FOR INFORMATION ONLY
(No formal action is requested at this time)
1. Chair Remarks
   Lowry Caudill, UNC Board of Trustees

2. Funding Startups
   - **Grants and Awards**
     Andy Kant, Assistant Director of Carolina KickStart, & Program Manager for 4D
     Randy Myer, Professor of the Practice of Strategy and Entrepreneurship, KFBS & Chairman of the Board of Directors for NC IDEA
     Ted Zoller, T.W. Lewis Clinical Associate Professor of Strategy and Entrepreneurship & Director of the Center for Entrepreneurial Studies, KFBS
   - **Small Business Innovation Research & Small Business Technology Transfer Programs**
     Tim Martin, Assistant Director of Carolina KickStart
   - **Carolina Research Venture Fund**
     Sallie Shuping-Russell, Chair, & former UNC Trustee
   - **Proposed Angel Network**
     Don Rose, Director of Carolina KickStart
     Bryan McGann, Entrepreneur-in-Residence, UNC-Chapel Hill

3. TEDxUNC 2016 – “Bodies: Being Human”
   Teerth Brahmbhatt, UNC Class of 2016
   Ashita Gona, UNC Class of 2016
   Olivia Nicolaus, UNC Class of 2016

4. Discussion
   Lowry Caudill, UNC Board of Trustees

*Some of the business to be conducted is authorized by the N.C. Open Meetings Law to be conducted in closed session.*
4D Strategic Initiative
The central purpose of the CTSA Strategic Initiatives is to harness the existing strengths, energy and expertise of UNC, RTI and NC A&T and transform them into efficient and effective platforms to streamline investigative strategies in translational medicine.
94% of Drugs Fail for Technical Reasons

- Lack of Efficacy: 31%
- Toxicity: 22%
- Poor PK Profile: 41%
- Market Reasons: 6%
Extramural Funding
- NIH
- NSF
- DoD
- Industry
- Foundations

Discovery and Exploratory research

DICER
DNA damage repair

~$800M (2014)
Federal Funding

Potential cancer target?
Mechanism unclear

Deshmukh
Intramural Funding
- 4D Strategic Initiative / RTI International
- OCED Technology Development Grants
- Eshelman Institute for Innovation
- Kenan Institute of Private Enterprise
- Gillings Innovation Labs

Development and Validation

~$800M (2014) Federal Funding
~$1.5M (2014) Intramural Funding

Genetically modified cells from cancer patient

Hingtgen

Neural Stem Cells
Hydrogel Matrix
Chemotherapy Prodrug
Commercial
- OCED / Carolina KickStart
- North Carolina Biotechnology Center
- SBIR/STTR
- Angel / Venture Capital

Development, Validation and Optimization

Parise

Develop inhibitors for cancer treatment

CIB1

Carolina KickStart Award
4D Pilot Award
STTR Award
NC Idea Foundation

- Started in 1990s
- 50m investment fund
- Must invest 5% annually
- Mission – grow the entrepreneurial ecosystem in NC

NC Idea Seed Grant program

- Started in 2006
- 10-12 grants per year of $50k each
- Non-dilutive but with milestones
- Open to wide range of for profit startups
nearly $4 million awarded in grants since 2006

104
NCIDEA™
GRANT RECIPIENTS

over $114 million
raised in equity funding

over $33 million
raised in non-equity funding

Over $100 million
revenue generated

over 400
jobs created

76% *
grant recipients still in business

*Estimated Economic Impact: over 2,000 NC jobs created
Company Impact and Growth

Mature
- >$5M equity and/or >$50M revenue

7 Companies (2 Ceased Operations)

Growth
- $2M-$5M equity and/or profitability and/or $7M-$50M revenue

9 Companies (0 Ceased Operations)

Early
- $200K-$2M equity and/or $1M-$7M revenue

39 Companies (2 Ceased Operations)

Seed
- $50K-$200K equity or grants and/or < $1M revenue; MVP

49 Companies (23 Ceased Operations)
Pre-Seed/Seed: “Starting Point” for Majority of Grant Winners

Spring 2009 Recipient $10.8M Equity Funding
* Acquired *
Spring 2008 Recipient $5.1M Equity Funding
Fall 2008 Recipient $26M Equity Funding
Spring 2008 Recipient $16.1M Equity Funding

Fall 2012 Recipient * Acquired *
Fall 2013 Recipient $3.5M Equity Funding
Greensboro, NC
Spring 2011 Recipient $2.5M Equity Funding

Fall 2014 Recipient $1.4M Equity Funding
Spring 2013 Recipient $740 Equity Funding
Fall 2014 Recipient $1.1M Equity Funding

Spring 2013 Recipient $740 Equity Funding

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Stage at Time of Grant
(Applicant Data: Spring 2011-Fall 2014)
16 UNC Based Winners

- impulsonic
- TOM & JENNY'S
- Physcient
- SizeMeUp
- NextRay
- Imvere LLC
- Rheomics
- RemedEase
- ArgyleSocial
- NOVOCOR Medical Systems
- KeonHealth
- 80Pct Solutions

Spring 2008 Recipient
$5.1M Equity Funding

Spring 2011 Recipient
$2.5M Equity Funding
1. NC Idea Seed Grant program

2. NC Idea Ecosystem Partner Grant program
   - New program this spring
   - $100k-$250k per grant (1-3 years)
   - Open to University programs (not individuals)
   - Like Kaufman Grant programs
   - Likely needs to be a game changing idea
1. NC Idea Seed Grant program
2. NC Idea Ecosystem Partner Grant program
3. KFBS Donor Grant program
   • $5m gift to KFBS (not committed yet)
   • Invested in UNC Management Fund
   • $50k grants per year (5 recipients)
   • Open to for profit startups with UNC connections (including alumni)
   • Vetted by NC Idea screening application and process
   • Non-dilutive with hope of future gift
Carolina Challenge: Building UNC’s Entrepreneurial Culture
Kenan-Flagler Business School
Board of Trustees > January 27, 2016
Commercialization & Economic Development Committee

Ted Zoller, Director, Center for Entrepreneurial Studies
T.W. Lewis Clinical Associate Professor of Strategy and Entrepreneurship
Mission: Center for Entrepreneurial Studies

To build the leading US Entrepreneurship Curriculum and Program Preparing Students for an Entrepreneurial Mindset in All Professional Settings and All Phases of their Professional Development
Strategic Vision

• Endowed John Stedman, 1947 UNC grad
• Undergrad student management team of 13 cross campus students
• KFBS Jim Kitchen/Kris Hergert advise along with John and David Stedman from Charlotte
• 2015 was the 12th year of Carolina Challenge
• UNC campus wide series of startup events

Pitch Party
Nov 19, 2015
Blue Zone

Elevator Pitch
Rounds
TBD 2016

Challenge
Final
April 7, 2016
Pitch Party

• UNC startup competition at the Blue Zone
• Open to undergrads and graduate students
• 325+ students from j-school, comp-sci., e-minor, public health, campus y, college of a&s, b-school
• $5,000+ in prizes to top 10 teams

2013 ROI: 47 start up teams, 29 judges
2014 ROI: 102 startup teams, 48 judges
2015 ROI: 105 startup teams, 82 judges
• UNC startup coaching & elevator pitch events prior to the competition finals in spring
• 100+ students from across campus, many of which competed in the pitch party
• $45,000+ in prizes to top 21 teams in 3 tracks: non-profit, profit, & grad student

2014 ROI: 16 teams, 5 judges, 60 guests
2015 ROI: 21 teams, 8 judges, 85 guests
UNC Startup Success
TechFlash

Done deal! NetSuite closes on $200M buy of Durham's Bronto

Jun 9, 2015, 12:00pm EDT  Updated Jun 9, 2015, 2:00pm EDT

Windsor Circle closes $5.25M in Series B
UNC Impact from SBIR/STTR Funding

Tim Martin, Assistant Director
Carolina KickStart
What are the SBIR and STTR Programs?

• Designed to encourage startups to complete R&D that will lead to commercialization
• Non-dilutive funding during the valley of death
• Proving ground for new technologies
• SBIR/STTR applications are a core foundation to UNC startup companies
UNC SBIR/STTR Cumulative Funding

- 2005: $60,000,000
- 2006: $60,000,000
- 2007: $60,000,000
- 2008: $60,000,000
- 2009: $60,000,000
- 2010: $60,000,000
- 2011: $60,000,000
- 2012: $60,000,000
- 2013: $60,000,000
- 2014: $60,000,000
- 2015: $67,000,000
### UNC Emerging Companies with SBIR/STTR Funding

<table>
<thead>
<tr>
<th>Company</th>
<th>Funding Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphomics, LLC (acquired)</td>
<td>$8.62 Million</td>
</tr>
<tr>
<td><strong>novantherapeutics</strong></td>
<td></td>
</tr>
<tr>
<td>INRay® Systems</td>
<td>$6.33 Million</td>
</tr>
<tr>
<td>Average SBIR/STTR Award Per Companies (37 Startups since 2005)</td>
<td>$1.81 Million</td>
</tr>
</tbody>
</table>
Why do we need a venture fund?
## Market Opportunities – Carolina Responds

### Healthcare Inefficiency Creates Market Opportunities

** personalised medicine**

- HealthSpan Dx, GeneCentric Diagnostics, Nutrigene Sciences

**Miniaturization of devices**

- 908 Devices, BioFluidica, SonoVol, Rheomics

**Telemedicine**

- Advanced Telecare

**Optimizing patient data workflows**

- Keona Health

**Point-of-care diagnostics**

- Cortical Metrics, BioFluidica, Rheomics

**Improved patient experience**

- Bivarus, Augment Medical
Emerging Technologies – Carolina Opportunities

Immunotherapies and artificial intelligence are big industries

Harnessing The Immune System To Fight Cancer: 'Now We Can Offer Hope'
Dec 4, 2015

Forbes

Artificial Intelligence Is Almost Ready for Business
March 19, 2015

Harvard Business Review

Oppunities in emerging technologies

<table>
<thead>
<tr>
<th>Healthcare Related</th>
<th>IT Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immuno-oncology</td>
<td>Cybersecurity, especially offensive</td>
</tr>
<tr>
<td>Gene splitting</td>
<td>FinTech (Financial Technology)</td>
</tr>
<tr>
<td>Anti-infectives</td>
<td>Sharing Economy 2.0</td>
</tr>
<tr>
<td>Ocular diseases</td>
<td>Virtual Reality for Consumers</td>
</tr>
<tr>
<td>Point of care diagnostics</td>
<td>Artificial Intelligence</td>
</tr>
<tr>
<td>Healthcare IT</td>
<td>Custom wearables</td>
</tr>
</tbody>
</table>
It’s taken some time ...

- **2010**: UNC Innovation Roadmap
- **2011-2012**: Working Group appointed and CRV plan developed
- **2013**: BOT approves CRV Fund
- **2014**: Final legal structure est. & launched
- **2015**: HCS commits $5MM
- **2016**: First investment made
- **2010**: Trustees direct Admin to develop plan for Univ. research assets
- **2013**: Jun. Chancellors Thorp/Folt authorize $2MM funding
- **2014**: 2014 Univ. raises commitment to $5MM
- **Dec 2015**: Investment manager selected
- **Dec 2015**: HCS commits $5MM

**Timeline:**
- 2010: UNC Innovation Roadmap
- 2011: Working Group appointed and CRV plan developed
- 2011-2012: Working Group appointed and CRV plan developed
- 2012: BOT approves CRV Fund
- 2013: Final legal structure est. & launched
- 2014: HCS commits $5MM
- 2015: First investment made
- 2015: Investment manager selected

**Key Events:**
- Sep 2010: Trustees direct Admin to develop plan for Univ. research assets
- Jun 2013: Chancellors Thorp/Folt authorize $2MM funding
- 2014: Univ. raises commitment to $5MM
- Dec 2015: Investment manager selected
Carolina Research Ventures, LLC

UNC - CH

Board of Directors

Carolina Research Ventures (CRV), LLC

CRV Investment Fund (Early stage focus)

Potential Future Fund (ex. Later stage focus)

Potential Future Fund (ex. Alumni Fund)
Board – Directors and Observers

Sallie Shuping-Russell, Chair
Mng Dir, BlackRock Private Equity Ptns
Former UNC Trustee & UNC Healthcare Director

Lowry Caudill
Co-Founder, Magellan Labs
UNC Trustee, Former Chair

Haywood Cochrane
Former CFO, LabCorp
UNC Trustee, Vice Chair

Trey Crabb
Mng Dir, Healthcare M&A, Ziegler & Co
UNC Healthcare Director

Matt Fajack
Vice Chan Finance & Admin, UNC-CH
UNC Healthcare Director

Jon King
CEO UNC Management Company
Chief Investment Officer, UNC Inv Fund

Steve Lerner
Entrepreneur & Mng Ptn, Blue Hill Group
Former UNC Trustee

Terry Magnuson
Vice Dean of Medicine for Research
Chair & Prof Genetics;
Prof, Biomedical Engineering

Randy Myer
Prof of Entrepreneurship, KFBS
Chair, NC IDEA
Former Entrepreneur

Judith Cone, Observer
Spec. Asst to Chancellor for Innov & Entrep
VC Commercialization & Econ Dev
Manager Selection Process

- 28 Potential
- 10 Invited to Submit
- 5 Submitted
- 1 Selected
Manager Selected

- Hatteras Venture Partners
  - Established 2000
  - Healthcare Focus
  - Total Investments: 53 ($139MM)
  - Investments with UNC Affiliation: 8 ($31MM)

- IT/Material Science Focus Consultant
Next Steps – Blast Off

- Early stage focus
- 7 – 12 companies for this tranche
- Initial Investment per company: $50,000 - $250,000
- Max investment in single company: $2MM (Including Follow-On $)
- First Company: Cancer therapeutic drug company from Lineberger Cancer Center
Carolina Angel Network Overview

- **Alumni**
- **Parents**
- **Friends**

**CAN Members**

- $\quad$

**UNC-Affiliated Early-Stage Companies**

- **Due Diligence**
- **Valuation**
- **Deal Structure**

**UNC-CH**

- Carolina Angel Network Operations
  - **Director**
  - **Steering Committee**
  - **External Advisory Board**
  - **Student Due Diligence Teams**
Benefits of the Carolina Angel Network

• Establishes new affinity group for Carolina
• Provides educational opportunity for students
• Broadens the entrepreneurial ecosystem
Campus Involvement
By the Numbers

7,462  Youtube views
4,498  Facebook likes
4,478  Email listserv subscribers
2,971  Livestream viewers (2015)
1,100  Conference attendees (2015)
  43    TEDxUNC committee members
  36    Minutes for tickets to sell out (2015)
  25    Countries watched livestream (2015)
TEDxUNC 2016
Bodies: Being Human

February 27, 2016 in Memorial Hall

- 16 Internal and external speakers and performers
- 2 smaller Salon conferences throughout year
“Bodies: Being Human”

At TEDxUNC 2016 we strive to explore the human body from multiple perspectives.

- What inputs can make our body thrive or struggle?
- How can we use our body as a tool?
- What challenges and questions relate to the human body?
- What advances will we make in the near and far future that will allow us to expand our capacity as a species?

This topic includes: biology, art, athletics, engineering, medicine, mental health, technology, social justice
2016 Speaker Highlights

Jeff Powell

Jeff Powell is a recent graduate of the Biomedical Engineering program at UNC. While in school, Jeff started The Helping Hand Project, a volunteer group which makes affordable prosthetic hands that are donated to children with limb differences. Jeff currently works at Transenterix in RTP, advancing robotic laparoscopic surgery.

Amy Black

Amy Black is an award winning tattoo artist based in Richmond, Virginia and is the founder of The Pink Ink Fund, a non-profit organization that seeks to aid people needing assistance with their post mastectomy tattoo needs as part of their breast reconstruction due to breast cancer.
Omar H. Ali is a historian of the African Diaspora who is of East Indian and Peruvian descent. He is Interim Dean of Lloyd International Honors College at The University of North Carolina at Greensboro. A graduate of the London School of Economics, he received his Ph.D. in History from Columbia University. His latest book, Malik Ambar: Power and Slavery across the Indian Ocean (Oxford University Press, 2016) explores 'race' as a function of power. He was recently rewarded the 2016 Carnegie Foundation North Carolina Professor of the Year award.

Hans Florine is a speedclimber, professional speaker, author and thought leader in speed and efficiency. Hans has repeatedly set and broken one of the most coveted speed records in the world: The Nose of El Capitan, a 2,900-foot monolith in Yosemite Valley. In 2012, Hans, alongside climbing partner Alex Honnold, took the record again in 2 hours and 23 minutes, lowering the previous record by a full 13 minutes.
The Future…

- Scale attendance to 3,000 people, move to a larger venue
- Host more Salon events throughout the year to have formative conversations
- Continually source more faculty and student speakers
Thank you!
Appendix

I. 2013 Speakers
II. 2014 Speakers
III. 2015 Speakers

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2013 Speakers

- Abigail Washburn: American Global South
- Alexander Julian: 30,000 Colors, 35 Years of Design
- Allen Mask: Rebel Beats
- Andrea Reusing:Resetting the Table
- Carolina Chocolate Drops: Sankofa, Reclaiming History
- Corey Ford: Intentional Serendipity
- Harrison Chicas: Living While Dying
- Holden Thorp: Global Health Innovations
- Gamelan Nyai Saraswati: Javanese Music
- Indi Cowie: INDividual Soccer Freestyle
- Jane Thrailkill: Tripping, Delirium, and other Mind Expanding Experiences
- Kevin Guskiewicz: Making Sports Safer Through Innovative Science
- Sajan George: The Future of Education
- Stirling Little: Gender in Video Game Culture
- Theaster Gates: Creating Heat, Art as Catalyst
2014 Speakers

- Magatte Wade: The Four Stages of Bringing an Idea to Life
- Ajit George: From Untouchable to Unstoppable
- Safiyah Ismail: Bringing Language to Life
- Sujata Bhatia: Innovate by Nature
- Debra Barksdale: Rising from the Mud
- Amro Albanna: Gaining Altitude Together
- Yazmany Arboleda: 10,000 reasons to believe in the power of art in public space
- Clockwork Kids: I'm Not Alone
- Bethania Bacigalupi, christine soykal, Josh Young: Acroyoga
- John Miller: No Bees, No Food
- Charles Allen: Security and Freedom in an International World
- Zeynep Tufekci: In Defense of Going Deep in a Viral World

- Jerry Linenger: Changing Perspective Off the Planet
- Omid Safi: Prophet, Not Icon
- Bobby Mook: FOMO, the Fear of Missing Out
- John J. Woods: What the World Needs now is...GSD
- Terry Rhodes: Amore
- Lee Weisert & Jonathan Kirk: Subaqueous Sound Art
- Mark Katz & Carolina Beat Academy: Taking Music Education to the Next Level
2015 Speakers

- Lala Main: Lyrical Performance
- Venroy July: Assemble to Gain Perspective
- Alyse Schacter: The Stigma of Mental Illness
- Ellis Dyson and the shambles: Musical Performance
- Chase Lewis: Inventing 101
- The NightShift: Jazz Fuzion Musical Performance
- Khalil Fuller: Cool As The Other Side of The Pillow
- Jonathan Hebert: Improvise In your Daily Pursuits
- Todd Zakrajsek: Improve Learning by Thinking About Learning
- Karsten Coates: That Thou Art
- Naimul Huq: The 12 Secrets of Marketing and You Won’t Believe What Happens Next
- Dalton Conley: Stalkers, twins, and the case of missing heritability
- Amber Koonce: The Beauty Gap
- Kewulay Jumara: A Foresight Storytelling Experience
- Jaspal Sandhu: Design Like Jimmy V
- Kathleen Galagher: The Healthy Child: Assembly Required