SOUTHEASTERN
LOUISIANA UNIVERSITY

09/27/10

Board of Regents
PO Box 3677
Baton Rouge LA 70821-3677
To Whom it May Concern:

The APTEC/SEAL program, funded under contract number LEQSF(2007-12)-ENH-PKSFI-PES-06 is proceeding this year as in previous years, with new and returning clients, and with outreach and presentations scheduled. Plans are underway to host local high school students to impress upon them the opportunities science presents for Louisiana's future and to visit the Louisiana School for Math, Science and the Arts in Natchitoches. We have three presentations of the SEAL's undergraduate research planned for this semester: at the University of Louisiana at Lafayette, at Louisiana State University in Baton Rouge, and at the SouthWest Regional Meeting (SWRM) of the American Chemical Society in New Orleans.

And we are especially excited about two contracts we have signed. With Gaylord Chemical (Slidell LA) and Bercen Inc. (Denham Springs, LA), we have signed contracts not to exceed $10,000 (each) to cover various research activities. What is particularly interesting about these contracts is that we can now engage in research activities much more effectively, since each and every project need not be preceded by a cycle of contract signing to begin. We may begin the various projects and invoice the clients under the existing contract.

Attached, please find a number of letters from former SEALs and current and former clients in which they reflect upon their view of the value of the SEAL program. Thanks for your attention and do not hesitate to contact me if you have any questions.

Sincerely,

David Norwood, Ph. D.
Faculty Director, SEAL
985/549-3938

Department of Chemistry & Physics ● SLU 10878 ● Hammond, LA 70402 ● 985-549-2159 ● Fax: 985-549-5126 ●
www.selu.edu/chem
A member of the University of Louisiana System

September 3, 2010

Dr. David Norwood, Director, SEAL Program
Associate Professor of Physics
Department of Chemistry and Physics
Southeastern Louisiana State University
Hammond, LA 70401

Dear David,

I wanted to thank you for the support provided by the SEAL program in Albemarle's market evaluation for its Bromine Sustainability Initiative. The rapid expansion in US electronic products creates a commensurate amount of waste electronic plastics. The environmental footprint associated with these waste electronic plastics has yet to be properly addressed.

The SEAL team efforts to identify and quantify the eventual disposition of discarded computers, printers, cell phones and other electronic wastes is not a trivial exercise. The detective work required for this effort was both commendable and valuable.

This market information will provide the justification for future grant requests for Albemarle's Bromine Sustainability Initiative. Thank you for your assistance in this area. This emerging area of research requires the vision and leadership that you provide through the SEAL program. Hopefully, as we continue to work together, we can make the economic removal of waste plastic from the environment a reality.

As a major employer of technical Louisiana college graduates and as a world leader in bromine chemistry, Albemarle encourages the continuation of the SEAL program. With continued funding, we see a bright future for the SEAL program which will be increasingly utilized. It is with the greatest pleasure that I offer this letter of support.

Thanks again for your leadership and assistance to Louisiana's industry.

G. Wyndham Cook, Jr.
Research Funding Director and Scientific Liaison
Albemarle, Corporation
451 Florida Street
Baton Rouge, LA 70801-1765

Gaylord Chemical Company has worked with the SEAL program at Southeastern Louisiana for several years. We highly endorse the program, for several reasons.

Like many companies, Gaylord has more project ideas than deployable resources. The SEAL program has provided a flexible option to explore new product development avenues . SEAL projects have also produced technical information to assist and educate our customers.

The diverse backgrounds and specialties of the SELU faculty have been a valuable resource. The expertise and advice of polymer physicists, synthetic organic chemists and analytical scientists has provided perspective beyond what is available internally within Gaylord. The SEAL program has provided equipment and analytical assistance that we simply aren't capable of doing for ourselves.

The quality of work performed by SEAL students- and the timely delivery of results- has been impressive. Any company concerned about the responsiveness of an academic-industrial partnership hasn't worked with Dr. David Norwood and the SEALs!

Some examples of SEAL projects undertaken with Gaylord include:

- **A synthetic organic project** to explore the chemistry of one of products, which lead to a refereed publication and several presentations at national chemical meetings

- **Synthesis of a commercially unavailable analytical standard** for use in analytical work to support a regulatory filing in the EU

- **A project to explore the properties of an important Gaylord product** for use in marketing materials with Gaylord customers.

Beyond the rather tangible benefits enjoyed by partner companies like Gaylord, programs like SEAL have persistent societal value. America is falling behind in the Science, Technology, Engineering, Mathematics (STEM) disciplines, a national strategic weakness. Only by introducing students to the realities – and fascinations- of industrial research will this trend be reversed.

In closing, Gaylord Chemical hopes that others appreciate the contributions of the SEAL program to the Louisiana Chemical Industry, the futures of bright and hardworking Louisiana students, and the State of Louisiana itself. If I can provide further information about the relationship between our company and the Louisiana SEAL program, please feel free to contact me.

Kind regards,

Artie S. McKim PhD MBA
Technical Director
Gaylord Chemical Company LLC
209 Industrial Parkway
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+001 (985) 732.6308

GREEN STOP

“Where Alternatives Live”

Dr. David Norwood June 24, 2009

Dear David,
I am writing today to thank you and the students, who have contributed through the SEAL program to my start-up business venture, CGBG/Green Stop.
The research conducted by Megan Lanier, Patrick Gentry, Patrick Weber and Alexandra Ruibal has proven to be very helpful, but more importantly, it was done in a very professional and timely manner. Thanks to the their efforts I now have data, which substantiates and augments my own research in regards to waste to energy systems, feedstock, processes, as well as, some cost parameters for all of the above.
Patrick Weber provided me with concise guidelines and projections for some lab research, which I will want to implement in the Fall Semester. He prefaced each category with a short explanation, which helped me understand the science behind the application or process.
Patrick Gentry provided me with a very detailed report on Bio- Diesel and Hydrogen production. He could have given me a little more background information on the processes and explained things in “Layman” terms.Megan’s status reports and meeting minutes were detailed, and written with the end-user in mind. As the team leader, she seemed to keep everyone on the right track and produced the work according to the specified timeframes.
All in all, I would like to commend you and the SEAL Team on a job well done. I look forward to working with you all in the future.
Sincerely,

Jerome Stuart
CEO CGBG/Green Stop

Clean, green, bio-gas, LLC

Respected Sirs and Mesdames,

My name is Jordan Dinser, and I am writing to tell you about my experience with the Southeastern SEAL Program. I applied for the position of student researcher with the SEAL program during the fall semester of my sophomore year. Prior to this, I had been working as a clerk at a local pharmacy. I applied for the position with SEAL to find out whether I would enjoy doing scientific research and because I had been told that the position would be very flexible around my class and study schedule. Shortly after applying, I was informed that I had gotten the position.

Immediately I was put to work in an organic synthesis lab under the supervision of Dr. Debra Dolliver. In her lab I was able to work on synthesis projects for Gaylord Chemical company. As I grew more comfortable in the lab and became a more independent researcher, I was able to start on other projects for Millard Foods and U.S. Composite Pipe South which were more analytical in nature. While doing this research, I gained many valuable laboratory skills and was trained in using instrumentation such as HPLC, NMR, IR, and GC/MS. In addition, I developed a large amount of experience in technical writing as it was also one of my duties to report findings to our clients throughout the course of and upon completion of projects.

I was also given the opportunity to share the results of our projects with the larger scientific community by presenting my work at many local, regional, and national conferences. Although these presentations represent only a small fraction of the time that I spent working for SEAL, they were also some of the most influential and beneficial experiences I had with SEAL. The opportunity to travel to these conferences was certainly one that I would not have had were it not for my involvement in the SEAL program.

The combination of these experiences encouraged me to continue on the path toward a career in the sciences. I applied and was accepted to four outstanding Ph.D. programs in chemistry and have decided to attend the University of Texas at Austin in the Fall. I am certain that the level of training and experience that I gained through the SEAL program will continue to be essential to me as I continue in my pursuit to becoming an effective scientist.

Sincerely,
Jordan Dinser

215 Morcroft Lane
Durham, NC 27705
(985) 517-3175
August 9, 2010

Louisiana Board of Regents

To whom it may concern,

As a student at Southeastern Louisiana University, I was encouraged to join a research group early in my academic career and was fortunate enough to be accepted as one of the first Southeastern SEAL student researchers. I joined the program in August of 2007 and immediately began working on projects for local companies such as Gaylord Chemical and V-Labs. I was trained by the SEAL faculty to perform routine, yet essential, lab techniques and operate various instruments, such as NMR, GC/MS, HPLC, and light scattering devices.

As more students joined the program, I was able to move into higher responsibility positions; thus, gaining the experience of training other students and handling business aspects of the program. As part of my responsibilities to the program, I presented my research to various local and national scientific conferences. Being able to present my research helped me to understand the value of attending conferences and gave me the opportunity to develop my presentation skills. I also learned a great deal about opportunities for furthering my education in chemistry through these conferences and conversations with various professors here at Southeastern and abroad. These conversations helped me to realize the confidence that more experienced individuals had in my abilities and instilled in me a reassurance that I was in the right work field.

During my senior year at Southeastern and my third year in the SEAL program, I applied to five graduate programs, including Rice University, Texas A&M University, University of Arkansas, University of North Carolina at Chapel Hill, and Duke University. I was accepted into all five of the programs and eventually decided, through much debate, to attend Duke University to earn my Ph.D. in synthetic organic chemistry. After completing my Ph.D., I would like to enter into the pharmaceutical research and development field and have yet to decide whether to I will pursue an industrial or academic position. Originally, I wanted to enter into an industrial career after completing my education. However, the past year's experiences with training incoming several SEAL students has allowed me to come to the realization that I enjoy seeing someone else learn and mature in their field of study.

I believe that the valuable, positive experiences that I have had through the SEAL program has been a major key to fulfilling my dreams of becoming a highly educated and well trained chemist. The influence of the Southeastern Louisiana University SEAL faculty and fellow students has certainly affected my life in a constructive manner. I hope that the individuals involved in the SEAL program will be able to continue in their work to guide and teach students through active research.

Thank you,

Megan Lanier

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September 10, 2010

To whom it may concern:

Through support from the Louisiana State Board of Regents, the Department of Chemistry and Physics of the Southeastern Louisiana University has been able to provide a funded program for student participation in research which enables them to assist local chemical industries while gaining invaluable experience. The program is entitled Student Entrepreneurs as Active Leaders, (SEAL). The SEAL program has been an invaluable asset for training students in chemical and physical science, affording them a great advantage in solving difficult structural and compositional problems in their learning research. In performing industrial chemistry as cooperators in the process of solving defined problems for these industries, the students promote good business practice while acquiring new formation in applying their academic skills. Advantages of hands on use of instrumentation and technical equipment being made available to these students in the SEAL program permits them to be at the forefront of chemical and physical knowledge at this time. The advantage of having such tools for the faculty and students is that at the atomic and chemical bonding level, enormous insight which is available in no other way is brought to their human imaginations. Most importantly the undergraduate students, being able to apply the concepts learned, will be on the forefront of developing chemical science.

For our company, V-LABS, INC., Covington, LA, the SEAL program at Southeastern Louisiana University has made available skilled student workers to collaborate in a number of efforts that have benefitted our clients. During this period these SELU students have accomplished different kinds of highly skilled tasks on real industrial problems as listed here.

- Molecular weights of industrial polysaccharide fractions used in important food products measured by light scattering as well as gel chromatography and viscosimetry.
- Molecular weights of a recently developed new dietary fiber (AXOS II) measured by light scattering
- Physical molecular properties such as solution size dimensions and molecular weights for an important cosmetic base.
- Assessment of the widely used food ingredient, gum Arabic, as an emulsifier using light scattering
- Modification of polysaccharides and measurement of their macromolecular properties for improved physical properties applicable to water purification.

We at V-LABS, INC., consider the SEAL program at SELU a truly mutually supportive project for students and faculty, as well as industries such as ours, who are able to share in this very productive effort,

Yours truly,

Sharon V. Vercellotti, M.Sc.
President

John R. Vercellotti, Ph.D.