In This Issue:

Letter from the Executive Director Page 2
Golf Tournament Raises Funds for GaBioEd STEM Programs Page 3
Georgia Bio Summit Keynote Presentation Highlights Page 4
Summit Highlights - Breakout Sessions and Company Presentations Page 5
Building Skills for Career Success While in Academia Page 6
Molecular Modeling at Mercer College of Pharmacy Page 6
Upcoming Events Page 7
GaBio Board Member Highlight Page 8

Get Involved with the Georgia BioEd Institute:

- Join the Visiting Scientist program, in which we schedule K-12 classroom visits by industry professionals
- Become a judge for the BioGENEius high school student science fair competition
- Exhibit at the Atlanta Science Festival and Represent your company under the Georgia Bio tent at the Festival's Exploration Expo March 25, 2017 with a hands-on exhibit that features the science behind your business.
- Host an Intern – a high school student or teacher (or both!) - at your company/organization this summer.
- Become a sponsor or make an individual contribution
- Learn more at http://georgiabioed.org
Dear friends of the Georgia BioEd Institute,

It’s been a great few months for the Institute! We focused our efforts on building the infrastructure to expand and sustain our programming, and executed two key fundraisers to support our operations. Thanks to all our supporters and contributors, the Casino Night Gala & Auction and Swings Fore STEM Golf Outing raised over $20,000!

In partnership with AJR Consulting, the Institute is creating a Fund Development plan to guide our strategic direction and fundraising efforts over the next three years. We anticipate dramatic growth in our operating budget and staffing to support our mission to cultivate future leaders in Georgia’s life science industries.

Summer interns Sydney Miracle (Etowah High School) and Michelle Truong (Georgia Tech), helped us build a contact list of over 2000 Georgia science teachers and a detailed inventory of 25,000 items in our Equipment Depot to better support K-12 classrooms to implement biotechnology laboratory activities. The Depot is populated with items donated from VWR, Inc. and other partners, and is supported by a grant from the VWR Foundation. We are partnering with Clayton County Schools to offer a series of four professional development workshops for their high school science teachers.

Our newly-formed Teacher Advisory Council will help the Institute to better meet teacher and student needs, including revision of teacher professional development plans and alignment of workshops with Equipment Depot resources. Council members include Casey Bethel, the 2016 Georgia Teacher of the Year; Marc Pedersen, the 2016 BioGENEius Mentor of the Year and 2016 Presidential Awardee for Excellence in Mathematics & Science Teaching; and Janet Standeven, the Georgia Bio Biotechnology Teacher of the Year. Together, the Council is presenting a workshop at the upcoming Georgia STEM Forum.

Also, we are pleased to announce several changes to the Institute’s Board of Advisors. Chuck Foglegren (Vice President of Clinical Trials, med fusion) is the Board’s newly elected Vice Chair, and will succeed Jaime Graham (Partner, Kilpatrick Townsend & Stockton) as the Board’s Chairperson in January 2017. We also welcome new Board members: Phil Gibson, Ph.D. (Director, Georgia Bioscience Training Center, QuickStart), Henry Charlot (Manager, Business Services and Partnerships, Atlanta Regional Commission), Cynthia Sundell, Ph.D. (Senior Director of Industry Collaborations, Office of Industry Collaboration and The Petit Institute for Bioengineering and Bioscience, Georgia Institute of Technology) and J. Phillip Bowen, Ph.D. (Professor of Pharmaceutical Sciences, and Director, Center for Drug Design, Mercer University).

Finally, I’d like to offer two internship opportunities with the Institute. Please contact me at jrose@gabio.org if you are interested.

• Equipment Depot Manager - Help us organize and catalog our lending library of laboratory supplies for K-12 classroom use. Manage our online database, package orders, coordinate pickup/delivery of items.

• Social Media Manager - Manage the Facebook and Twitter accounts for the Institute. Generate and share relevant content, engage with partners to develop an online community, develop and implement tactics to increase likes/follows.

I look forward to meeting you at the next Georgia Bio event.

Sciencerely,

Jordan Rose
Executive Director, Georgia BioEd Institute
On October 3, 2016, Georgia Bio hosted the Second Annual Swings FORE STEM Golf Tournament at the Country Club of Roswell. Nearly 50 attendees, who represented life science and biotechnology companies throughout Georgia, enjoyed a gorgeous day of golf for a good cause. Two volunteers and staff assisted attendees throughout the day.

At the time of registration, attendees were divided into teams of 4. The overall outing team winners were Team Galectin Therapeutics consisting of Charles Allgood, AON; Jack Callicutt; Rex Horton; and Peter Traber all of Galectin Therapeutics.

The generous support of event sponsors, including, Kilpatrick Townsend (presenting sponsor), Arbor Pharmaceuticals (reception sponsor), Aviragen Therapeutics (photography sponsor) and PhRMA (breakfast sponsor), generated $22,000 in sponsorship funds. Hole sponsors included Alimera Sciences, CRB, Galectin Therapeutics, Nelson Mullins, Sandals Resorts, and Sutherland. At their time of arrival at the event, attendees were given the opportunity to purchase raffle and putting contest tickets, and mulligans, which raised an additional $1300. In total, the golf tournament raised an impressive $25,000.

The funds raised for the event will benefit the Georgia BioEd Institute, a division of Georgia Bio, a 501(c)(3) nonprofit organization serving the state’s life science industry. The Institute’s mission is to strengthen Georgia’s life sciences workforce pipeline through classroom-to-career initiatives that align with industry needs.

Overall, the Swings FORE STEM was a success. Georgia Bio encourages you to stay tuned and sign up for the spring 2017 tournament!

The additional tournament winners:

**Putting Contest**
Derek Eberhart, University of Georgia
Curtis Large, CRB

**Longest Drive**
Angela Walsh, Celtsys
Jack Callicutt, Galectin Therapeutics

**Closest to the Pin**
Becky Morrow, Team PhRMA
David Eitel, Encompass Pharmaceutical Services, Inc.

For more information about GaBioEd, visit the website:
The 2016 Georgia Bio Summit was held on September 28th at the Cobb Galleria Centre in Atlanta, Georgia. With nearly 500 attendees and participants, the Summit showcased the innovation, collaboration, and growth within Georgia’s life sciences community.

The one-day event kicked off with a keynote address and panel discussion led by James C. Greenwood, President and CEO of Biotechnology Innovation Organization (BIO). In his keynote address, Mr. Greenwood spoke of the pharmaceutical industry coming under recent attack regarding rising drug prices. Rather than having a ‘whack a mole’ response to allegations, Mr. Greenwood suggested the pharmaceutical industry convey a story that not only addresses the economic realities of medicine, but also highlights the many ways in which biotechnology has improved patients’ lives and their access to medicine.

Following his address, Mr. Greenwood led a panel discussion with Mary Wooley, President of Research!America, and Gillian M. Cannon, PhD, President of North American Operations, UCB, Inc. During this discussion, Dr. Wooley reported results of recent public opinion surveys that highlighted several missed opportunities, such as showing the connection between medical research and improved health and highlighting the biopharmaceutical industry’s important role in medical research. She also emphasized the importance of bringing academia and industry together, as well as connecting scientists with non-scientists.

Dr. Cannon spoke about the importance of value as it pertains to better supporting patients. For example, she highlighted UCB’s efforts to use technology and data to ensure patients get the drugs they need at the time they need them. Regarding the definition of value, though, Dr. Cannon acknowledged the challenge with finding a common definition of that term among those that play a role in patient care.

During lunch, attendees listened to a lively and engaging keynote address and panel discussion, led by Jesse Milan Jr., JD, Intern President and CEO of AIDS United. In his keynote address, Mr. Milan spoke of his personal journey of being HIV positive. He also spoke of the sobering reality that people are still dying of AIDS, despite the major treatment advances for this disease. To address the troubling gap between patients who know they are HIV-positive and those who receive the treatment they need to achieve viral suppression, Mr. Milan spoke about the National HIV/AIDS strategy. The vision for this strategy is that new HIV infections will be rare, and that those who are infected “will have unfettered access to high quality, life-extending care, free from stigma and discrimination.” Importantly, Mr. Milan noted that, with effective viral suppression, HIV-positive patients can become non-infectious, allowing them to change the way think about themselves.

Following this address, Mr. Milan led a panel discussion with two patients with chronic diseases: Andy Lipman of the Cystic Fibrosis Foundation and Suz Schrandt, JD, Director of Patient Engagement at the Arthritis Foundation. Both Mr. Lipman and Mrs. Schrandt spoke of how they came to terms with their diseases and how much their lives have benefited from advances in biotechnology. When asked if they faced stigma or experienced frustration, both patients discussed the lack of awareness of their diseases and how people do not understand the seriousness of those diseases.

Despite these frustrations, Mr. Lipman and Mrs. Schrandt expressed optimistic outlooks for the future. Mrs. Schrandt explained that there’s more work to do, specifically with working to establish long-term collaborations between patient advocacy groups and the pharmaceutical industry. When asked by an audience member about personalized medicine, both Mr. Lipman and Mrs. Schrandt agreed that personalized medicine is the way to go, especially since people can be affected in different ways by the same disease.

In summary, the Summit’s keynote sessions highlighted the pharmaceutical industry’s roles in developing innovative and life-saving treatments, as well as improving patient access to these treatments.

Dr. Pendergrass is the founder of JPen Communications LLC, an Atlanta-based medical communications business.

Additional Resources available at:
http://timeisprecious.life/
Summit Highlights
Breakout Sessions and Company Presentations
JoAnna Pendergrass, DVM

The Georgia Bio Summit, held on September 28th at the Cobb Galleria Centre in Atlanta, Georgia, featured breakout sessions that were grouped into different tracks, including research & innovation, business issues, and CEO chats. In addition, a wide array of biotechnology companies had the opportunity to give short presentations on their products during the ‘Innovation Stage’ and ‘Bioscience Company Showcase’ Summit sessions.

One of the ‘Research & Innovation’ sessions focused on bringing innovative medical devices to market. Among the many topics discussed during the panel discussion, Tiffany Wilson Karp (CEO, The Global Center for Medical Innovation) emphasized the importance of research institutions and companies collaborating to get medical devices to market, rather than duplicating efforts. She also spoke of the passion and perseverance required to bring a medical device to market.

Within the ‘Business Issues’ breakout sessions, featured panelists discussed the various collaborative efforts between some of Georgia’s research universities. For example, the Atlanta Clinical & Translation Science Institute was mentioned, which combines the research efforts of Emory University, Georgia Tech, and Morehouse School of Medicine. In addition, panelists discussed challenges facing the pharmaceutical industry. One specific challenge is the negative public perception of the industry, potentially because the public may not understand the cost and duration of drug development.

The CEO chats featured CEOs from pharmaceutical companies in Georgia. They discussed various aspects of leading a company, such as evolving from start-up status, running a company, and overcoming barriers to success. When talking about building a company from the beginning, Raymond F. Shinazi, PhD (Chairman, Cocrystal Pharma, Inc.) and Dan Myers (CEO, Alimera Sciences) provided valuable advice on how to successfully gain funding from venture capitalists, as well as find and retain the right employees. In another CEO chat, Daniel H. White (President and CEO, Clearside Biomedical, Inc.) mentioned that a ‘street fighter’ mentality can sometimes be required to gain enough capital to grow a company. Regarding overcoming barriers to success, panelists agreed that different leaders are needed for the different phases of a company’s growth.

Even as a company grows, it is important to consider an exit strategy. A breakout session on entrepreneurship featured a panel discussion on how a company should prepare for and implement its exit strategy. For example, Mikel Parker (Director, Genesis Capital) mentioned that a company should know what their ultimate goal is for exiting and be able to identify the right buyers and investors. Pete Selover (Principle, Oriole Animal Health) discussed the challenges of integrating one company into another and highlighted the importance of being transparent and honest with those who will be affected by the integration.

During the ‘Innovation Stage’ sessions, companies gave brief presentations discussing their innovative biotechnology products that address unmet patient needs. Companies featured during these sessions included DD Therapeutics, Proventus Bio, Holmes-McCall Biotechnologies, and BeeClear, LLC. DD Therapeutics is developing a transdermal drug delivery system to improve current methods of drug delivery. Proventus Bio is working to address the global vaccine deficit by improving vaccine manufacturing using innovative cell-based platforms. Holmes-McCall Biotechnologies is currently developing a personalized, at-home physical rehabilitation game called ‘MyPlay’ for children with autism. BeeClear, LLC has come up with a device to address the difficulties parents face when aspirating their children’s nasal cavities.

Several companies were featured during the Bioscience Company Showcase sessions. One such company was 4P Therapeutics, which focuses on developing novel drug delivery methods and therapeutics. 4P Therapeutics has developed DefentTM, a transdermal patch that has a taste aversion component to deter transdermal fentanyl abuse. Another company, Cell Constructs, has developed ProgenaFilmTM. ProgenaFilmTM is a film that uses keratin—sourced from human hair—to quicken wound healing. The film has several therapeutic uses, including diabetic ulcers and skin graft donor sites.

Overall, the breakout sessions and company presentations provided Summit attendees with ample information on what new biotechnologies are being developed in Georgia, along with thought-provoking perspectives on what it takes to start and run a successful pharmaceutical company.

Dr. Pendergrass is the founder of JPen Communications LLC, an Atlanta-based medical communications business.
Building Skills for Career Success While in Academia

Lauren Celano, CEO, Propel Careers

The topic of career planning is something that I discuss with almost everyone I speak with, regardless of whether they are a graduate student or industry professional. I emphasize that regardless of where someone is in their career, steps can be taken to develop the hard (e.g. techniques) and soft (e.g. management) skills necessary for career advancement. Since successful careers develop over years, even decades, the earlier someone starts to plan, the better. Even as a graduate student or postdoctoral fellow, ample opportunities exist to develop skills. Below are two examples of proactive career development. By sharing these, I hope to inspire others to take similar initiative.

Ph.D. student passionate about research in industry:

I recently talked with a Ph.D student who is extremely interested in performing bench research for a biotech company. She described her background and how she developed marketable skills. During her Ph.D, she honed her technical skills and took every opportunity to learn about industry relevant work. She took the initiative to lead a collaboration with an industry partner to focus on small molecule screening against a drug target. She also had the opportunity to write grants and a patent for her work. During her 4th and 5th years, she trained interns, RA’s and other grad students on research techniques. During her 5th year, she also became involved with the Boston chapter of the national disease association related to her research. She did this to learn more about the current state of industry research in her field and also to increase the size of her professional network. She has just started her job search and her preparedness will certainly pay off.

Postdoctoral fellow passionate about starting a company:

I recently talked with a postdoctoral fellow who has a strong record of accomplishment (Nature and Cell papers) and a 10-year goal of starting a biotech company. During his Ph.D. and postdoc, he has been very focused on building business skills to increase his chance of success. As a 3rd year Ph.D. student, he began to build business skills by interning in the university Technology Transfer office, performing scientific due diligence on technologies relevant to his research background. This work also provided exposure to market research and competitive landscape assessments and insight into what makes a technology commercially attractive. As a 4th and 5th year Ph.D. student, he interned for ~ 5-10 hours a week at a venture capital firm and performed scientific diligence on technologies of interest to the firm. After his Ph.D, he chose to do a postdoc at a top lab in his field to gain new scientific skills and deepen his disease area knowledge. During his postdoc, he also became involved with the Technology Transfer office where he evaluated technologies for commercial potential. Now, as a 3rd year postdoc, he is actively pursuing roles at boutique life sciences consulting firms that focus mainly on business development work - merger, acquisition, and partnership strategy, as compared to the general strategy consulting firms. These firms will provide him with relevant knowledge and experiences for his career goal, which is to start a biotech company and have a successful exit.

The individuals in these examples may seem more proactive than most, but I chose to highlight them since these types of profiles are very attractive to companies. In my next blog, I will provide examples of how skills can be developed after joining industry.

Source: www.propelcareers.com

Molecular Modeling at Mercer College of Pharmacy

J. Phillip Bowen, Ph.D.
Director, Center for Drug Design
Department of Pharmaceutical Sciences
Mercer University College of Pharmacy

The vast majority of small molecular drugs exert their biological activity by interacting with macromolecular targets. In order to understand the origins of biological activity, it is necessary to understand molecular structure. The use of computers in combination with experimental data has generated a number of commercially available drugs. The qualitative visualization of molecular structures, coupled with computational information, is referred to as molecular modeling or computer-based drug design.

Computational chemistry, computational biochemistry, and informatics are now widely accepted branches of modern medicinal chemistry. The scientific literature is replete with examples where computer-based methodologies have been developed, or existing techniques have been applied, to solve a wide variety of problems of chemical and biomedical interest. One would be hard pressed to find medicinal chemistry research articles without some level of computational methods. With the advent of powerful and inexpensive computers, many of the most fundamental problems at the interface of chemistry, biology, and physics can be pursued more effectively. Computer-based methods have been used effectively in pharmaceutical research to design biologically active compounds, many of which are currently on the market and used to treat various diseases.
The Center for Drug Design at Mercer University College of Pharmacy was established in 2011. Although I spent most of my professional career in chemistry departments, I started out as an Assistant Professor in the Division of Medicinal Chemistry in the School of Pharmacy at the University of North Carolina at Chapel Hill. It is interesting to be back in a pharmacy school environment. The Center is involved in fundamental and applied research with scientists at Mercer and beyond. We have an in-house collaboration with Dr. Diane Matesic in the Department of Pharmaceutical Sciences to develop novel akt inhibitors. We are collaborating with Dr. Kathy Griendling and Dr. Bernard Lassègue (Department of Cardiology, Emory University School of Medicine) and Dr. Blake Watkins (School of Pharmacy, Union University) and Dr. Amol Kulkarni (School of Pharmacy, Howard University) to develop Nox4 inhibitors, as well as with Dr. Robbie Phillips (Department of Chemistry, University of Georgia) to develop KMO inhibitors. We are looking to develop some local industrial collaborations that might benefit from computational design methods.

In addition to research, molecular modeling is being used by our professional pharmacy students in their classes to visualize drug structures, calculate physical properties, and understand drug-receptor interactions. Our graduate students use molecular modeling software in graduate courses, which can aid them in many areas of interest for pharmaceutical scientists. The use of molecular modeling transforms two-dimensional static structures into three-dimensional structures that can be rotated and manipulated. We require all of our pharmacy students in their first year to purchase the student version of Spartan (Wavefunction, Inc.), which is amazingly powerful for the price. At Mercer College of Pharmacy we offer separate special topics molecular modeling courses for our professional and graduate students. In collaboration with GaBio, we have offered a “hands-on” training course for secondary school teachers and look forward to doing this again in the near future.

Figure 1. The structure of doxycycline has been geometry optimized at the HF/6-31G(d,p) level of theory in Spartan. A solid electrostatic potential surface has been generated and partially cut away to see the dug. The dotted yellow lines indicate hydrogen bonding. The blue colors of the surface represent electron deficient regions, whereas the red colors represent electron rich regions.

Upcoming Events

Careers in Life Sciences Series:
Finance, Consulting and Business
October 26, 2016

Careers in Life Sciences Series:
Entrepreneurship
December 1, 2016

This newsletter is produced and edited by the Georgia Bio Emerging Leaders Network. The ELN is devoted to promoting networking between emerging and established professionals within the Georgia life sciences community.

Questions about ELN? Contact eln@gabio.org.
Website: www.gabio.org/eln
GaBioEd Board Member Highlight
Featuring Jamie Graham

What motivated you to join the board of Georgia Bio?

I have always been involved with Georgia Bio even before it received that name. Actually, I knew about the organization when it was called “the Clifton Corridor”. I then became involved with the group when it was known as the Georgia Biomedical Partnership. I routinely attended the monthly breakfast meetings when it was the only such organization in Atlanta. It was a great place to network and meet people in the field. By the time the name changed to GABIO, my law firm was very involved. When our firm’s representative left the board position, I received a call from Maria Thacker asking me if I would be “taking over the reigns”. How could I refuse? I decided to join the newly created Education and Workforce committee – it had a great mission of ‘going to the roots of building the life sciences industry workforce’. The focus of the committee became an important aspect of GaBio and was formalized in 2013 as a separate institute - the GaBioEd Institute. I currently serve as the chair of the Institute with tremendous support of a talented Board of Advisors, the GaBio Board of Directors and the GaBio staff. We just hired our first Executive Director, Jordan Rose, and are excited to move the Institute to the next level. Companies will not move their facilities to Georgia unless trained bioscientists are available to fill positions. Georgia won’t have any biologists to train if students aren’t motivated to explore academics in the biological sciences. And students won’t be motivated unless they are exposed to biology teachers having the passion and expertise in all things biologic.

Submit a GaBioEd Newsletter Article

Young writers and Institute partners are invited to have their work featured in the Georgia BioEd Institute Newsletter.

Submit articles on popular and even controversial industry topics.

Sample topics include:

- Interviews with Industry Leaders; IP;
- Educational Programs/Partners; Company Highlights; Job/Workforce/Career Topics;
- GaBioEd Programming & Events, etc.

Georgia Bio/ELN does not pay for articles. Article length: 250-500 words.

Support GaBioEd

The Georgia BioEd Institute helps to open minds through programs and partnerships, and your support is vital to help us achieve our mission. Georgia BioEd’s continued success depends on the strength of corporate partnerships, the ability to forge effective collaborations and your donations.

All donors receive recognition on the Georgia BioEd website. To learn about the various benefits of sponsor levels please contact Jordan Rose at jrose@gabio.org.

The Georgia BioEd Institute is a division of Georgia Biomedical Partnership (d/b/a Georgia Bio), 501(c)(3) non-profit organization, EIN: 58-1849665. Your gift may qualify as a charitable deduction for federal income tax purposes.

Click here for more details.
THANK YOU to all of our current donors and supporters! Without your contributions to Georgia BioEd our work would not be possible.

For more information on our current donors visit: http://www.georgiabioed.org/role-impact/donors/

JOIN THE LIST OF DONORS!
Contact Jordan Rose at JRose@GaBio.org for details.