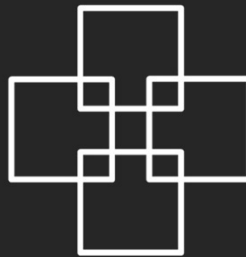




TECHNOLOGY
COLLABORATION
CENTER
OF HOUSTON



Bob Prochnow
Executive Director
January 29, 2016

Innovation

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- Merriam-Webster:
 - Simple Definition:
 - A new idea, device or method
 - The act or process of introducing new ideas, devices or methods
 - Full Definition
 - The introduction of something new
 - A new idea, method, or device (novelty)

Innovation and the TCC

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- TCC was initially intended to help JSC find partners
- Based on external feedback, TCC expanded to help any organization
- Vision for the TCC:
 - Innovate by bringing together broad & diverse organizations to pool resources
 - Different perspectives on common technologies and problems
 - Shift from develop-then license model to joint technology development
 - Resulting solutions can be shared - across sectors and markets
 - TCC to be a neutral place where organizations can explore partnerships & solutions

Mission

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Solving difficult technology problems by encouraging innovation and formation of technology development partnerships, utilizing diverse expertise from industry, academic and government organizations, across technology sectors

Value Propositions

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- Scouting & qualifying potential solutions and partners with common or synergistic technology needs
- Building strong partnerships to solve difficult problems and bring solutions to market
- Utilizing the capabilities of the energy, life science and space communities in the Greater Houston region, with organizations having a track record of overcoming complex technology challenges
- Bridging across industry, academic and government, across all technology sectors
- Providing access to multidisciplinary resources and the benefits of sharing solutions across multiple markets & sectors
- Encouraging innovation with an “IP Free” zone where organizations can explore potential solutions and partnerships
- Independent non-profit, focused on facilitating innovation & collaboration, assisting any organization without conflicts of interest
- Member-driven organization, providing value to members and the community

How is the TCC unique?

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- Match maker and facilitator
 - Helping other organizations achieve their goals, through new partnerships
- Assists in forming the partnerships, but will not develop the technology
 - Avoiding conflicts of interest with members and other organizations
- Not focused on specific technologies, industries or regions
 - Assists any organization looking for new partnerships to solve technology problems
 - Encourage innovation across broad and diverse community
- Independent member-driven 501(c)(3) non-profit
 - Board of Directors and Advisory Council composed of community members

History

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- NASA Johnson Space Center held meetings about increasing collaboration and finding solutions to space exploration technology challenges
- Other organizations also interested in more effectively finding new collaboration partners
- 2014: Steering Committee planned launch and strategy for the TCC
- 2015:
 - TCC formed and launched events and Collaboration Concierge Service programs
 - Space Act Agreement executed with NASA JSC, providing office space & support

Founding Supporting Organizations

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Launched with the support of organizations
representing Space, Energy and Medicine,
across industry, academia and government:

Bay Area Houston Economic Partnership - Baker Hughes
Battelle - BayTech - Chevron
Houston Technology Center - Jacobs - NASA Johnson Space Center
Rice University- Shell - Texas Medical Center
University of Houston - Wyle

2016 Programs

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- Collaboration Concierge Service
 - “Match maker” identifying new collaboration partners
- Events
 - Bringing potential partners together for events on a specific technology area
 - Presentations on difficult unmet technology challenges and new innovations
 - Events open to any organization - for attendance and presentations
 - TCC may host events or may support other organizations' events

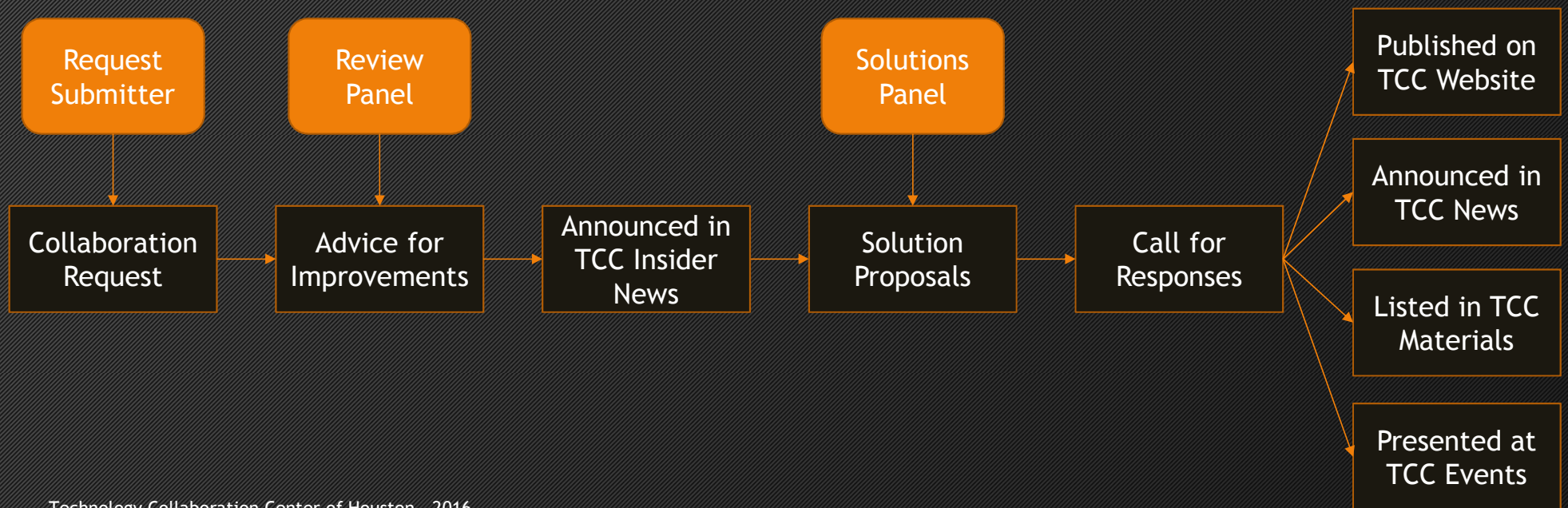
Collaboration Concierge Service

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- Helping find potential partners and establish collaborations, solving the technical challenges and bringing the solutions to market
- Any organization can submit Collaboration Requests or Responses
- Review Panel
 - Experts from TCC membership, reviewing each submitted Request and Response
- Solutions Panel
 - Experts on specific Request technology
 - Provides recommendations for potential solutions and partnerships
- TCC will provide assistance in forming a partnership from the submitted responses
- Fast Launch program planned to accelerate formation of new project teams, leveraging TCC Member project template agreements

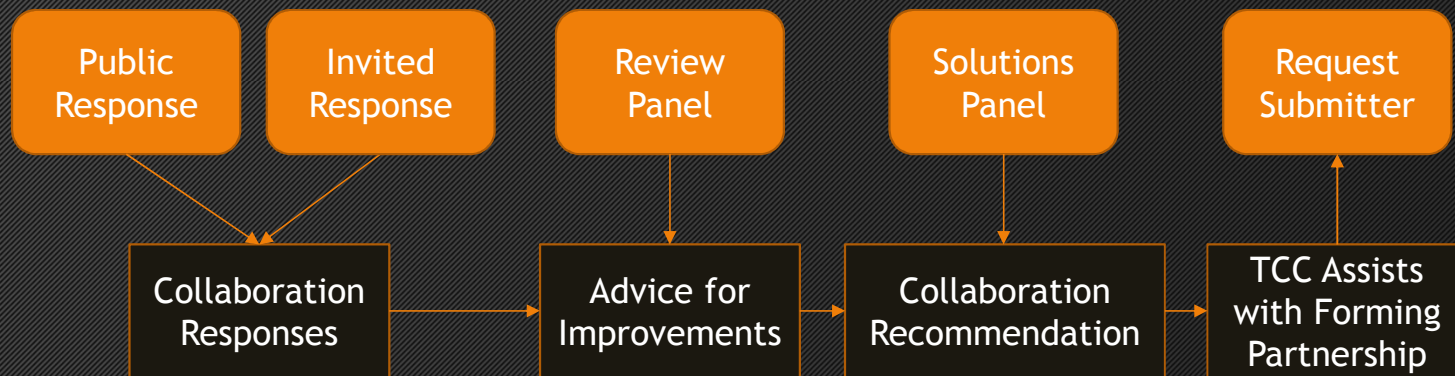
Collaboration Concierge Service Request Process

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Collaboration Concierge Service Response Process

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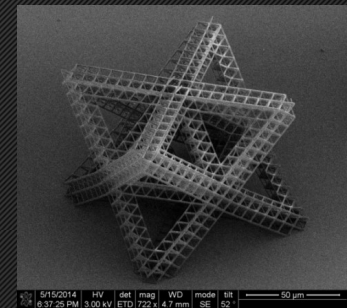


Collaboration Concierge Service

Open Requests - NASA Johnson Space Center

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- Innovative air drying via lightweight structure coating
 - Surface coating materials with dehumidifying capabilities for various lightweight structures.
- Order of magnitude improvement needed in amount of surface area for given thermal mass.



- Lightweight cooling garment
 - Minimizing mass, volume and consumable usage for astronaut space suits. Current technology has large mass, power and volume penalties for liquid cooling and venting garment.

Technology Collaboration Center of Houston - 2016

Collaboration Concierge Service

Open Requests - NASA Johnson Space Center

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- Low-water clothing sanitation
 - Need to wash clothing using little or no water for long duration missions. Current method of discarding clothing after use on International Space Station (ISS) won't be an option for deep space missions.



Technology Collaboration Center of Houston - 2016

- Radiation shielding garment
 - Lightweight, unobtrusive mobility, radiation shielding materials. Current materials are very heavy and provide limited protection.



Collaboration Concierge Service

Open Requests - NASA Johnson Space Center

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- Water motion emulation
 - Develop technology to produce motion in an Orion space capsule vehicle trainer at JSC's Neutral Buoyancy Lab (NBL), providing training in a variety of scenarios in a controlled environment



Events

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- Successor to 2014 JSC Connect series
 - Organized by JSC, HTC and Texas Emerging Technology Fund (TETF)
- Two TCC events held in 2015 on air quality & knowledge management
- Focus on specific technology area, with events held by TCC or partners
 - Possible 2016 topic areas: Wearable technologies, robotics, remote sensing, imaging devices & software, telemedicine, precision medicine & genomics, radiation protection, batteries, RFID, new energy challenges
- Presentations on latest innovations and unsolved challenges
 - Presentations by experts from TCC Members and outside community
- Opportunities to discuss technology area with other organizations
 - And explore potential partnerships
- Attendance and presentations open to all organizations

Events & Collaboration Concierge Service

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- For 2016, tighter integration between events and collaboration program
- For each TCC event, there will be a call for Collaboration Requests
- Each Request will be reviewed by the Review and Solutions Panels
- Organizations with potential solutions encouraged to attend
- Presentations on each open request for the technology area
- Organizations with relevant technologies & capabilities can also present
- Event will be an opportunity to explore potential solutions & partnerships

Prior Events

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- 2014:
 - JSC Connect events on Water Quality, Robotics, Telemedicine, RFID and Batteries
- 2015:
 - March 26 - Air Quality Technologies - hosted & sponsored by the HTC
 - June 9 - Knowledge Management Technologies - hosted by NASA JSC, sponsored by SGT
 - August 27 - Executive Director spoke at Federal Lab Consortium regional meeting
 - November 18 - Executive Director speaking at SpaceCom 2015 Conference
 - December 8 - 1st TCC Advisory Council Meeting with 29 organizations participating

2016 Event Planning

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- January 29 - Regional AIAA Innovation Workshop at the JSC
- February 4 - Houston Technology Center Tech Connect
- April 26 - Wearable Technologies - hosted by NASA JSC
- June - TCC Event - topic TBA
- Q3 - TCC Event - topic TBA
- H2 2016 - one or two joint events with NHHPC (NASA Human Health & Performance Center)
- November - SpaceCom 2016

Future Directions

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- Adding collaboration “Fast Launch” program
- Forming an Innovation Center to encourage innovative solutions
- Providing educational programs on innovation & collaboration
- Assisting startups and entrepreneurs in commercializing technology developed through TCC partnerships
- Planning on new programs will begin later this year

For More Information

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