<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:45 a.m. – 9:00 a.m.</td>
<td>Check-in/Continental Breakfast</td>
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</table>
| 9:00 a.m. – 10:30 a.m. | **Bioworks: Its Connection to Biologistics & Packaging**  
Brandon Wellford, Bioworks  
**Solar ColdBox**  
Nicole Smith and Michael Goodwyn, Aldelano |
| 10:30 a.m. – 10:40 a.m. | Break                                                                   |
| 10:40 a.m. – 12:00 p.m. | **SweetBio Journey to FDA Clearance**  
Kayla Rodriguez, SweetBio  
**2016 TransPack Forum in Review**  
Larry Rutledge, CBU Packaging Lab |
| 12:00 noon – 1:00 p.m. | Lunch                                                                   |
| 1:00 p.m. – 2:30 p.m. | **Polymer Research & Biologistics**  
Firouzeh Sabri, University of Memphis |
| 2:30 p.m. – 2:40 p.m. | Break                                                                   |
| 2:40 p.m. – 3:40 p.m. | **Cold Chain Packaging R&D Projects @ CBU**  
Pong Malasri, Christian Brothers University |

Campus Map: [http://www.cbu.edu/assets/2091/cbumap2015.pdf](http://www.cbu.edu/assets/2091/cbumap2015.pdf)

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Meeting Sponsors

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(http://www.memphis.edu/)

Memphis Bioworks
(http://www.memphisbioworks.org/)

Aldelano Corporation
(http://solarcoldbox.com/)

SweetBio
(http://www.sweetbio.com)

Christian Brothers University
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Registered Participants

1. Baker, Chad  
   Christian Brothers University
2. Behles, Cody  
   University of Memphis
3. Bonner, April  
   Christian Brothers University
4. Gadomski, Dick  
   Christian Brothers University
5. Garcia, Luis  
   MicroPort Orthopedics
6. Gilman, Jay  
   FedEx
7. Golias, Mihalis  
   University of Memphis
8. Goodwyn, Michael  
   Aldelano
9. Hare, Charlotte  
   Christian Brothers University
10. Housewirth, Jade  
    Christian Brothers University
11. Ivey, Stephanie  
    University of Memphis
12. Johns, Georgina  
    Christian Brothers University
13. Le, Phillip  
    Bayer Consumer Care
14. Lin, Louie  
    Christian Brothers University
15. Loving, Benjamin  
    Christian Brothers University
16. Malasri, Pong  
    Christian Brothers University
17. Mishra, Sabya  
    University of Memphis
18. Moats, Bob  
    Christian Brothers University
19. Nguyen, Ngan Kim  
    Christian Brothers University
20. Nobes, Geoff  
    Evergreen Packaging
21. Phaneuf, Rob  
    MicroPort Orthopedics
22. Pourhashemi, Ali  
    Christian Brothers University
23. Ray, Asit  
    Christian Brothers University
24. Rodriguez, Kayla  
    SweetBio
25. Russell, Stephen  
    Christian Brothers University
26. Rutledge, Larry  
    Christian Brothers University
27. Sabri, Firouzeh  
    University of Memphis
28. Savage, Sammurelle  
    Christian Brothers University
29. Shannon, John  
    Viskase Companies
30. Smith, Nicole  
    Aldelano
31. Thomas, Erica  
    Christian Brothers University
32. Vazquez, Juan  
    Christian Brothers University
33. Wadlington, Clark  
    Christian Brothers University
34. Wellford, Brandon  
    Memphis Bioworks
35. Yeasin, Mohammed  
    University of Memphis
36. Zheng, Zhihong  
    Christian Brothers University
37. Zhou, Yongquan  
    FedEx

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ABSTRACTS
Abstract: Memphis Bioworks is the Mid-South’s go-to organization for creating companies, jobs and investments. A visionary community leader, Memphis Bioworks has a well-established record of sparking new levels of economic vitality by investing in entrepreneurs, building state-of-the-art labs and facilities, and training the next generation of workers. Bioworks was created in 2001 as part of a citywide effort to foster economic growth by building on Memphis’ strengths and bioscience potential in the medical, agricultural and logistics fields. The organization is a 501(c)(3) non-profit organization funded through philanthropic contributions, corporate support, and state and federal grants. In addition to the work of the Foundation, Bioworks executes its mission through a family of organizations created to fulfill economic development needs in the community.

With Memphis being America’s Distribution Hub, the local community has a vast amount of talent and assets related to logistics and specifically packaging. It is important that Memphis is recognized for these capabilities and that we are a center for new ideas and companies related to logistics and packaging. In May, Bioworks will start a second cohort of logistics companies that are focused in these areas:

- Cross-border E-Commerce solutions
- First- and last-mile delivery solutions
- Fleet efficiency
- Data-driven supply chain management, including predictive analytics
- Payment systems
- Location and contextual-based services
- Internet of Things
- Autonomous vehicles
- Robotics
- Sensors
- Smart packaging

Through a competitive application process, up to six companies will be selected for the 2016 cohort and will receive $50,000 in initial seed capital. In return for an equity stake, each participating company will receive a $25,000 investment to work on developing the initial product and business model from Innova, a Memphis-based venture capital firm that has invested in more than 60 early-stage companies and co-founded the ZeroTo510 Medical Device Accelerator with Memphis Bioworks, as well as a $25,000 match from EPIcenter.

1 CFO, Memphis Bioworks, 20 S. Dudley, Suite 900, Memphis, TN 38103, bwellford@memphisbioworks.org
During the 15-week accelerator, entrepreneurs go through an intense, mentorship-focused program that includes classroom activity, hands-on exercises and rigorous business-building curriculum. The companies spend the bulk of their time on market validation, refining their business models, and proofs-of-concept. Post-acceleration programming will be available to help teams continue to develop and grow their startup companies. At the end of the program, each team presents its business to investors, business leaders and community supporters at Memphis Demo Day.

**Keywords:** Economic Growth; Startup; Medical Device; Biologistics

**Presenter:**

Brandon Wellford has served as the Chief Financial Officer and Director of Real Estate for the Memphis Bioworks Foundation since 2004. He is responsible for the financial and real estate functions for the Foundation including about 20 for-profit and non-profit organizations sponsored by Memphis Bioworks. Mr. Wellford managed the demolition of the 1.3 million square foot hospital facility in the Medical center which has led to the construction and renovation of 305,000 square feet of laboratory/office space with more than $140 million in investment.

Prior to working at Memphis Bioworks, Mr. Wellford worked for 22 years for real estate development companies in Little Rock, Ark, Tucson, AZ, and Washington, D.C. He is a Certified Public Accountant (inactive) and holds a Bachelor of Science in Business Administration degree from the University of Tennessee at Martin and graduated from Christian Brothers High School. He was born in Memphis and was raised on a farm in Cordova.
Abstract: In developing nations, 40% of food is wasted post-harvest due to lack of a sufficient cold infrastructure. It is estimated that by 2025, 1.8 billion people around the world will live in “extreme water scarcity.”

Aldelano Solar Cold Chain Solutions™ has addressed these needs with innovative, life-saving technology. The Aldelano Solar ColdBox™ is a fully off-grid, solar powered cold storage system which delivers both freezing and refrigeration storage solutions with temperatures ranging from -10° to 55° Fahrenheit. The Aldelano Solar WaterMaker™ and IceMaker™ literally produce water and ice by pulling the moisture from the air and purifying it for consumption. All are off-grid solutions powered through solar energy.

Aldelano will share our direction for introducing these new products to industry and developing markets, as well as provide a glimpse into some of our exiting new projects.

Keywords: Post harvest waste; water scarcity; off-grid; solar; refrigeration; cold storage; water

Presenters:
Nicole Smith - Nicole Smith is a 25 year industry professional and the C.O.O. of Aldelano Corporation. Nicole has overseen the startup and operations of dozens of production operations, working closely with Fortune 500 clients. Oversees the development of the Solar ColdBox line of products and continues to lead in the advancement and improvement of these products.

Michael Goodwyn - Michael Goodwyn is a certified Electrical Engineer with 6 years of Navy training. He has a background in carpentry and mechanics as well as production and operations management. Michael is the Lead Engineer and Operations Manager for the ColdBox project and the brains behind much of the innovative technology.

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2 mgoodwyn@aldelano.com
SweetBio Journey to FDA Clearance

Kayla Rodriguez

Abstract: How does a startup company know how to commercialize a product? SweetBio co-founder, Kayla Rodriguez, will first present on how SweetBio created and utilized a roadmap to identify and understand puzzle pieces necessary to achieve FDA 510(k) clearance. Additionally, thinking outside “the box” with respect to research and relationship building has given SweetBio an advantage. Even though there are several industry standards for FDA clearance, Kayla will provide insights into how SweetBio asked potential customers about what packaging they want, what claims would entice them to purchase their product, and how this has dictated SweetBio’s FDA 510(k) Clearance pathway.

Keywords: FDA 510(k); Startup

Presenter:

Kayla Rodriguez – Kayla earned her MBA in 2014 from Hult International in San Francisco, CA and New York City, NY. Her forward thinking business mindset is unique and her overall knowledge of business development, marketing, operations, organizational effectiveness, and front-end web development in Fortune 40 experience made her a fit for the COO role at SweetBio. She is responsible for operational efficiency, manufacturing, quality and logistics.
2016 TransPack Forum in Review

Larry Rutledge

Abstract: CBU’s Package Test Lab Services strives for continuous improvement through attendance at ISTA technical forums and other educational platforms focusing on latest trends in transport packaging. This year’s attendance at the 2016 Transport Packaging Forum provided a balance of interesting case studies, research and innovative packaging solutions presented by experts from Asia-Pacific, Europe, North America and South America. This short presentation at CBU’s spring HPC meeting will share key points and takeaway’s from this year’s forum.

Keywords: ISTA TransPack Forum, Healthcare packaging consortium, Distribution Packaging, Package Testing

Presenter:

Larry Rutledge is the Manager of CBU’s ISTA certified Packaging lab. A former packaging manager at FedEx for 18 years, his experience covers every aspect of distribution packaging. He served as a past member of the ISTA Board of Directors, named the recipient of the 2010 ISTA prestigious "R. David LeButt Memorial" Award, and is currently a member of IoPP. He can be reached at lrutledge@cbu.edu
Polymer Research & Biologistics

Firouzeh Sabri

Abstract: Aerogels are currently the best and lightest solid insulating material known. This presentation will cover the materials research that is ongoing in the Sabri research group. The presentation will give an overview of aerogels and composite materials made with aerogels and their relevance to cold chain storage and biologistics.

Keywords: Polymers, sensors, aerogels, thin films, biologistics

Presenter:

Firouzeh Sabri – Firouzeh Sabri is an Associate Professor of Physics and Materials Science at the University of Memphis. She established the Bio, Nano, and Space Materials Laboratory in 2007. Her research involves experimental materials physics with an emphasis on aerogels and elastomeric polymers. She has been funded for her materials research nationally and regionally and is the recipient of the 2008 APS Hildred Blewett award for women in Physics.

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1 Associate Professor, Physics Department, University of Memphis, 219 Manning Hall, Memphis, TN 38152, fsabri@memphis.edu
Cold Chain Packaging R&D Projects @ CBU

Siripong Malasri

Abstract: This presentation will cover two recent projects at CBU related to cold chain packaging:

- **Temperature Sensitive Label**

  Performance of a commercially available temperature sensitive label was investigated. These labels were designed to detect temperature within the range of 100F to 150F. Several materials were used with these labels, i.e., corrugated card board, plastic, wood, aluminum, fiber glass, plastic, and Styrofoam. Effect of base materials and heating durations will be discussed.

- **In-House Developed Low-Cost Temperature/Humidity Chamber**

  A low-cost temperature/humidity chamber was developed. Its performance was evaluated using a portable data recorder. The chamber construction and performance evaluation will be discussed.

In addition to the above two studies, the CBU Packaging Lab plans to pursue ISTA thermal lab certification. Requirements for the certification will also be presented.

**Keywords:** Cold Chain Packaging; Temperature Sensitive Label; Temperature/Humidity Chamber; ISTA Certified Thermal Lab

**Presenter:**

Siripong Malasri – Dr. Malasri is currently Dean of Engineering and Director of the Healthcare Packaging Consortium, Christian Brothers University. He is an ISTA CPLP (Professional Level) and a registered professional engineer in Tennessee. His research interests include artificial intelligence applications and packaging.

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http://conferences.packcon.org/

http://technical.cloud-journals.com/index.php/IJAPT/index
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