Agenda

I. Welcome, Introductions and Announcements

II. Approval of Agenda
   Recommended Action: Approve or modify agenda as needed.

III. Board Composition
   A. Vacant Positions (p. 2)
      Recommended Action A: Executive Committee recommends to the Board of Directors that an invitation be extended to the incoming Assistant Director, Career, Standards & Assessment Services, Kansas Department of Education, to serve on the Board.
   B. Unaccepted Board position (p. 2)
      Recommended Action B: CIEE Co-chairs recommend to the Board of Director that a vacancy be declared for the unaccepted Board position.
   C. Board member nomination (p. 3)
      Recommended Action C: Executive Committee recommends to the Board of Directors approval of John Lovitt's nomination to Board.

IV. Approval of Minutes from January 10, 2012, Board of Directors Meeting (p. 4-5)
   Recommended Action: Approve or modify minutes as needed.

V. Report and approval of Minutes from April 6, 2012, Executive Committee Meeting (p. 6-7)
   Recommended Action: Approve or modify minutes as needed. (Executive Committee only)

VI. Technical Advisory Panel member substitutions for April proposal evaluation (p. 8)
   Recommended Action: Receive report and file.

VII. CIEE Funding Update Reports
   A. Energy Sector Partnership and Training Grant (p. 9)
   B. Jobs and Innovation Accelerator Challenge (JIAC) (p. 9-11 and p. 12)
   C. Kansas Engineering Excellence Project (KEEP) (p. 11)
   D. Open Positions (p. 11)
      Recommended Action A: Approve or modify nominations to the JIAC Advisory Board as needed.
      Recommended Action B: Receive reports and file.

VIII. Recommendation from Executive Committee for funding competitive proposals (p. 13-18)
      Recommended Action A: Executive Committee recommends to the Board of Directors to fund Ramazan Asmatulu, Nanocomposite Spheres for Self-healing of Composites Wind Turbine Blades Faculty-Business Fellowship proposal in the amount of $20,000.00 with the stipulation that business counseling support is solicited, alternate market applications are investigated and pending availability of funds.
      Recommended Action B: Executive Committee recommends to the Board of Directors to fund three competitive technology development and business counseling grants listed below in the total amount of $144,020.00 pending successful contract negotiations, legal review and availability of funds.
         a) Ross Jordan, Ocianna International, $49,975.00, Mooring and/or anchoring product for water based shallow and deep-water vessels.
         b) Vis Madhavan, Fairmount Technologies, $44,045.00, Parametric Study of Stretch Roll Forming Processes using Experiments and Finite Element Analysis.
         c) Joel Thompson, Mid-Continent Composites, $50,000.00, Master tooling for Model 206E ‘Escape’ Prototype Aircraft.

IX. Adjourn (Noon)

Next Meeting:
July 10, 2012, WSU Marcus Welcome Center, Room 102 from 10:30 a.m. to Noon
III. Board Composition

A. Vacant Positions
   i. Vacant Board seat for Financial/Investor
   ii. Resignation for K-12 seat by Robin Harris, December 12, 2011. Successor has been named and will start in early May. Staff anticipates that Successor will accept nomination to Board.

   **Recommended Action A:** Executive Committee recommends to the Board of Directors that an invitation be extended to the incoming Assistant Director, Career, Standards & Assessment Services, Kansas Department of Education, to serve on the Board.

B. Unaccepted Board position (Siemens)

   **Recommended Action B:** CIEE Co-chairs recommend to the Board of Director that a vacancy be declared for the unaccepted Board position.

   **CIEE Bylaws, Article II: Membership and Officers, Section 4: Vacancies (p. 3)**

   The Board may declare a vacancy if a member is of unsound mind by an order of the court, or convicted of felony, or for any other proper cause, or if within 60 days after notice of selection, the member does not accept such position either by writing or by attending a meeting of the Board.

   Any vacancy or vacancies in the Board because of death, resignation, removal in any manner, disqualification, an increase in the number of members, or any other cause, may be filled by the Board based upon nominations presented at any regular or special meeting; and each person so elected shall be a member to serve for the balance of the unexpired term of the Center.

   A two-thirds vote by the Board is needed to confirm a candidate to a position in the Board.

   **CIEE Bylaws, Article III: Meetings, Section 4: Attendance (p. 4)**

   If any Board member fails to attend three consecutive regular meetings without extenuating circumstances, the Board Co-chairperson(s) shall recommend that the member be removed and this action must be voted on by a quorum of the Board.
C. Board member nomination

John Lovitt\(^1\) is an alumnus of University of Missouri-Rolla and Wichita State University. Mr. Lovitt works with executive teams in early stage technology companies to develop their businesses and themselves.

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<tr>
<th>Current</th>
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<tbody>
<tr>
<td>- Board of Directors at TransMed Systems</td>
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<td>- Board of Directors and CEO at Pattern Insight</td>
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<td>- Board of Directors at Appistry</td>
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<th>Past</th>
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<td>- Habitat for Humanity East bay board of directors member at Habitat for Humanity International</td>
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<td>- Board member at Habitat for Humanity East Bay</td>
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<td>- Board of Directors at Codefast</td>
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- VP at IBM Rational Software
- Senior VP WW field operations at IBM Rational
- VP Field Operations at Rational Software, IBM
- Senior VP at Rational Software
- Senior VP at Rational
- Area Manager at Hewlett Packard (HP)

<table>
<thead>
<tr>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>- University of Missouri-Rolla</td>
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<td>- Wichita State University</td>
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*Recommended Action C: Executive Committee recommends to the Board of Directors approval of John Lovitt’s nomination to Board.*

\(^1\) Per LinkedIn Profile.
IV. Approval of Minutes from January 10, 2012 Board of Directors Meeting

**Recommended Action:** Approve or modify minutes as needed.

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**Meeting Topics and Discussion:**

I. Welcome, Introductions and Announcements

Dean Zulma Toro-Ramos began the meeting by welcoming members followed by meeting attendee introductions and confirmation of quorum.

II. Approval of Agenda

The agenda was reviewed and approved as presented. *(Sullivan/Fornaro-Dean)*

III. Approval of Minutes from September 27, 2011, Board of Directors Meeting

The minutes from September 27, 2011, Board meeting were reviewed and approved as presented. *(Wesolowsky/Davis)*

IV. Approval of Minutes from November 1, 2011, Executive Committee Meeting

Toro-Ramos and Franklin provided a review of the Technical Advisory Panel selection process and EC phone meeting. The minutes from November 1, 2011, Executive Committee were reviewed and approved as presented. *(Lawing/Krone)*

V. Approval of Minutes from December 14, 2011 Executive Committee

Toro-Ramos and Wesolowsky provided an overview of the meeting beginning with a review of the competitive business solicitation and faculty entries. There were 15 competitive business solicitation and seven faculty entries which were reviewed by the Technical Advisory Panel. Five industry innovators and two faculty innovators (semi-finalist) presented their technologies to the executive board.

Phil Wyssenbach requested that the meeting minutes be amended to include a comment stating that the Executive Committees instructs staff to provide additional encouragement and technical support to Isaac Spear.
VI. Recommendation from Executive Committee for funding competitive proposals

Wesolowsky provided an overview of the EC selection process. The two finalists from the faculty innovators were Asmantulu and McCoy; both presented to the EC. The EC felt that McCoy’s presentation and proposal were more focused and had more commercial potential. The EC recommends funding McCoy’s proposal.

Jones’ presentation was recommended by the EC for funding although Issac Spear’s presentation was also discussed. The EC felt that Spear’s presentation was too broad; staff was directed to provide follow up and encourage Spear to focus his proposal and apply in the next round of solicitations.

A. The EC recommends to the Board of Directors to fund Michael McCoy’s Faculty-Business Fellowship proposal in the amount of $20,000.00 pending successful contract negotiations, legal review and availability of funds. (Wesolowsky/Lawing)

B. The EC recommends to the Board of Directors to fund Jeremy Jones Technology Development and Business Counseling proposal in the amount of $50,000.00 pending successful contract negotiations, legal review and availability of funds. (Wesolowsky/Wyssenbach)

C. Balance of competitive funding to be carried over to the Spring competition. (Wesolowsky/Fornaro-Dean)

Recommendation A and B above were approved by separate vote. Krone abstained from voting on the McCoy recommendation due to potential conflict of interest. The remaining grant money was approved to be carried over to the next round of proposals in the spring.

VII. CIEE Reports

A. Board Membership
   i. Vacant Board seat for Financial/Investor
   ii. Resignation for K-12

B. Industry Roundtable Meeting

C. Funding Update
   i. SESPT
   ii. Jobs and Innovation Accelerator
   iii. Second round of competitive innovation proposal - scheduled to be solicited by end of March 2012.

D. Roundtable Kickoff Event

Reports were received and file.

VIII. Adjourn (10:30 a.m.)

Next Meeting:
April 10, 2012, WSU Marcus Welcome Center, Room 102 from 10:30 a.m. to Noon
V. Report and approval of Minutes from April 6, 2012 Executive Committee

Recommended Action: Approve or modify minutes as needed. (Executive Committee members only)

Meeting Topics and Discussion:

I. Welcome and Introduction
   Meeting opened with a welcome and Executive Committee (EC) member introductions.

II. Board composition discussion (p. 2-3)
   Staff provided an overview of the Board vacancies and highlighted pertinent sections from the CIEE Bylaws.

   Executive Committee recommends to the Board of Directors that an invitation be extended to the incoming Assistant Director, Career, Standards & Assessment Services, Kansas Department of Education, to serve on the Board. (Lawing/Fornaro-Dean)

   Executive Committee recommends to the Board of Directors approval of John Lovitt’s nomination to Board. (Dugan/Wyssenbach)

III. Welcome and introduction of Technical Advisory Guests (2:15 p.m.)
   - Paul Jonas, Director/Environmental Testing Laboratories and Special Programs at NIAR
   - Tyler Brown, CIO of Leslie Rudd Investment Company
   - John Lovitt, works with executive teams in early stage technology companies

IV. Review of semi-finalist proposals
   Staff briefed EC on the TAP scoring process and provided the scores for the semi-finalist proposals.

   Semi-finalist Innovators met privately with the EC to provide an overview of their technology (2-3 minutes) and provide EC time to ask innovators questions (7-8 minutes). EC confidentially discussed each proposal after innovator had exited the conference room.

   - Technology Development and Business Counseling Grants (10 proposal applications were submitted, six semi-finalist interviewed and three proposals are recommended for funding)
   - Competitive Faculty-Business Fellowship (three proposal applications were submitted, three semi-finalist interviewed and one proposal is recommended for funding)
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<tr>
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<th>Jobs Forecast</th>
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<td></td>
<td>Ramazan</td>
<td>Asmatulu</td>
<td>EnerTech, Sunflower Wind/ NREL/ PSU</td>
<td>Nanocomposite Spheres for Self-healing of Composite Wind Turbine Blades</td>
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<td>Thompson</td>
<td>Mid-Continent Composites</td>
<td>Master tooling for Model 206E 'Escape' Prototype Aircraft</td>
<td>$50,000.00</td>
<td>7 Jobs/Q2014</td>
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Recommend Action A: Executive Committee recommends to the Board of Directors to fund Ramazan Asmatulu, Nanocomposite Spheres for Self-healing of Composites Wind Turbine Blades Faculty-Business Fellowship proposal in the amount of $20,000.00 with the stipulation that business counseling support is solicited, alternate market applications are investigated and pending availability of funds.

(Lawing/Dugan)

Recommendation B: Executive Committee recommends to the Board of Directors to fund three competitive technology development and business counseling grants listed below in the total amount of $144,020.00 pending successful contract negotiations, legal review and availability of funds.

a) Ross Jordan, Ocianna International, $49,975.00, Mooring and/or anchoring product for water based shallow and deep-water vessels.

b) Vis Madhavan, Fairmount Technologies, $44,045.00, Parametric Study of Stretch Roll Forming Processes using Experiments and Finite Element Analysis.

c) Joel Thompson, Mid-Continent Composites, $50,000.00, Master tooling for Model 206E 'Escape' Prototype Aircraft, and innovator should seek engineering expertise/assistance from NIAR, the WSU Engineering staff or other CIEE collaborative partners.

(Lawing/Fornaro-Dean)

Applicants whose proposals were not recommended by the EC will be notified by email on April 11, 2012. Applicants will be provided their proposals metrics scores and encouraged to visit CIEE staff for further feedback and debriefing. Applicants will be encouraged to resubmit for funding for the third proposal solicitation.

Next CIEE Board Engagements:

Full Board, Tuesday, April 10, 2012, WSU Marcus Welcome Center, Room 102 (Clark) from 10:30 a.m. to Noon.
VI. Technical Advisory Panel member substitutions for April proposal evaluation

Recommended Action: Receive report and file.

Technical Advisory Board Members

April 4 and 5, 2012

Wichita State University, Four Nominees

Charles Yang, (for Hyuck Kwon who is on professional sabbatical), Title: Professor, Nomination: College of Engineering Strategic Planning Committee, substitution by Executive nomination

Chris Broberg, Title: Assistant Professor of Management and Entrepreneurship, Classification: Center for Entrepreneurship, Nomination: Executive nomination

Krishna Krishnan, Title: Professor, Classification: College of Engineering, Nomination: College of Engineering Strategic Planning Committee

Paul Jonas, Title: Director/Environmental Testing Laboratories & Special Programs, NIAR, Nomination: Executive nomination

Economic Development, Four Members

Clint Siebel, Title: Executive Director, Classification: Economic Development, Nomination: SCKEDD’s Board selected four economic developers to nominate

Kerri Falletti, Title: Director, Classification: Economic Development, Nomination: SCKEDD’s Board selected four economic developers to nominate

Harland Priddle, Title: Executive Director, Classification: Economic Development, Nomination: SCKEDD’s Board selected four economic developers to nominate

Bill Bolin, Title: Executive Director, Classification: Economic Development, Nomination: SCKEDD’s Board selected four economic developers to nominate

Community College, Four Nominees

Gene George (for Pedro Leite who resigned BCCC), Title: Interim Dean, Career and Technical Education/Advanced Technology Center, Classification: Butler County Community College, Nomination: Executive nomination, substitution by executive nomination

Joe Clasen, Title: Director of Non-Destructive Education, Classification: Cowley County Community College, Nomination: Executive nomination

Steve Porter, Title: Vice President - Workforce Development and Outreach, Classification: Hutchinson County Community College, Nomination: Executive nomination

Ron Ragon, Title: Faculty, Classification: Wichita Area Technical College, Nomination: Executive nomination

At-Large, Four Nominees

Alan Badgely, Title: KSBDC Consultant, Classification: Kansas Small Business Development Center, Nomination: Executive nomination

Tyler Brown, Title: Chief Information Officer, Leslie Rudd Investment Company, Inc., Nomination: Executive nomination

Kathy Smith, Title: Kamen Aerospace, Human Resource Director, Classification: Private industry representation, Nomination: Keith Lawing, WA, CIEE Board nomination

Aaron Smith, Title: Dell Services Engineering Solutions, Classification: Private industry representation, Nomination: Rick Willardson, Dell, CIEE Board nomination
VII. CIEE Funding Update Reports

A. Energy Sector Partnership and Training Grant, $102K for eight industrial energy system analyst internships for four semesters – through December 2012.
   i. Spring 2012 has seven student interns
   ii. Summer 2012 anticipate four student interns

B. Jobs and Innovation Accelerator Challenge (JIAC)
   i. Report of funding status
      • Department of Commerce Economic Development Administration, received funding, submitted budget modification, March 24, 3012 ($849K)
      • Department of Labor Employment and Training, received funding ($1M)
      • Small Business Administration, received funding ($144K)

   ii. JIAC Advisory Board Nominations

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<th>EDA Innovation Accelerator</th>
<th>ETA Career Accelerator</th>
<th>SBA Enterprise Accelerator</th>
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<tr>
<td>Co-Lead</td>
<td>Zulma Toro-Ramos</td>
<td>Co-Lead</td>
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<td>Zulma Toro-Ramos</td>
<td>Co-Lead</td>
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<td>Econ Dev</td>
<td>Kerri Falletti</td>
<td>Econ Dev</td>
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<td>WSU CoE</td>
<td>Krishna Krishnan</td>
<td>WSU</td>
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<tr>
<td>Minority Chamber</td>
<td>MAMBDC candidate</td>
<td>Technical College</td>
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<tr>
<td>Chamber of Commerce</td>
<td>Phyllis Robertson</td>
<td>CC</td>
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<tr>
<td>WSB Entrepreneurship</td>
<td>Chris Broberg</td>
<td>K-12</td>
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<td>MAMTC</td>
<td>Elaine Hannah</td>
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<td>Student President for</td>
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<td>Engineering Council</td>
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Recommended Action A: Approve or modify nominations to the JIAC Advisory Board as needed.

iii. Industry Roundtable Events
   a. March 5, 2012 SBIR/STTR Industry Roundtable
      • Content for the second industry roundtable focused on SBIR/STTR funding opportunities.
      • 36 Attendees
      • Agenda on page 12 of agenda packet
      • Additional information on the Industry Roundtable can be found at the following web link.

   b. June 13, 2012, Lender’s Forum with CIEE Collaborative Partners: SBA, Network Kansas, KSBDC, Score, etc., WSU Marcus Welcome Center

   c. August 14, 2012, Business Matchmaker at the WSU Metropolitan Complex
      • The Wichita State University, the SBA Wichita District Office and event co-sponsors are anticipating 300 small businesses and approximately 100 buyers from government agencies and prime contractors. This event will provide a forum for buyers and sellers to meet for one-on-one meetings, matching buyer requirements with seller capabilities. Purchasing representatives from organizations like Boeing, Hawker Beechcraft, Spirit AeroSystems, McConnell Air
Force Base, the State of Kansas, the City of Wichita, Sedgwick County and Wichita Public Schools have indicated plans to attend. Breakout sessions in core areas integral for strong and growing businesses will also be offered at the conference. Topics such as financing, exporting, government contracting, SBA Business Development Programs, aerospace purchasing requirements, and innovation are planned.

- Requesting recommendations for a key note speaker. Criterion includes dynamic and engaging speaker with a balanced economic review, empowering conclusion, strong background in manufacturing, global/international knowledge

d. Tentative: September 13, 2012, Finance Options Business Development Training with self-certified small disadvantaged business to include HUB Zone and 8a business development funds will be held at the WSU Marcus Welcome Center

iv. JIAC EDA Competitive solicitation of proposals - previous awards
- Competitive Solicitations – preselected technologies
  o TSI/AvPro – canceled per February 20, 2012 phone call, failed to agree on terms of contract – scope of work
  o JR Custom Metal Products, strategic planning and metalizing technology development – partially executed contract emailed on March 26, 2012
  o Andrew Spear/Wichita Technology Corporation, business counseling – contract executed on April 4, 2012
- Competitive Solicitations – Announced January 10, 2012
  o Nitride Solutions, development of a high-volume, low-cost platform process to produce single-crystal nitride substrates – contract executed on March 27, 2012
  o Dr. Michael McCoy/Cessna, developing budget and staffing plan, coordinating with KBOR and industry partners regarding intellectual property
- Competitive Solicitations to be announced on April 11, 2012
  o Funding available for allocation
    ▪ Business proposals – 10 proposals received, six proposals were considered by Executive Committee, three are recommended for funding
    ▪ Faculty proposals – three proposals received and all three were evaluated by Executive Committee, one is recommended for funding
  o Technical Advisory Panel scored proposals on Wednesday, April 4, 2012, and Thursday, April 5, 2012
  o Executive Committee interviewed semi-finalist innovators on Friday, April 6, 2012
  o Executive Committee recommendations will be considered by CIEE Board of Directors as the final agenda item.

v. Funding available for second round of competitive business solicitation
- In January 2012 Board meeting there were $80K of unallocated funds from first competitive round + $68K budgeted for Year 2 funding = $148K to be awarded in second competitive round
- One of our preselected technologies (TSI) canceled the project ($134,916 on February 20, 2012)
- Budget modification and funding available for second round ($319,770 = $80K Y1 + $68K Y2 = $135K TSI + $10K salary + $27K indirect)

- **Recommend that second round competitive business proposal allocations not exceed $300K** as University indirect charges will vary according to the type of budget items that are incorporated in each proposal.

  o Unexpended funding allocated to second round of the competitive Technology Development and Business Counseling grants will be rolled over to the third competitive solicitation. Only proposals with six-month work plans will be evaluated.

  vi. **Funding available for second round of competitive faculty-business fellowships**

  o Faculty-Business Fellowship awards are on track with budget allocations of $20,000 for one solicitation each year of the EDA award. (Total of $40,000 and two faculty-business fellowships during two-year term of EDA grant).

C. **Kansas Engineering Excellent Program (KEEP) in collaboration with the Workforce Alliance of South Central Kansas (WA)**

  $5M U.S. Department of Labor Employment and Training Administration award that is active through November 2015 (USDOL)

  i. 42 of 100 student scholarships awarded: 6 or 10 PhDs, 16 of 30 MS, 14 of 60 BS

  ii. Competitive internships are available through the KEEP proceeds

  iii. CIEE will engage in sub-contract from WA for .5 FTE staff from grant proceeds to support the implementation of grant

D. **CIEE currently has two open positions.**

  Business and Industry Liaison and Administrative Assistant

  A summary of the position descriptions can be found at the following link.
  [http://webs.wichita.edu/?u=ENGINEERING&p=/jobpostings](http://webs.wichita.edu/?u=ENGINEERING&p=/jobpostings)

E. WA and WSU have received accolades for being one of fourteen best practice regions in a recent GAO report. WSU and WA were recognized as a top example of a successful collaboration and were set forward as a best practice to others across the nation for their WIRED project. On February 16, 2012, the Senate HELP Hearing on the GAO report made a number of references to the Kansas Composite WIRED project during the first 15 to 20 minutes of the hearing.

  [http://www.help.senate.gov/hearings/hearing/?id=5908d481-5056-9502-5dc8-e1456c5d8dab](http://www.help.senate.gov/hearings/hearing/?id=5908d481-5056-9502-5dc8-e1456c5d8dab)

**Recommended Action B: Receive reports and file.**
SBIR/STTR Grant Funding Workshop

8:30 a.m. Registration and networking coffee
9:00 a.m. Welcome, Zulma Toro-Ramos, Dean
Wichita State University (WSU) College of Engineering
Presentation, Suman Saripalli
Coffee break
Panel discussion with questions from participants
10:45 a.m. Adjourn
10:45 a.m. – 11:30 a.m. Opportunity to search for SBIR/STTR programs that may fit participant’s strategic vision

Panel Members
1. Suman Saripalli, Owner, KalScott Engineering, Inc.
2. Brian L. Clothier, CEO, TSI Technologies, LLC
3. Patricia (Trish) L. Brasted, President and CEO, Wichita Technology Corporation / Wichita Technology Ventures
4. Michael (Mike) McCoy, Visiting Assistant Professor, WSU College of Engineering
5. Becky Hundley, Projects & Training Manager / Intellectual Property, WSU Office of Research Administration
6. Fred Mclean, Independent Grant Writer, Past President Kansas Professional Grant Association, WSU Continuing Education Instructor

Primary Speaker
Suman Saripalli, from Lawrence, Kansas, has a strong track record in the SBIR program, having won 30 SBIR awards from the Department of Defense, NASA, the National Institutes of Health, National Science Foundation, Department of Energy, Department of Transportation and the Department of Education over the past fifteen years. Several of these projects went on to Phase II and Phase III as well, valued at several millions of dollars.

JOBS & INNOVATION ACCELERATOR CHALLENGE
VIII. Recommendation from Executive Committee for funding competitive proposals

The second Jobs and Innovation Accelerator competitive solicitations opened on February 1, 2012. Both the business and faculty proposals were available for download from the CIEE website on February 1, 2012 and web links to the proposals were provided for distribution to collaborative partners, CIEE businesses and partner colleges. Proposal, in pdf format, were submitted to innovation@wichita.edu on March 23, 2012.

Projects were evaluated by the CIEE Technical Advisory Panel (TAP) on April 4 and April 5 using the scoring rubric provided. The TAP has 16 members with four members from WSU, economic development, community colleges/technical college, and at-large members. Each proposal (randomly selected) was reviewed by two TAP members from each TAP division. Therefore, each proposal was evaluated by eight TAP members.\(^2\)

Top tier of proposals, as determined by TAP scores, advanced to the semi-finals round.

Project innovators that advance to the semi-final round made a 10-minute presentation on Friday afternoon, April 6, 2012 to the CIEE Executive Committee (EC) and technical advisors. The EC brings the following recommendation to the Board of Directors regarding project funding based on the quality of proposals, TAP scoring rubric outcomes, and innovator presentations.

- Technology Development and Business Counseling Grants (10 proposal applications were submitted, six semi-finalist interviewed and three proposals are recommended for funding)
- Competitive Faculty-Business Fellowship (three proposal applications were submitted, three semi-finalist interviewed and one proposal is recommended for funding)

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\(^2\) The NSF project evaluation handbook was used to benchmark the CIEE evaluation process.
Recommend Action A: Executive Committee recommends to the Board of Directors to fund Ramazan Asmatulu, Nanocomposite Spheres for Self-healing of Composites Wind Turbine Blades Faculty-Business Fellowship proposal in the amount of $20,000.00 with the stipulation that business counseling support is solicited, alternate market applications are investigated and pending availability of funds. (Lawing/Dugan)

Recommendation B: Executive Committee recommends to the Board of Directors to fund three competitive technology development and business counseling grants listed below in the total amount of $144,020.00 pending successful contract negotiations, legal review and availability of funds.

   a) Ross Jordan, Ocianna International, $49,975.00, Mooring and/or anchoring product for water based shallow and deep-water vessels.
   b) Vis Madhavan, Fairmount Technologies, $44,045.00, Parametric Study of Stretch Roll Forming Processes using Experiments and Finite Element Analysis.
   c) Joel Thompson, Mid-Continent Composites, $50,000.00, Master tooling for Model 206E ‘Escape’ Prototype Aircraft.

(Lawing/Fornaro-Dean)

Applicants whose proposals were not recommended by the EC will be notified by email on April 11, 2012. Applicants will be provided their proposals metrics scores and encouraged to visit CIEE staff for further feedback and debriefing. Applicants will be encouraged to resubmit for funding for the third proposal solicitation.
<table>
<thead>
<tr>
<th>Faculty</th>
<th>First Name</th>
<th>Last Name</th>
<th>Company / Agency</th>
<th>Proposal Title</th>
<th>Funding</th>
<th>Jobs Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>Ramazan</td>
<td>Asmatulu</td>
<td>EnerTech, Sunflower Wind/ NREL/ PSU</td>
<td>Nanocomposite Spheres for Self-healing of Composite Wind Turbine Blades</td>
<td>$20,000.00</td>
<td>25 Jobs/5 Years - 250 Jobs/10 Years</td>
</tr>
</tbody>
</table>

Cover Page

(WSU-CIEE, 2012 Competitive Faculty-Business Fellowship)

1. RA Number: WSU-CIEE
2. Technical Area: Composite, Nanotechnology and Energy
3. Organization submitting proposal: Mechanical Engineering
4. Type of organization: Research and Education
5. Proposal title: Nanocomposite Spheres for Self-Healing of Composite Wind Turbine Blades
6. Proposal date: 03/23/2012
7. Technical point of contact:
   a. Dr. Asmatulu, R., Mechanical Engineering, 1845 Fairmount, Box 133, Wichita, KS 67260-0133, phone: 316-978-6368, fax: 316-978-3236, ramazan.asmatulu@wichita.edu
8. Administrative point of contact:
   a. Dr. Koert, D., Mechanical Engineering, 1845 Fairmount, Wichita, KS 67260-0113, phone: 316-978-6364, fax: 316-978-3236, David.Koert@wichita.edu
9. Total proposed cost: $20,000 for 12 months
10. Number of previous submissions to RA: 1
11. Date of Tenure-track appointment position: 8/13/2006

Summary

Composite wind turbine blades are extensively subjected to cyclic loadings, which in turn cause micro and nanoscale cracks, and thus lead to fatigue and failure in a shorter service time. The concept of self-healing technology can be introduced into the composite blade manufacturing to increase the lifetime of the blades without any human involvement. The research goal of the project is to develop an effective methodology to prevent the crack formation and propagation in the composite blades using nanoscale inclusions (e.g., graphene and carbon nanotubes - CNTs) and self-healing technology. The research objectives are: to (i) disperse the nanoscale inclusions in the resin system, (ii) fabricate the self-healable microspheres, and (iii) incorporate the microspheres into fiber reinforced composites to determine their mechanical properties. This will also create collaborations with individuals outside of the university, build a foundation for sustainable research, and expand the applications to address closely related problems in aircraft and biomedical industries. The educational goal is to provide students with fundamental knowledge and an understanding of the technology. The educational objectives are to integrate this research to accomplish two important aims: (i) to train at least one underrepresented undergraduate student and one graduate student through hands-on experience with the proposed subject, and (ii) to promote interest in this technology to other undergraduate and graduate students in the College of Engineering (CoE) at Wichita State University (WSU). All of the objectives outlined in this proposal are closely linked to the CoE strategic research objectives “To be the Best Engineering Academic Programs in Kansas”.
<table>
<thead>
<tr>
<th>Business</th>
<th>First Name</th>
<th>Last Name</th>
<th>Company</th>
<th>Proposal Title</th>
<th>Funding</th>
<th>Jobs Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>Ross</td>
<td>Jordan</td>
<td>Ocianna International</td>
<td>Mooring and/or anchoring product for water based shallow and deep-water vessels</td>
<td>$49,975.00</td>
<td>25 Jobs/1st Year - 100 Jobs/3rd Year</td>
</tr>
</tbody>
</table>

CIEE Board of Directors Executive Committee Overview
April 6th, 2012
Ross Jordan
President, Ocianna International
Ross.Jordan@Ocianna.com
316-214-9708

Green Technologies/Energy Self-Sufficiency/Renewable Energy:
1) Off-shore Wind Generators
2) Wave Generators
3) Oil and Natural Gas Exploration
4) Coral Preservation

Economic Impact:
1) Jobs
   a. Year 1 – 4 Full Time/3 Student Interns = 7 jobs created
   b. Year 2 – 10 Full Time/5 Student Interns=15 jobs created
   c. Year 3 – 25 Full Time Direct Jobs/ 25 Indirect Jobs (excess capacity)=50 Jobs created in Kansas

2) Value of Capital/Leveraged Dollars
   a. $50,000 Grant Infusion
   b. $50,000 Owner Investment (1:1) - Immediate
   c. $50,000 Kansas Department of Commerce Match(1:1)
   d. $150,000 BOA/Equity Bank Credit Line Increase(1:1)
   e. $100,000 Network Kansas Loan Multiplier (2:1)

   $50,000 infusion generates $400,000 in funding; reducing high cost of Phase II Funding, increasing R&D budgets

3) Existing Collaborative Efforts:
   a. Kansas Department of Commerce, (Bob Fetke, Greg Call, Craig VanWey)
   b. US Commercial Service, (AJ Anderson)
   c. Congressman Pompeo’s Office, (James Richardson)
   d. Senator Moran’s Office, (Mike Zamarla)
   e. Governor Brownback’s Office, (Sue Schlapp)
   f. US Small Business Administration, (Wayne Bell)
   g. Kansas Small Business Development Center, (Alan Badgley, Marcia Stevens, Greg Panichello)
   h. Heartland PTAC, (Ross Draney)

4) Long-Term Collaboration with CIEE:
   a. Business Plan requires 1-3 year regenerating product innovation/diversification
   c. 34 validated vertical markets ranging from military, construction, ONG, space exploration
   d. Exotic materials necessary strength and weight constraints – leading edge materials required
Fairmount Technologies

Proprietary and Confidential

**Parametric Study of Stretch Roll Forming Processes using Experiments and Finite Element Analysis**

Fairmount Technologies (dba CNC Form), [www.fairmounttech.com](http://www.fairmounttech.com)

Fairmount Technologies proposes to work with faculty, staff and student interns from WSU, to understand the reasons for the dishing or blow-in observed on the flange of parts formed by stretch roll forming (SRF).

**BACKGROUND**

Fairmount technologies has been in business since 2008, working to commercialize SRF, a novel CNC metal forming process for stretch forming extrusions without part specific dies. Once a defect called as “dishing” of the parts is eliminated, SRF is expected to revolutionize the production of extrusions.

**PROPOSED APPROACH**

A combined experimental and analytical approach will be used to discriminate between two hypotheses posited to explain this dishing, and implement and evaluate the effectiveness of various solutions. The finite element simulations will be carried out at WSU. Experiments will be carried out at Fairmount Tech and at WSU.

**COLLABORATION WITH WSU**

- Fairmount Tech is led by WSU faculty member; project to be executed by GRA and student intern
- Work with HIPECC, Cessna Mfg. Processes Lab and NIAR

**PERFORMANCE OUTCOMES**

- Would serve as cost matching for SBIR phase II proposal
- $14,682 will be invested by Fairmount Tech towards supporting this project
- If SRF is successfully commercialized FT will have ten to fifteen full time employees
Project Title: Master Tooling for Model 206E ‘Escape’ Prototype Aircraft

This project will enable Mid-Continent Composites (MCC) to accelerate the fabrication of the full scale prototype of a unique Light Sport Aircraft (LSA). The project will occur after the successful flight tests of a 1/3 scale, radio controlled, fully instrumented flight test vehicle. The prototype aircraft will finalize the technical basis for the production aircraft. The all composite Model 206E ‘Escape’ will require extensive composite tooling capable of using NIAR qualified 205F cure epoxy resin prepreg systems with various fiber reinforcements. The prototype master tooling is estimated to cost ~$60K. A $50K CIEE grant will enable MCC to move out immediately, following the 1/3 scale flight tests and data analysis, on the prototype fabrication with a goal of having the prototype at EAA Oshkosh 2013.