systems by helping to determine more effective control schemes.

The goal is to develop a model for this system that accurately predicts temperature dynamics within a building.
Throughout their undergraduate experience, U.Va. engineers are challenged to solve real-world technical problems, from building energy-efficient housing, starting new businesses, or developing new medical technologies.

But a select group of U.Va. undergrads get the chance to try out their problem-solving skills on a different set of challenges: public policy. The problems that face this country – energy, national security, privacy, health and the environment – are partly technical, but are also deeply embedded in economics, politics, and fairness: the world of policy. And it’s policy that often determines whether any of these innovative technical solutions ever make it to market.

Each year for the last twelve years, about a dozen U.Va. undergraduates have gone to Washington (and sometimes Paris!) to work on a wide range of public policy issues. As participants in the Science and Technology Policy Internship Program (PIP), students take a dedicated spring seminar course that helps prepare them for their 10-week summer internship. In the summer, students live together in George Washington University dorms. Interns are placed with high-level policymakers, such as the Director of the National Science Foundation, and work in key scientific agencies, including the White House Office of Science and Technology Policy, NASA, the Department of Energy, and EPA. Students also work at non-governmental organizations such as the National Academies of Science, the World Bank, and other NGOs working on critical technology and policy topics.

Professor Bio

A lawyer by training, Professor Rodemeyer is no stranger to working with scientists and engineers. In his fifteen years as a counsel to the U.S. House Committee on Science, Space and Technology, Professor Rodemeyer found himself one of the few lawyers on a staff composed mostly of Ph.D. engineers and scientists. "It was an amazing opportunity to learn about cutting-edge science issues from some of the country's top experts," said Rodemeyer. "Each day brought a new issue: unraveling the human genome, assessing climate change, developing new crops with biotechnology, sustaining human space exploration. It was an incredible on-the-job education."

Professor Rodemeyer also spent a year in President Clinton's Office of Science and Technology Policy, before starting the Pew Initiative on Food and Biotechnology, a non-government research project on agricultural biotechnology funded by the Pew Charitable Trusts.

Professor Rodemeyer moved to Charlottesville in late 2005 and almost immediately became attracted to the Department of Science, Technology and Society in SEAS. "It is a great place to explore the complex interactions of technology and society, and it seemed like a place where my experience in Washington could be really useful to future engineers." For several years, he taught an STS elective on Food and Biotechnology. In 2009, Professor Rodemeyer became the Director of the Science and Technology Policy Internship Program. It’s a way, he says, to “ensure that there’s a strong pipeline of technically-talented people who can understand the world of policy and appreciate the importance of communicating with non-technical people.” One of the most satisfying experiences he has is watching interns catch “Potomac Fever” – an incurable lifetime malady that no biomedical engineer has yet found a cure for.
A Proposal for a Federal Engineering and Science Initiative for Women

Camrynn Genda
School of Engineering and Applied Science, Department of Systems Engineering

Social Impact
As countries like China, Japan, and India increase their technological workforces, the United States must increase its own technological capabilities to retain its place as a leader in innovation and economic growth. Women represent an underutilized resource as their numbers in science, technology, engineering, and math (STEM) fields remains very low relative to men. This research outlines a policy aimed to increase the retention of women in STEM fields by increasing mentorship of young women by STEM federal employees. Implementation of this policy would increase the quality of women's engineering environment, increase retention of women in STEM fields, and ultimately increase the economic competitiveness of the United States.

Abstract
Prowess in science, technology, engineering, and mathematical (STEM) fields was a transformative driver as the United States emerged from its agrarian past to take on a role as a world power in the 20th Century, and as the only remaining superpower in the 21st. However, as countries like China and Japan increase their technological work force, the United States' position of scientific and technical preeminence appears to be in jeopardy. The U.S. needs to increase technological capabilities of its labor force to remain competitive in the global economy.

Women represent a source of underutilized human capital, which can be called upon to increase the economic competitiveness of the U.S. economy. Although women represent almost 50% of the overall U.S. labor force, they compose only 10% of the STEM labor force. This under-representation of women in STEM fields is caused not by women's lack of inherent capacity or skills, but by an atmosphere of competition and individual achievement that has for years been shaped to most effectively meet the needs of men, rather than both men and women.

To ensure that the U.S. retains the best possible workforce, this paper recommends that the Office of Science and Technology Policy (OSTP) establish a Federal Engineering and Science Mentoring Initiative (FESMI) to increase the retention of women in STEM fields. This initiative would increase the number of federal employees serving as STEM mentors, and would help coordinate the disparate mentoring efforts of federal agencies. This option has high political feasibility (based on the presence of the Administration’s support of women and the number of federal mentoring programs), low cost (as measured by the resources required to organize volunteers from within the federal workforce), and high efficacy (based on research that demonstrates how well women respond to mentoring when compared to male counterparts).
American Innovation: Promoting Scientific Advancement through Collaborative R&D

Zachary Levin
School of Engineering and Applied Science, Department of Chemical Engineering

Federal funding alone is not enough to drive technological innovation.

Social Impact
Technological advancement is one of the most significant drivers of economic growth. For the United States to remain a leader in global technological innovation, legislation must be enacted to promote continued investment in basic research and development. In constrained economic times when increases in the Federal budget are unrealistic, industry can provide the resources needed to promote investment in research. The purpose of this study is to perform a policy analysis on possible incentives or potential institutional changes to encourage such investment in research.

Abstract
In Fiscal Year 2010, the federal government directly spent $147.4 billion on research and development (R&D); however, federal funding alone is not enough to drive innovation. Investment in basic R&D yields a significant societal benefit, manifesting both as increased labor productivity and overall economic strength. Technological progress gives the nation’s firms an initial advantage in the production and sale of new products. In the mid- to long-term, innovation is positively correlated to job growth. While the United States has made significant advances in promoting innovation through legislation reforming intellectual property law, creating Research and Experimentation Tax Credits and Cooperative Research and Development Agreements, and directly funding research at non-profit organizations and academic institutions, the country continues to slip in the world rankings for global innovation-based competitiveness. In order to maintain the standing of the United States as a leader in global innovation-based competitiveness, new legislation must develop new initiatives to foster an environment conducive to basic scientific research and commercialization of new technologies. In the absence of increased federal funding for basic research due to budgetary constraints, industry can provide the resources needed to spur innovation and economic growth if the government creates an environment in which it is economically advantageous to pursue scientific advancement.
Optimization of Nanoparticle Size and PEG-Coating for Drug Delivery in Skeletal Muscle

Christian Merrill & Nikhil Panda
School of Engineering and Applied Science, Department of Biomedical Engineering

Abstract
The application of nanoparticles (NPs) for the delivery of therapeutic small-particles in skeletal muscle is a promising method of targeted pharmacological therapy. However, the dispersion properties of NPs in targeted tissues remain unexamined. The purpose of this study is to identify the optimal diameter and surface coating (polyethylene glycol (PEG) versus non-PEG) of polymer NPs for diffusion in skeletal muscle. The authors hypothesize that smaller PEG-coated NPs have greater diffusivity in skeletal muscle. This experiment was an in vivo validation study in the gracilis muscles of living rats, where 40, 100, and 200 nm NPs with and without PEG-coating were delivered by ultrasound-assisted microbubble delivery. Primary outcomes included quantifiable total NP dispersion area and NP colocalization with microvessels. Whole mount analysis showed that larger NPs yielded larger total area coverage throughout the entire muscle. Additionally, PEG-coated NPs diffused over a greater area than uncoated particles, with the exception of uncoated 200 nm NPs that had larger area coverage. PEG-coated NPs colocalized more with microvessels than uncoated particles. PEG-coated 200 nm NPs, however, colocalized with fewer microvessels than uncoated 200 nm NPs. It was concluded that the PEG-coat did not increase NP diffusivity or colocalization with microvasculature in the gracilis muscle with statistical significance. However, the observed increased NP area coverage and percent colocalization for 40 and 100 nm PEG-coated NPs is promising for future investigation. Additionally, the results regarding the 200 nm NPs suggest that there is a size limitation for ultrasound-microbubble mediated NPs delivery to skeletal muscle between 100 and 200 nm.

Social Impact
Peripheral artery disease (PAD), despite affecting 8 to 12 million Americans annually with total healthcare costs exceeding $21 billion each year, is considered to be under-recognized by physicians and remains one of the least visible diseases in the public realm. Currently, the status of PAD is marked by misguided research funding yielding ineffective and non-specific treatment options. The purpose of this research is to attempt to create a PAD-specific treatment option using highly-customizable nanoparticle design.
ecoMOD (http://ecomod.virginia.edu/) is a collaborative design/build/evaluate project of the Schools of Architecture and Engineering and Applied Science at U.Va., striving to create sustainable, prefabricated housing units in partnership with affordable housing organizations. Since 2004, the project has worked with Habitat for Humanity and Piedmont Housing Alliance to build prototypes, and has also developed prototype designs for the non-profits People Incorporated of Virginia, Jefferson Area Board for Aging and Building a Bridge. Graduate and undergraduate students in a variety of disciplines manage projects and participate in all aspects of ecoMOD. The project is engaged in two types of design efforts: ecoMOD projects are newly constructed housing units deploying prefabricated construction strategies and ecoREMOD projects are focused on regenerating and adapting historic buildings. Each ecoMOD unit engages the intersection of sustainable design, affordable housing, and prefabricated construction, while ecoREMOD units do so in historic contexts. ecoMOD XS units are small scale accessory dwelling units to be placed behind or attached to existing homes in urban contexts. Technology and environmentally thoughtful design are strategies woven throughout the ecoMOD projects. There is no one right solution for many of these issues, rather, the various strategies play to particular strengths, weaknesses, and preferences. Technologies implemented in the houses include solar photovoltaic (electric) solar thermal (water heating), ground source (geothermal) heat pump. The engineering team has developed monitoring systems that record energy usage, temperature, humidity, CO₂, and other energy performance variables. We also do modeling and simulation to improve our ability to design for superior energy efficiency.

Professor Bio

P. Paxton Marshall, Professor of Electrical and Computer Engineering is active in energy and sustainability research and experiential learning incorporating community engagement. He was engineering director for the U.Va. solar house project, an energy independent house designed and built by students. The house placed second overall, and first in the Design and Livability and Energy Balance categories, in the 2002 DOE Solar Decathlon. Marshall works with the U.Va. School of Architecture on ecoMOD, a research and design / build / evaluate project that has created four ecological, modular and affordable house prototypes and three deep renovations. Marshall was engineering director of the Learning Barge project, which created a floating environmental classroom for the Elizabeth River. The barge is powered by photovoltaic and wind generators and heated by a solar thermal system. Marshall is the former Chair of the Energy Conversion and Conservation Division and the Engineering and Public Policy Division of the American Society for Engineering Education. Marshall's classes have worked with U.Va. Facilities Management on energy assessment and design projects which resulted in U.Va. being designated as EPA Green Lights and Energy Star Partners of the Year in 1999 and 2001 respectively. Marshall has participated in the development of the Global Sustainability minor, the Jefferson Public Citizen Program, the Engineering Business minor, the Science and Technology Policy minor and Washington summer internship program. He has developed and taught classes on “Global Sustainability”, “Engineering in Community Settings”, “Developing Community-based Projects” and Commercial Building Energy Systems. Marshall has an Affiliated Faculty appointment with the School of Architecture.
Automated Shading System: Reducing Home Energy Usage
Matthew A. Jungclaus and Quinn S. Weber
School of Engineering and Applied Science, Department of Mechanical Engineering

Matthew Aaron Jungclaus (left), originally from Moorestown, New Jersey, is a fourth-year mechanical engineering major at the University of Virginia. Outside of his research, Matt enjoys performing with the U.Va. Jazz Ensemble and participating in community service. After graduation, Matt will continue to work in building energy performance with Clark Energy Group in Arlington, Virginia.

Quinn Weber (right) is a fourth-year mechanical engineering and economics double major from Doylestown, Pennsylvania. Some roles include being a member of the HVAC team, producing educational videos for the Local Energy Alliance Program, and working on two Jefferson Public Citizens grants. Quinn enjoys spending early mornings on the Rivanna Reservoir as a member of the Virginia Men's Rowing Team. After graduating in May of 2012, Quinn will begin looking at the energy problem from a different perspective as an analyst at DC Energy in Vienna, Virginia.

Abstract
The team proposes an automated shading system that has been designed and assessed for use in ecoREM, a showcase for energy efficiency in Charlottesville, Virginia. The goal of the system is to reduce energy consumption in the home by optimizing heat transfer through windows in residential buildings. Homeowners are seldom aware of the summed effects of radiation and conduction through windows that often lead to excessive energy consumption. Even if homeowners are aware of this, they may not be able to ameliorate this issue effectively. The team designed a mechatronic system, featuring a microcontroller, sensors, and an actuator, that uses light and temperature data to continuously optimize this heat transfer by advantageously moving an insulated shade. A past ecoMOD team began work on this project and purchased a prefabricated motorized shade. This shade was incorporated into the current team's project, but the method of automation was significantly improved. The design was developed to include the original shading system in addition to direct control of the shade's motor by way of the Parallax Propeller microcontroller chip and a number of integrated circuit chips. These digital components allow for custom control of the shading system's motor. A number of sensors communicate directly with the Propeller chip, which processes the information and orients the shading system as ‘up’ or ‘down.’ Since the ecoMOD project relies on sensor data to evaluate its homes, the team also included a data transmission system, which will allow live data to be transmitted to ecoMOD's preexisting data storage hub in the ecoREM house. The team will rely on both data and user reviews to ensure that the system meets expectations. The current apparatus is a fully functioning prototype with a functioning data transmission system, but has not yet been integrated into the ecoREM home.

Social Impact
The residential sector will consume 29% of the baseline energy in the U.S. by the year 2020 and half of that energy will have been used for heating and cooling (McKinsey 29). This demand will largely be met by fossil fuels which emit harmful gases into the atmosphere and whose supply is finite. One of the most effective methods of reducing greenhouse gas emissions, a known contributor to global warming, is by decreasing residential energy usage, and increasing the efficiency of existing home energy systems. Windows are one of the most consistent and significant breaches in a home's thermal barrier. Additional insulation over windows in times of significant heating or cooling could decrease demand on a home's heating and cooling systems and decrease the home's overall energy demand (Krigger and Dorsi). The completed system will provide a tangible example of the various sustainability technologies available to residents and visitors of Charlottesville.
Letter from the Staff

Dear Readers of The Spectra newsletter,

It is our sincere pleasure to welcome you to the third issue of The Spectra: The Virginia Undergraduate Engineering and Science Research Journal. Established in 2009, The Spectra has burgeoned by showcasing the diffuse talents of undergraduate work and by creating a collaborative community of research at the University of Virginia. The quality of the research summarized herein is representative of the high level of excellence in, and outside of, the School of Engineering and Applied Sciences (SEAS).

A unique characteristic of the SEAS at the University of Virginia is the rich accessibility of research opportunities to undergraduate students. Upon reading the following pages, we are confident that you will gain a sense for the diverse skills and styles of writing exhibited by our featured authors. Furthermore, we hope that this brief newsletter will provide a glimpse of the talents and pursuits by some of our undergraduates, and that you will be encouraged to take a closer look at the engineering curriculum at the University of Virginia.

Not only does The Spectra exist to celebrate the works of emerging scientists and scholars at the University of Virginia, but it aims to foster scientific advancement by propelling the culture of engineering, technology, and society. The articles contained in this issue of The Spectra fully accomplish those objectives. Continuing with the impetus set forth by the founding staff, we hope you find this newsletter insightful, and that you visit our full journal, available online at http://www.seas.virginia.edu/pubs/spectra/.

All the best,

The Spectra
2011-2012 Editorial Board