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DR. RICHARD J. BELLUCCI
Translational Hearing Center
Creighton University

Creighton UNIVERSITY
School of Medicine

Bellucci Translational Hearing Center NEWSLETTER

2024 Bellucci Symposium attendees gather for a group photo with award winners Jaime García-Añoveros PhD and Nesrine Benkafadar, PhD, PharmD.

Overview

The Bellucci Translational Hearing Center has many exciting updates to share throughout this newsletter. We are thrilled to welcome Justine Renauld, PhD to the Center. The Drug Discovery & Delivery Core Molecular Biology sub core has added a Protein Simple Jess, QuantStudio Absolute Q dPCR and Agilent Seahorse XFe24. We'd like to Congratulate our most recent RPL graduate, Padmashri Ragunathan, PhD. Our current Research Project Leaders and Pilot Project Leaders continue to excel. We are eager to begin our CoBRE phase 2 submission this year!

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Featured articles

Introduction to Justine Renauld, PhD

The Bellucci Translational Hearing Center is delighted to extend a warm welcome to Justine Renauld, PhD as the Bellucci Translational Hearing Center's newest faculty member. We are excited to collaborate with Dr. Renauld as she is planning to submit a Research Project Leader application this year. We are confident that with Dr. Renauld on board The Center will thrive and Dr. Renauld will be an integral part of The Bellucci Translational Hearing Center moving forward!

Justine Renauld, PhD

2024 Bellucci Symposium Registration

We are excited to welcome everyone back for the 2024 Bellucci Symposium. The date for the 2024 Symposium is set for Friday, May 17th, 2024. Please register by May 1st, 2024 to receive complimentarty lunch service. We are also thrilled to announce that the 2024 Symposium will continue to be held virtually and in person. If you have any questions regarding the 2024 Symposium, please reach out to Charles Klinetobe (charlesklinetobe@creighton.edu).

Click here to register for the 2024 Symposium

Padmashri RPL Graduation

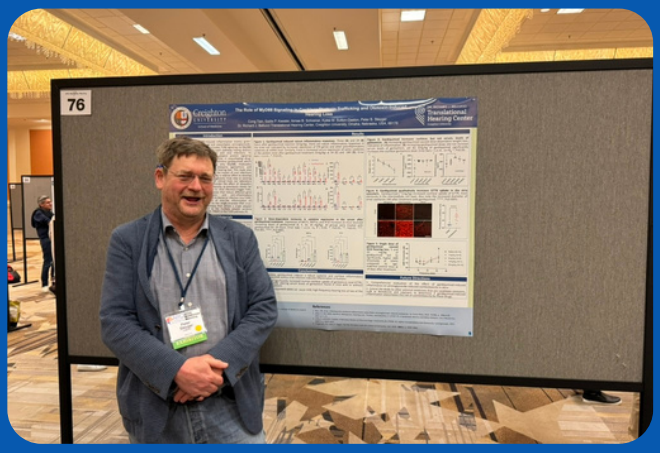
Padmashri Ragunathan has received her RO1 funding and graduated from her Research Project Leader position within the Translational Hearing Center. We are thrilled for Padmashri and wish her all the best as she continues her research! This will allow for a new Research Project Leader to join the THC and we are hopeful to announce that individual very soon!

Dr. Alekha Dash Recieves University Research Award

Dr. Dash has been awarded the University Research award from Health Sciences. Congratulations to Dr. Dash for this outstanding achievement! We are thrilled to have Dr. Dash as a part of the Bellucci Translational Hearing Center!

Preperation for CoBRE Phase 2 Submission is underway

The Translational Hearing Center has begun to gather information for our CoBRE Phase 2 competing renewal submission. We are excited to take the center into phase 2 stronger than ever and look forward to growing our research cores!



BTHC at ARO

Research Cores

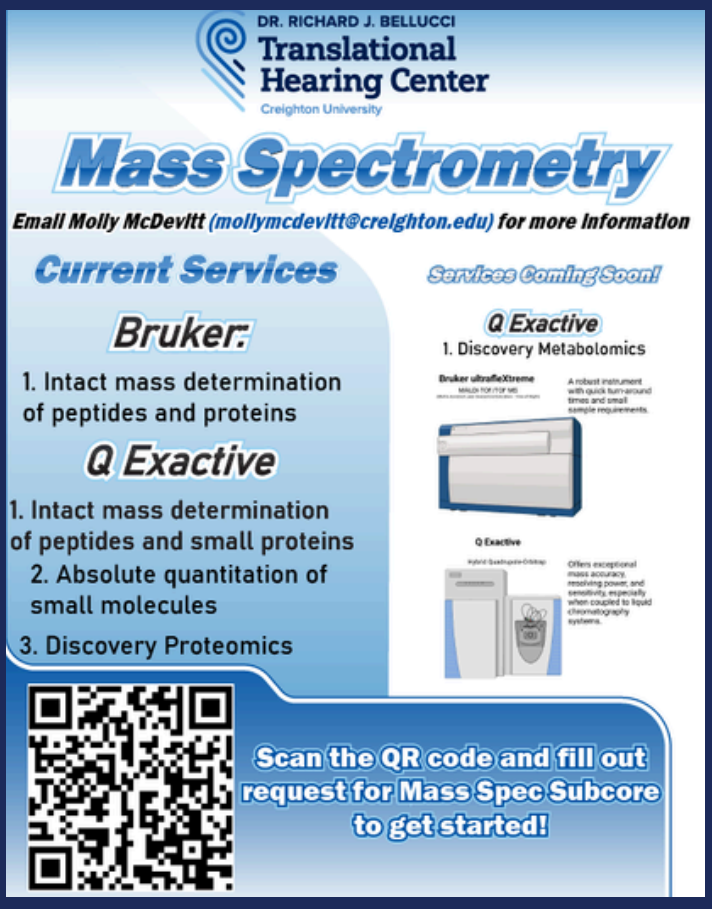
Core Services Contacts:

Drug Discovery & Delivery Core:
chunkaiwang@creighton.edu

Advanced Imaging:
anthonystender@creighton.edu

Mass Spectrometry:
mollymcdevitt@creighton.edu

Molecular Biology:
sarathvijayakumar@creighton.edu



DDDC Molecular Biology

New instruments available in the Drug Discovery & Delivery Core

Please contact Sarath Vijayakumar with any questions! (sarathvijayakumar@creighton.edu)

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Translational Hearing Center
Creighton University

Auditory & Vestibular Technology Core
Molecular Biology Services

Our Newest Toys!

Protein Simple Jess
Automated capillary Western Blot
High-Throughput (13-25 samples)
Results within 3 hours

QuantStudio Absolute Q dPCR
Microfluidic array plate based
Simplified workflow
Broad applications

Agilent Seahorse XFe24
Mitochondrial respiration/glycolysis
OCR/ECAR in cells/small 3D organisms
24-well plate format

Located in room 209 in CRISS I, the Molecular Biology services of the Auditory and Vestibular Technology core provides advanced instrumentation support for nucleic acid, protein and immune profiling analyses.

Our services include:

- Absolute Q Digital PCR
- QuantStudio 3 Real-Time PCR
- Jess Western Blot system
- BIO-RAD ChemiDoc MP Imaging
- Seahorse XFe24 Analyzer
- Biotek Synergy HI microplate reader
- Milliplex (Luminex) Multiplex Assay
- Qubit Flex

Auditory & Vestibular Technology Core
Michael G. Nichols, PhD
Core Director
mnichols@creighton.edu
(402) 280-2159

Molecular Biology Services Inquiries
Sarath Vijayakumar, PhD
Co-Director & Manager
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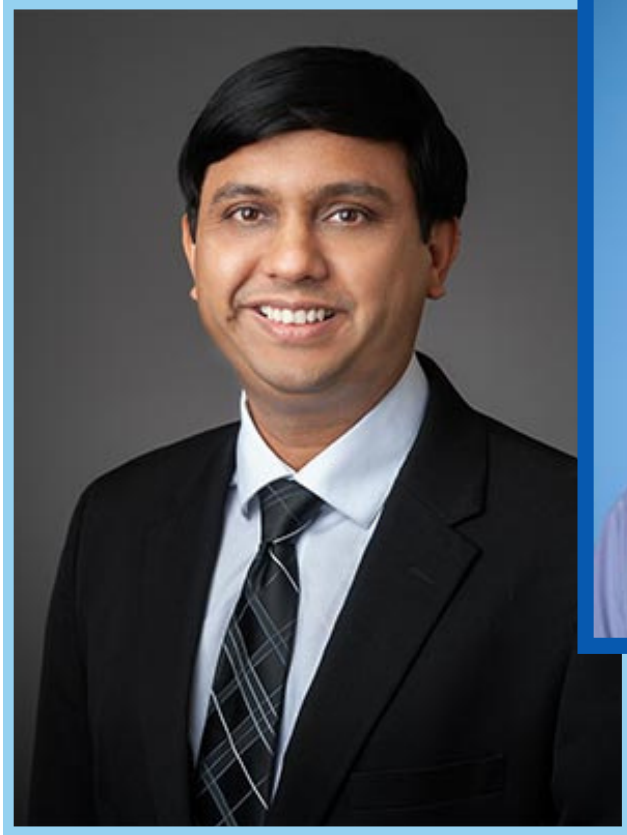
(402) 280-2965

Our Pilot Project Awardees

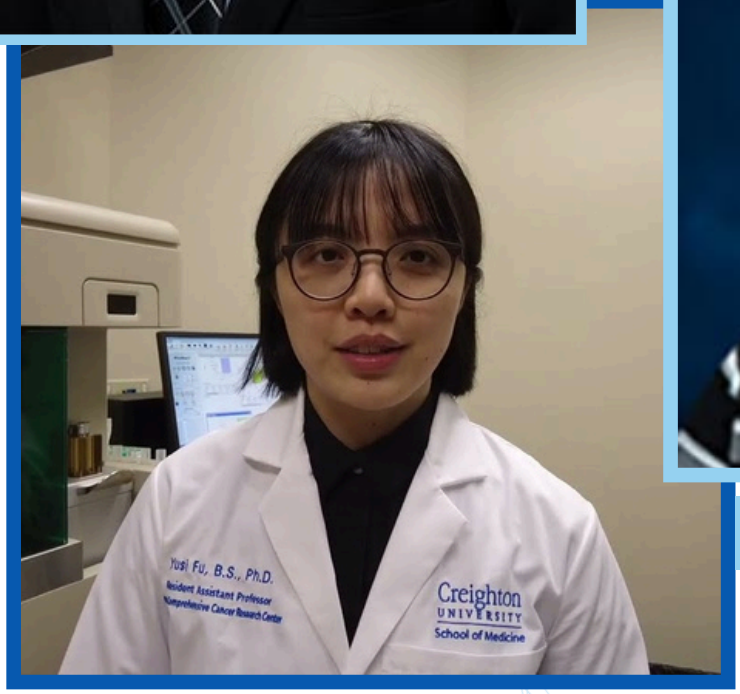
Additional information from all of our Pilot Project Awardees can be found by clicking here.

Sarath Vijayakumar, PhD

Steven Fernandes, PhD



Gopal Jadhav, PhD



Yusi Fu, PhD

Featured articles

Our Current Research Project Leaders

Jeffery North, PhD

Aminoglycosides (AG) have broad antibiotic spectra against aerobic gram-positive and gram-negative bacteria and mycobacterial pathogens. AG toxicities include kidney tubular necrosis, vertigo, and, most notably, hearing loss. AG are used to treat multidrug-resistant tuberculosis (MDR-TB) and *Mycobacterium abscessus* complex (MABSC) infected patients (e.g. cystic fibrosis, bronchiectasis or chronic obstructive pulmonary disease). Studies have shown that 55-58% of patients infected with MDR-TB who received amikacin as part of their therapy, experienced hearing loss due to its ototoxic effects. Likewise, up to 27% of cystic fibrosis patients infected with *M. abscessus* who received AG therapy experienced hearing loss. Read more here: Research Project Leaders (creighton.edu)

Transcription factor POU4F3 is indispensable for the differentiation and homeostasis of sensory hair cells, the essential cell type converting mechanical vibrations into electrical signals for hearing function. During hair cell differentiation, the pioneer factor activity of POU4F3 is required for ATOH1 to access many inaccessible elements to up-regulate hair cell genes. In mature hair cells, reduction of POU4F3 transcription activity due to mutations in one allele leads to hair cell death and hence progressive hearing loss (DFNA15,autosomal dominant non-syndromic hearing loss 15). It remains unclear how the expression of POU4F3 gene is regulated at different developmental stages... Read more here: Research Project Leaders (creighton.edu)

Litao Tao, PhD

Our Most Recent RPL Graduate

Padmashri Ragunathan, PhD

Exposure to alcohol during pregnancy produces fetal alcohol spectrum disorders (FASD) that are associated with sensory and cognitive deficits. Individuals with FASD have impaired auditory processing and also frequently exhibit atypical auditory behaviors. It is therefore important to determine the molecular mechanisms that govern auditory processing in normal and developmentally abnormal brain. We will examine auditory processing in mice prenatally exposed to alcohol, perform in vivo imaging in the primary auditory cortex to track AMPARs α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid.) and dendritic spines over days, and perform electrophysiological recordings... Read more here: Research Project Leaders (creighton.edu)

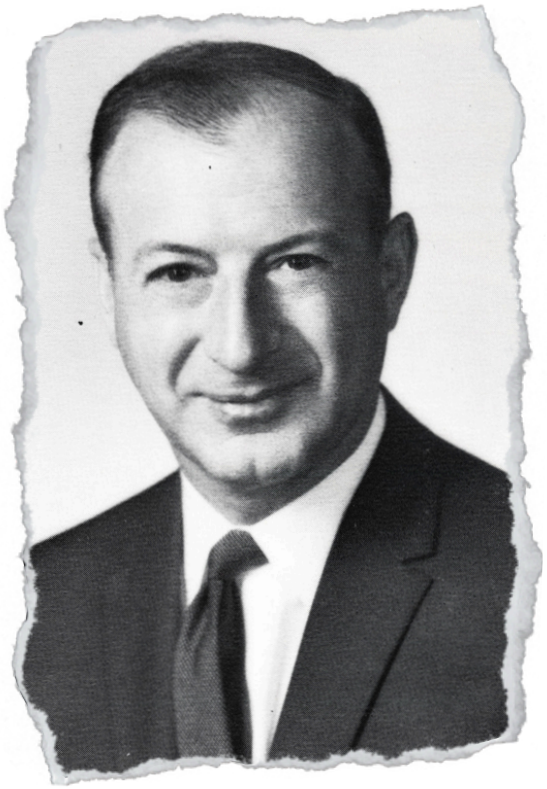
Featured articles

Gracious Story from a Patient of Dr. Bellucci

Hello,
I just wanted to send a note to the family of Dr Bellucci. I want to thank them for the work he did on me in 1956/57 time period. My family moved from White Sands New Mexico to New York so I could have Dr Bellucci work on my ear. I was 4 years old. **Dr Bellucci at that time was one of three doctors in the world able to do the surgery I needed at that time.**
I was in and out of hospitals from the time I was born to the time Dr Bellucci operated on my ear.
Dr Bellucci performed a mastoid surgery and an ear block. He removed skin from behind the ear to make a new ear drum. I can remember lying in bed at the hospital, in New York City, looking out the window and only seeing a bridge.
Dr Bellucci told my parents, I had to live in the southwest with my condition. He gave my parents money to take me to Disney Land. **He was the best!!**

My father was working for Sperry Rand at the time. My father and his project team, moved every time my father did for my health. We moved to Phoenix because of my health and the insistence of Dr Bellucci.
In 1960 I had another ear drum surgery from Dr Brooks in Phoenix. Dr Bellucci had referred him to us after we moved. Dr Brooks removed a blood vein from my ankle to make a new drum.
Because of Dr Bellucci I can hear. Although I have a mastoid cavity that has to be cleaned out every other year it's a small price to pay to hear. Dr Bellucci told my parents never let anyone make the cavity hole any bigger, just to make it easier on the doctor to clean. I have kept that directive close to my heart. I find it hard to find a doctor that will/can clean the cavity without increasing the hole.

"God Bless Dr Bellucci and his family."



More About Richard J. Bellucci, MD

Dr. Bellucci's mission in starting the Bellucci DePaoli Family Foundation was to ensure the important work of hearing preservation and restoration continues. The Foundation offers funding to impressive PhD candidates and post-doctoral fellows making important contributions in auditory research, plus support for acquiring necessary research equipment. During the procedure, the stapes (a tiny bone in the ear) is removed and replaced by a prosthetic device, gifting patients with certain types of hearing loss to regain their hearing. Dr. Bellucci was Chair of Otolaryngology at the Manhattan Eye, Ear & Throat Hospital (1963-79) and Chairman of Otolaryngology at New York Medical College (1966-80), completing his residency at the former. He trained many ear, nose, and throat specialists who practice today throughout the United States, Canada, and beyond. Dr. Bellucci was also the Director of several impressive residency programs. In addition to running his own private practice and serving as a longtime president of the American Otological Society, he volunteered time and services in his later years at the Hopital de Sacre Coeur in Milot, Haiti, exemplifying the Jesuit spirit of service.

The Translational Hearing Center at Creighton University, Boys Town National Research Hospital and University of Nebraska Medical Center is funded by a CoBRE Award GM139762 from the National Institute of General Medical Science, a component of the National Institutes of Health. This newsletter is solely the responsibility of the authors and does not necessarily represent the official views of any supporting institution.