

NSF IUCRC Center to Stream Healthcare In Place (C2SHIP) Annual Meeting

Full Conference Recording:

Part 1

<https://arizona.box.com/s/z5qu3meuun0pemoh52khtfit3o1pcnai>

Part 2

<https://arizona.box.com/s/td35u2ukgwiewowp88k5n81z3jocprpik>

Voting Links

AirTable links on <https://c2ship.org>

IAB member links:

Projects

<https://airtable.com/appvtZHEVA93z7aQ7/shrYIDntAVsiWFTMh/tblcjs19CoiQixmFT>

Vote Table for New Projects:

<https://airtable.com/appvtZHEVA93z7aQ7/shrtjmKDauKqy44ME>

Vote Table for Continue Project

<https://airtable.com/appvtZHEVA93z7aQ7/shrHo1p7nGSj8vkgU>

New Projects' Links:

Y03-USCFIU-047 Development of a Star Trek Tricorder for Wound Healing and Limb Preservation

Mentor: Medline/Valsem, **Presenter** Anu Godavarty, **PI** Anu Godavarty, David Armstrong

<https://arizona.box.com/s/73t4twq3h2wut6wodvuf84frs4w5r987>

Y03-UA/FL/BCM-048: Can you prevent onset of pressure ulcers using hydrogel bandages - feasibility study

Mentor: Medline **PI:** Anu Godavarty (FIU), Philipp Gutruf (UA), Bijan Najafi (BCM)

Presenter: Philipp Gutruf, Anu Godavarty, and Bijan Najafi

<https://arizona.box.com/s/psjmtzl6mawgjn34uny1nsdx7nwuf0x3>

Y03-MU-049 Secure framework for cloud-based remote patient monitoring and in-place sensor-based care, Mentor: BodiGuide; **PI** Prasad Calyam; **Presenter:** Mauro Lemus

<https://arizona.box.com/s/i2kdmkptutcsk9hvk8e0e0h7v8cps88i>

<https://arizona.box.com/s/3gg6lsn5m9su9s8mc5exlromhc6xftlb>

Y03-BCM-050 Project Title: Tele-exergaming to increase lower extremity blood flow and skin oxygenation in CLTI patients undergoing revascularization

Mentors: Kent Imaging/Medline; **PIs:** Drs Joseph Mills/Jayer Chung/Bijan Najafi

Presenter: Alejandro Zulbaran

<https://arizona.box.com/s/gzt71ztiaoc6tqqot22p9tz9zv4rf0ij>

Y03-BCM-051: Remote assessment of activity of daily living (ADL) using wearable sensors and standardized questionnaires in healthy adults and adolescents (poster) **(New Project)**

Mentor: BioSensics, **PI:** Bijan Najafi, **Presenter:** Miguel Bargas Ochoa

<https://arizona.box.com/s/jck39e6nr13l3hyz1997sy6urn2pmljm>

Y03-UND-052 Project Title: Integrated Portable Catheter Associated Urinary Tract Infection (CAUTI) monitoring and disinfection device

Mentor: Presenter Abdolrahim Zandi, **PI** Kouhyar Tavakolian **(New Project)**

<https://arizona.box.com/s/56r6g1xzb17ec4qxo16i73ahpl5jikgc>

Continue Projects' links:

Y02-MU-P004: Multimodal Sensing Integrated with Mobility Aids for Monitoring Dehydration in Older Adults

Mentor: Vadum, **PI:** Zheng Yan, **Presenter:** Zehua Chen, (continue)

<https://arizona.box.com/s/mj9xuqb0u9xdngj1p2n76o5h0k5dhvpt>

Y01-CAL-P006 THERMAP -- Polymer-based temperature mapping devices

Mentor: Valsem **PI** Chiara Daraio, **Presenter:** Nicole Higdon (continue)

<https://arizona.box.com/s/wl0y8vi4rggutfgsajhwlyhnt029bfl1>

Y01-BCM-P008: Transcutaneous Electrical Nerve Stimulation For Lower Extremity In Patients With Post Acute Covid-19 Syndrome: PACS (podium presentation)

Mentor: NeuroMetrix, **PI:** Bijan Najafi, **Presenter:** Miguel Bargas Ochoa (continue)

<https://arizona.box.com/s/i9zbhdbsxw4i2u227tnfiucybydbjjw>

Y01-BCM-026: Integrating a Personal Virtual Assistant in post-operative cancer care (Podium Presentation)

Mentor: Smartek21, **PI:** Bijan Najafi, **Presenter:** Miguel Bargas Ochoa (continue)

<https://arizona.box.com/s/q9hcfyslq52fh7kacenk0fl3x1356aci>

Y01-BCM-018: Using wearables to remotely track and screen risk of falling in older adults (poster) (continue project)

Mentor: BestBuy, **PI:** Bijan Najafi & Shu-Fen Wung, **Presenter:** Abderrahman Ouattas

<https://arizona.box.com/s/kcd1xfeunl0is7d1utmbw5zjt3tos9jl>

Faculty and Student link

<https://airtable.com/appvtZHEVA93z7aQ7/shrSkekvdwaMAV1UM/tblcjs19CoiQixmFT>

Friday, April 17 Pacific Time

- 8:30 – 8:35 am** **Welcome Remarks**
David Armstrong (USC Site Director)
- 8:35 – 9:00 am** **State of The Center (SOTC) and Roadmap**
Prof. Janet Roveda & Prof. Bijan Najafi C2SHIP Directors
- 9:00 – 9:10 am** **IAB Chairs Opening Remarks:** *Speakers Ms. Halstead*
- 9:10 – 9:20 am** **Success Story from IAB** **Vibrent Health**
- 9:20 – 9:45 am** **NSF IUCRC Program Director** Dr. Mohan Kumar
(15 minutes + 10 minutes Q&A)
- 9:45 – 10:00 am** **Coffee Break and Networking**

10:00 – 11:00 am: Session 1: Project Reports/New Project Pitches

Moderators: Skubic

Presentation (12 minutes + 3 minutes Q&A or Airtable inputs)

Y01- CAL-P001: Wearable Wireless Eddy Current Sensors for Continuous Skin Edema and Brain Hemorrhagic Stroke Monitoring

Mentor: Valsem, **PI** Yu-Chong Tai, **Presenter:** Haixu Shen, (final year)

Y02-MU-P004: Multimodal Sensing Integrated with Mobility Aids for Monitoring Dehydration in Older Adults

Mentor: Vadum, **PI:** Zheng Yan, **Presenter:** Zehua Chen, (continue)

<https://arizona.box.com/s/mj9xuqb0u9xdngj1p2n76o5h0k5dhvpt>

Y01-CAL-P006 THERMAP -- Polymer-based temperature mapping devices

Mentor: Valsem **PI** Chiara Daraio, **Presenter:** Nicole Higdon (continue)

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Y01-BCM-P008: Transcutaneous Electrical Nerve Stimulation For Lower Extremity In Patients With Post Acute Covid-19 Syndrome: PACS (podium presentation)

Mentor: NeuroMetrix, **PI:** Bijan Najafi, **Presenter:** Miguel Bargas Ochoa (continue)

<https://arizona.box.com/s/i9zbhdbxw4i2u227tnfiucybydbjw>

11:00 – 11:15 am **Coffee Break and Networking**

11:15 am– 12:00 pm: Session 2: Project Reports

Moderators: Tavakolian

Presentation (12 minutes + 3 minutes Q&A or Airtable inputs)

Y01-BCM-026: Integrating a Personal Virtual Assistant in post-operative cancer care (Podium Presentation)

Mentor: Smartek21, **PI:** Bijan Najafi, **Presenter:** Miguel Bargas Ochoa (continue)

<https://arizona.box.com/s/q9hcfyslq52fh7kacenk0fl3x1356aci>

Y01-CAL-029: Low cost acoustic & ultrasonic portable probe (final year)

Mentor: ThinkLabs, **PI:** Chiara Daraio, **Presenter:** Danial Panahandeh

Y2-CAL- 030 An Intuitive Visual Interface for the Monitoring and Analysis of Patient Cohorts

Mentor: Vibrent Health, **PI:** Stanislav Djorgovski, Santiago Lombeyda,
Presenter: Santiago Lombeyda

12:00 – 1:00 pm: lunch and networking (posters)

1:00 – 2:00: Session 3: New Project Pitches

Moderators: Najafi

Presentation (12 minutes + 3 minutes Q&A or Airtable inputs)

Y03-USCFIU-047 Development of a Star Trek Tricorder for Wound Healing and Limb Preservation

Mentor: Medline/Valsem, **Presenter** Anu Godavarty, **PI** Anu Godavarty, David Armstrong

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Presenter: Philipp Gutruf, Anu Godavarty, and Bijan Najafi

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<https://arizona.box.com/s/3qq6lsn5m9su9s8mc5exlromhc6xftlb>

Y03-BCM-050 Project Title: Tele-exergaming to increase lower extremity blood flow and skin oxygenation in CLTI patients undergoing revascularization

Mentors: Kent Imaging/Medline; **PIs:** Drs Joseph Mills/Jayer Chung/Bijan Najafi

Presenter: Alejandro Zulbaran

<https://arizona.box.com/s/gzt71ztiaoc6tqqot22p9tz9zv4rf0ij>

2:00 – 2:15 15 minutes break

Online sessions ends

2:15 – 5:00 pm Session 5: Closed Door Feedback and Voting

For remote members:

Invite Link: <https://arizona.zoom.us/j/2857030497>

2:30 – 3:00 Discussion (Moderators: TBD)

3:00 – 5:00 IAB organizational meeting and constructive discussion, feedback on roadmaps and future directions. (Voting in a separate room)

6:00 – 8:00 pm Dinner /poster

Posters:

Y01 -USC- P019: Develop a “Star Trek Replicator” for wounds. (final year)

Mentor: Valsem

PI: David Armstrong

Presenter: David Armstrong

Y1-BCM-P011: A Tele-Foot Exercise Program with Wearable Sensors to Increase Compression Garments Efficacy in Patients with Lower Extremities Edema

Mentor: Medline, **PI:** Bijan Najafi, **Presenter:** Gozde Cay

Y02-MU-034 The Smart Pillow: An In-Home Sensing Platform for Tracking Health

Mentor: Advanced Sleep Technologies **PI:** Marge Skubic **Presenter:** Ruhan Yi & Bhanu Kasani

Y02-UA/MU-038 Using Contactless Sensors to Remotely Monitor Falling

Mentor: Signify/Best Buy Health **PI:** Shu-Fen Wung & Marge Skubic **Presenter:** Max Chen & Alisha Johnson

Y01-BCM-018: Using wearables to remotely track and screen risk of falling in older adults (poster) (continue project)

Mentor: BestBuy, **PI:** Bijan Najafi & Shu-Fen Wung, **Presenter:** Abderrahman Ouattas

<https://arizona.box.com/s/kcd1xfeunl0is7d1utmbw5zjt3tos9jl>

Y02-BCM-031: Personal Virtual Assistant for Tele-Pulmonary Rehabilitation Veterans (poster)

Mentor: Smartek, **PI:** Bijan Najafi/Amir Sharafkhaneh, **Presenter:** Naima Rodriguez

Y03-BCM-051: Remote assessment of activity of daily living (ADL) using wearable sensors and standardized questionnaires in healthy adults and adolescents (poster) **(New Project)**

Mentor: BioSensics, **PI:** Bijan Najafi, **Presenter:** Miguel Bargas Ochoa

<https://arizona.box.com/s/jck39e6nr13l3hyz1997sy6urn2pmljm>

Y03-UND-052 Project Title: Integrated Portable Catheter Associated Urinary Tract Infection (CAUTI) monitoring and disinfection device

Mentor: **Presenter** Abdolrahim Zandi, **PI** Kouhyar Tavakolian **(New Project)**

<https://arizona.box.com/s/56r6g1xzb17ec4gxo16i73ahpl5jikgc>

Y03-UND-053: A Programmable Variable Multi-Channel Functional Electrical Stimulator For Home Health Care

Mentor: **Presenter:** Robert Brunnemer **PI:** Kouhyar Tavakolian **(Non-Voting, New Project)**

C2SHIP-Student_01: A Semi-Supervised Approach to Unobtrusively Predict Abnormality in Breathing Patterns Using Hydraulic Bed Sensor Data In Older Adults Aging in Place.

Presenter: Pallavi Gupta, University of Missouri

C2SHIP-Student_02: Low-cost ultrasonic portable probe assessing lung condition

Authors: Dan Shahraki, Oleksii Ostras, Yu Sun, Ben Sadri, Di Wu, Clive Smith, Katie Bouman, Gianmarco Pinton, Chiara Daraio

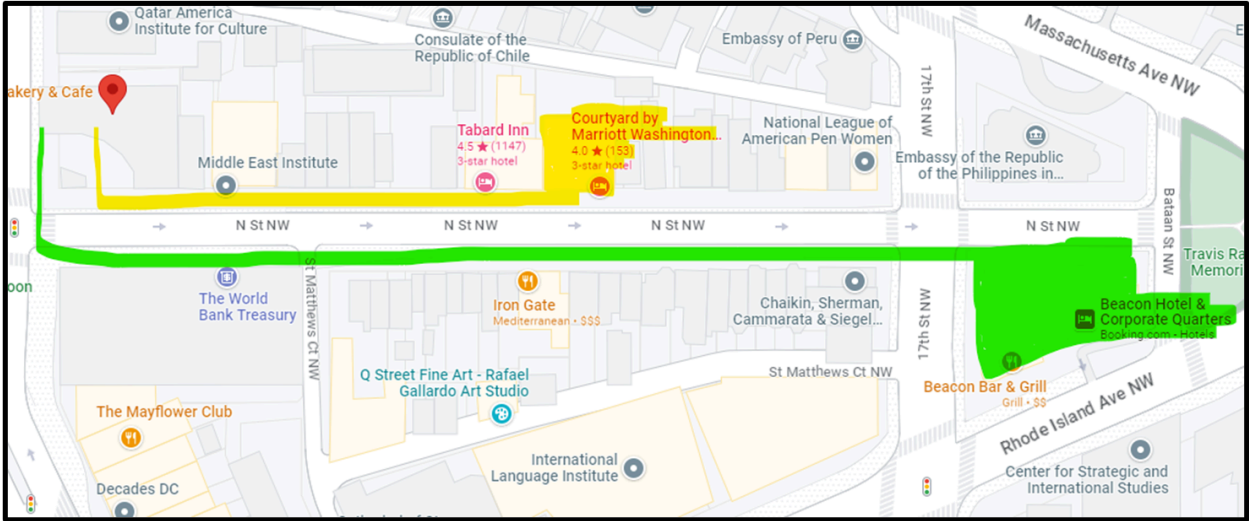
Presenter: Dan Shahraki, Caltech

C2SHIP-Student_03: Delivering Equitable Healthcare at Home - Generative AI for Accessible and Personalized In-Home Conversational Care

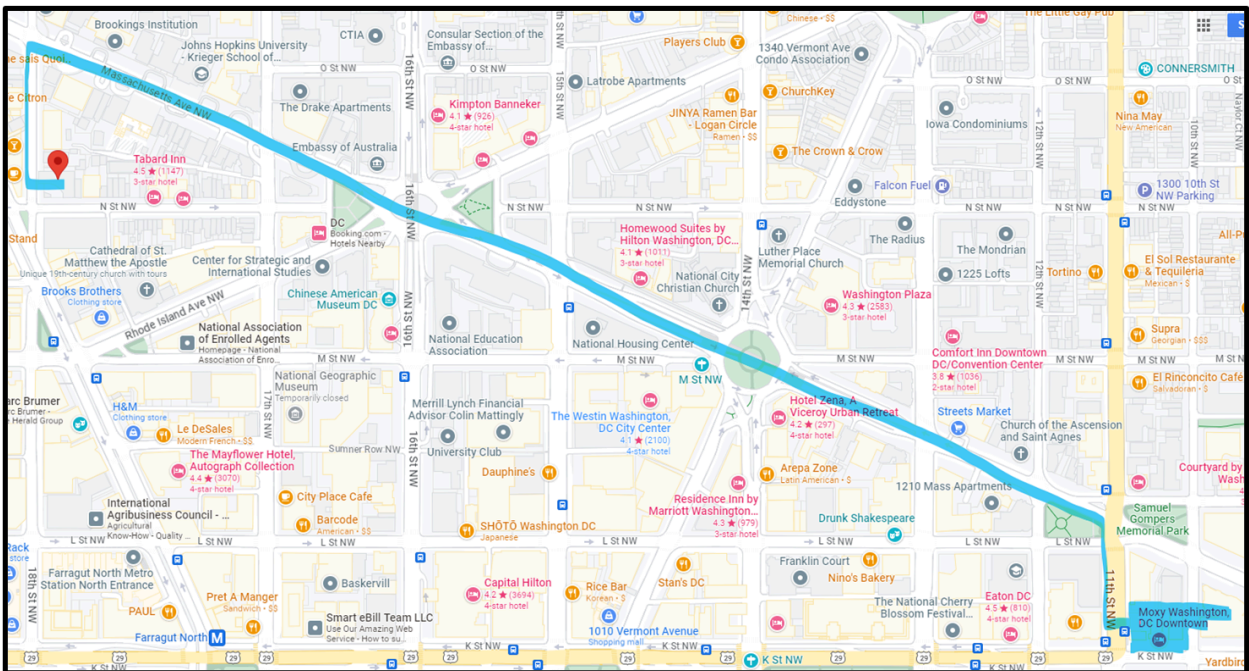
Authors: Shayaan Uddin, Sunilkumar Kakade, Dr. Daniel Lee

Presenter: Sunilkumar Kakade, University of Arizona

C2SHIP Annual Meeting Lodging Map



Both the Courtyard by Marriott and Beacon Hotel are located within walking distance (5 minutes or less) of USC Capital Campus.



Moxy Washington DC Downtown is located roughly a mile from USC Capital Campus. While there are numerous bus stops, the easiest option getting to and from the venue will most likely be taxi/ride share app.

RECOMMENDED TRANSPORTATION TO LODGING

1. METRO RAIL DIRECTIONS

To COURTYARD BY MARRIOTT / BEACON HOTEL

FROM RONALD REAGAN INTERNATIONAL AIRPORT (DCA):

Take the Blue Line to Farragut West Station. The hotels are a 10-15 minute walk.

FROM DULLES INTERNATIONAL AIRPORT (IAD):

Take the Silver Line to Farragut West Station.

To MOXY WASHINGTON, DC DOWNTOWN

FROM RONALD REAGAN INTERNATIONAL AIRPORT (DCA):

Take the Yellow Line to Mt. Vernon Square Station. The hotel is a 10 minute walk.

FROM DULLES INTERNATIONAL AIRPORT (IAD):

Take the Silver Line to L'Enfant Plaza Station. Transfer and take either the Yellow or Green Line to Mt. Vernon Square Station.

2. LOCAL TAXI COMPANIES

DC TAXI SERVICE

Website for online booking: <https://www.dctaxiservice.com/>

Phone: (202) 412-7049

YELLOW CAB COMPANY OF DC

Website for online booking: <https://dcyellowcab.com/>

Phone: (202) 544-1212

3. RIDESHARE APPS

Uber, Lyft, etc.



<https://c2ship.org/>

C2SHIP Mission Statement:

The mission of the C2SHIP Center is to engage academic and industrial partners in joint efforts that develop healthcare technologies for in-place care and accelerate innovation through multi-specialty collaborations.

C2SHIP Strategy:

- Emphasize fundamental investigations that provide an in-depth understanding of the core disciplines needed for personalized technology that promotes in-place care
- Establish effective interactions with Center members to promote innovation capacity and accelerate technology transfer
- Promote collaborations with other existing centers to create multi-center innovative technology for the involved core disciplines

C2SHIP Competency:

- **Design**
 - Wearables/digital health/IoT/In-home device
 - Form factor optimization/Smart materials
- **Stream data/Data Fabric**
 - Patient interface/telemedicine/Data visualization
 - AI/Data fabric
- **Prototype testing**
 - Clinical study/Feasibility
 - Designing clinical trial/Bed to Bench

C2SHIP Thrust:

- **Post hospital care**
 - Value-based outcomes
 - Connected health/Healthy recovery
- **Care at home**
 - Wellness/Preventive care/Chronic care
 - Acute care/Triaging/Smart referral
- **Decentralized clinical trials**
 - Remote patient monitoring
 - Adherence reinforcement/retention





<https://c2ship.org/>

List of C2SHIP members in 2022-2023

