

# UConn HEALTH

December 11, 2024

TO: Members of the Board of Trustees  
FROM: UConn Health Board of Directors  
RE: FY24 Annual Reports of Endowed Chairs

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## **RECOMMENDATION:**

That the University of Connecticut Board of Trustees approve the annual reports for the following Endowed Chairs for the period of July 1, 2023 to June 30, 2024

1. Infectious Diseases
2. Human Genetics
3. Transfusion Medicine

## **BACKGROUND:**

The three endowed chairs referenced above were established during the Fiscal Year 1988 to 1989 as authorized by CGS 10a – 20a. Subsection (f) of the statute states the “Board of Trustees shall submit annual reports to the Board of Governors concerning their expenditures.” The reports presented today are for FY24 - the period of July 1, 2023 to June 30, 2024.

The UConn Health Board of Directors met and approved the FY24 Endowed Chairs’ Reports at its December 9, 2024 meeting, and recommends approval to the Board of Trustees.

State of Connecticut Board of  
Governors for Higher Education  
Chair in Infectious Diseases

Kevin Dieckhaus, MD

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## THANK YOU MESSAGE

I would like to express my gratitude to you for supporting the endowed chair. The support provides material support for ongoing research activities of infectious disease fellows, medical students, and resident physicians pursuing interests in the field of infectious diseases.

## RESEARCH AND TEACHING

This chair supports the development of trainees interested in infectious diseases at all levels of medical training. Specifically, during the last year, it facilitated the on-site tropical medicine training provided to eight medical residents in southwestern Uganda by supporting necessary UConn faculty oversight of the clinical experience. The Uganda clinical immersion promotes acquisition of direct medical skills as well as valuable cross cultural and integrative skills important for any physician practicing in a multiethnic world.

The chair has supported expanded opportunities for collaborative research as well as immersive opportunities for learners in additional locations including Columbia, Sri Lanka, and Vietnam. A recent memorandum of cooperation with the University of Peradeniya in Kandy, Sri Lanka, site assessment visit, symposium, and current plans to send two UConn medical students to Sri Lanka in June 2024 to pursue infectious diseases research is a testament to the success of the collaboration. A new collaboration with Gulu University has led to development of three public health projects in Kisoro and Gulu districts of Uganda for four UConn medical students.

The chair supported the work of an ID fellow evaluating the utility of intravenous immunoglobulin (IVIG) as a potential therapy for infection with *Babesia microti*, a tick-borne parasite endemic to Connecticut. Investigations are ongoing in the area of IVIG's impact on human health and diagnostic testing, with a recently-completed evaluation of Hepatitis B markers present in commercial IVIG products.

The chair has supported UConn medical student-directed research focusing on important public health issues in Connecticut. Collaboration with Hartford Hospital and St Francis have led to a current evaluation of the impact of Respiratory Syncytial Virus (RSV) on hospitalized patients. Working within our HIV/AIDS clinic populations, we are formally assessing determinants of health that may be amenable to intervention in this vulnerable population. Collaboration with Storrs investigators have focused on CRISPR-based technology for respiratory disease diagnostics.

## PUBLICATIONS, CONFERENCES, AND AWARDS

The chair supported the UConn Global Health symposium series (April 2024) where the theme "Social and Environmental Determinants of Health" was explored. This symposium at UConn Health integrated with related symposium at UConn Storrs, as well as Connecticut Children's, and brought in a wide variety of speakers both nationally and internationally. The chair supported the development of the "Symposium on Infectious Diseases, COVID-19, and Antibiotic Resistance," held at the University of Peradeniya, Kandy, Sri Lanka in November 2023.

Cross-campus collaborations facilitated by this chair have led to a published manuscript evaluating CRISPR based diagnostics (Zhang Y, Song Y, Weng Z, Yang J, Avery L, Dieckhaus KD, Lai RY, Gao X, Zhang Y. A point-of-care microfluidic biosensing system for rapid and ultrasensitive nucleic acid detection from clinical samples. *Lab Chip*. 2023 Aug 22;23(17):3862-3873). A manuscript has also resulted from the babesiosis investigations: (Kostka J, Maharjan AS, Kumar S, Hackenyos D, Krause PJ, Dieckhaus K. Absence of Anti-Babesia microti antibody in commercial intravenous immunoglobulin (IVIg). *PLoS Negl Trop Dis*. 2024 Mar 14;18(3):e0012035). Our work evaluating impact of IVIG on Hepatitis B serologies was led by an ID fellow and presented at the state-wide Connecticut Infectious Diseases Society (CIDS) meeting.

The medical student research project in Sri Lanka evaluating vaccine hesitancy for dengue vaccine was awarded a Benjamin H. Kean Travel Fellowship by the American Society of Tropical Medicine & Hygiene (ASTMH) to support the implementation of the project.

## **SERVICE AND PUBLIC ENGAGEMENT**

Related to infectious diseases in the global setting, programs have fostered ongoing and developing relationships between collaborators in the global north and south. One specific focus has been to foster linkages between researchers at international sites with potential collaborators within the UConn system through numerous web-based formats. Collaborations are advancing in Colombia, Lithuania, Sri Lanka, Uganda, and Vietnam. Formal memorandum of cooperation have recently been developed with Gulu University in Uganda, the Lithuanian University of Health Sciences, and the University of Peradeniya in Sri Lanka.

## **ACADEMIC PROGRAMS AND FACULTY DEVELOPMENT**

The chair has helped foster developing partnerships between collaborators at UConn with those in the global south. One specific focus has been to foster linkages between researchers at international sites within low and middle income countries with potential collaborators within the UConn system through numerous web-based formats. As an example, a current collaboration with Gulu University in Uganda has developed three separate public health-focused community research projects involving four UConn medical students, three Ugandan medical students, and four Gulu University faculty, and will serve as a model for future collaborations and is designed to provide preliminary data towards future public health grant applications

## **LOOKING AHEAD**

We plan to continue to advance many of the initiatives already in process. This includes additional studies of CRISPR-based infectious diseases diagnostic and pursuing ongoing international collaborations in research, education, and clinical care. There is a renewed focus on learner participation in immersive global health experiences. Collaborations with the University of Peradeniya and Gulu University will continue with an expanded focus of trying to parlay our initial data into research proposals that foster collaborations between UConn and our international partners.

UConn Health  
 Endowed Chair in Infectious Diseases/AIDS Research  
 631129-10141-10

	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
<b>Beginning Cash Balance</b>	<b>\$36,704</b>	<b>\$29,725</b>	<b>\$31,410</b>	<b>\$40,387</b>	<b>\$55,364</b>	<b>\$67,944</b>	<b>\$71,169</b>	<b>\$71,169</b>	<b>\$84,371</b>
<b>Receipts :</b>									
Interest Transferred from DHE:		\$3,327	\$13,238	\$17,434	\$26,250	\$5,887	\$2,162	\$19,330	\$59,459
<b>Total Receipts</b>	<b>\$0</b>	<b>\$3,327</b>	<b>\$13,238</b>	<b>\$17,434</b>	<b>\$26,250</b>	<b>\$5,887</b>	<b>\$2,162</b>	<b>\$19,330</b>	<b>\$59,459</b>
<b>Expenditures :</b>									
Salaries and Wages									
Fringe Benefits									
Purchased Services	\$6,979			\$285	\$3,920	\$2,047	\$1,548	\$5,928	\$13,381
Supplies				\$1,527	\$4,242	\$615		\$200	\$1,944
Equipment		\$1,642	\$4,261	\$645	\$5,508				
Change in accruals							\$614		
<b>Total Expenditures</b>	<b>\$6,979</b>	<b>\$1,642</b>	<b>\$4,261</b>	<b>\$2,457</b>	<b>\$13,670</b>	<b>\$2,662</b>	<b>\$2,162</b>	<b>\$6,128</b>	<b>\$15,325</b>
<b>Ending Cash Spendable Balance</b>	<b>\$29,725</b>	<b>\$31,410</b>	<b>\$40,387</b>	<b>\$55,364</b>	<b>\$67,944</b>	<b>\$71,169</b>	<b>\$71,169</b>	<b>\$84,371</b>	<b>\$128,505</b>

**Health Net, Inc. Chair in Human  
Genetics**

**David W. Rowe, MD**

**drowe@uchc.edu**



## THANK YOU MESSAGE

The Human Genetics Chair support has allowed me to expand my interactions with members of the UConn Storrs Computer Science Department to build computer analysis tools to analyze the complex histological images produced by the advanced microscopes that the Chair helped to acquire for the fluorescence imaging core that I direct. These computer tools will be applied by the core research staff who will provide these technologies to the wider skeletal biology community.

## RESEARCH AND TEACHING

Our research group has made progress in the histology necessary to determine the activity of individual cells embedded in skeletal tissues (called spatial genomics). This became possible by solving technical issues inherent to cells embedded within a mineralized tissue and computer algorithms to capture and interpret the images. This foundational technology for visualizing and computing the cell-cell interactions will be incorporated into the histological portfolio offered by the imaging core.

## PUBLICATIONS, CONFERENCES, AND AWARDS

We participated in two major Common Fund NIH initiatives (KOMP and HuBMAP) where leading research institutions collaborate on a specific new NIH-identified goal. We learned from and contributed to the objectives of these programs (digital histology and spatial genomics). The experience demonstrated the necessity of building cross-disciplinary research teams (engineering, microscopy, computer science and biomedicine) for success in future NIH/NSF/DOD grant submissions.

## SERVICE AND PUBLIC ENGAGEMENT

We have submitted two NIH grants designed to assist the skeletal biology community to adapt to the digital environment. One grant will build a data repository especially designed for storing and retrieving imaging data from bone studies and the other will develop histological markers for specific cell types within joint cartilage. Both grants rely on researchers worldwide to design the databases and the highly developed UConn computer infrastructure that will host these databases.

## ACADEMIC PROGRAMS AND FACULTY DEVELOPMENT

Given the digital transitions required of our research discipline, I wanted to see if undergraduate students in computer and biological science from UConn and the smaller colleges in the Hartford area could contribute to building and implementing the tools necessary to produce digital and analyze histological images. This proved to be a resounding success and reinforces my confidence that the intellectual talent necessary for this transition exists within our Connecticut community.

## LOOKING AHEAD

Because biomedical research is now driven by digitally acquired data, impartially interpreted by computer algorithms and stored in publicly accessible databases, I have submitted proposals to UConn senior leadership to apply the expertise that currently exists in these domains to the biomedical groups at UCHC who will need this expertise.

UConn Health  
 Endowed Chair in Infectious Diseases/AIDS Research  
 631129-10141-10

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<b>Beginning Cash Balance</b>	<u>\$36,704</u>	<u>\$29,725</u>	<u>\$31,410</u>	<u>\$40,387</u>	<u>\$55,364</u>	<u>\$67,944</u>	<u>\$71,169</u>	<u>\$71,169</u>	<u>\$84,371</u>
<b>Receipts :</b>									
Interest Transferred from DHE:		\$3,327	\$13,238	\$17,434	\$26,250	\$5,887	\$2,162	\$19,330	\$59,459
<b>Total Receipts</b>	<u>\$0</u>	<u>\$3,327</u>	<u>\$13,238</u>	<u>\$17,434</u>	<u>\$26,250</u>	<u>\$5,887</u>	<u>\$2,162</u>	<u>\$19,330</u>	<u>\$59,459</u>
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<b>Ending Cash Spendable Balance</b>	<u>\$29,725</u>	<u>\$31,410</u>	<u>\$40,387</u>	<u>\$55,364</u>	<u>\$67,944</u>	<u>\$71,169</u>	<u>\$71,169</u>	<u>\$84,371</u>	<u>\$128,505</u>

Health Net, Inc. - American Red  
Cross Chair in Transfusion Medicine

Biree Andemariam, MD

[andemariam@uchc.edu](mailto:andemariam@uchc.edu)



## THANK YOU MESSAGE

I am deeply indebted to my donor. Being granted this endowed chair has been an incredible honor. Hematology, and specifically transfusion medicine, is a field of medicine with a dearth of experts despite very large clinical volume and vast research needs. On a more granular level, here at the UConn School of Medicine, my sickle cell and thalassemia programs account for 50% of the blood transfusions given on an annual basis. In many patients, these transfusions are lifesaving when my patients develop complications such as stroke and the acute chest syndrome. In other cases, these transfusions are patients' lifeline as they fail to make adequate blood on their own. Such patients come in to my center every few weeks for blood transfusions and they do this for life.

Although both sickle cell disease and thalassemia are conditions with heavy dependence on transfusions, there has been very little advance finding alternative treatments. In sickle cell disease, there is widespread use of unnecessary blood transfusions by physicians who are largely unfamiliar with managing the patients' steady-state anemia and do not know that avoiding transfusions except in clearly defined clinical circumstances is the standard of care. These unnecessary transfusions have the potential to precipitate several complications including red blood cell allo-immunization, iron overload with resultant liver and heart toxicity, and delayed hemolytic transfusion reactions. Moreover, giving unnecessary transfusions to patients puts increased strain on the overall blood supply for the larger American population. I always stress that one transfusion that unnecessarily went to someone who didn't need it could have been used for someone else who desperately does.

I have used this endowment to (1) educate providers on when and when not to transfuse patients, (2) increase the overall donor pool in my community, and (3) identify alternatives to blood transfusion for both sickle cell disease and thalassemia.

## RESEARCH AND TEACHING

The endowed chair has enhanced my research in multiple ways. It gives me even greater stature both within and outside the University that tells current and potential research collaborators as well as grantors that my institution finds me incredibly worthy of such an honor. It gives me protected time to conduct independent investigator-initiated research and to develop additional testable research hypotheses. It also gives me the protected time to enhance education around proper use of blood transfusions in sickle cell disease and to engage in community-directed efforts to expand the blood donor pool. In the last year, I have mentored a junior faculty member in a quality improvement project focused on ensuring our hospital adheres to national guidelines regarding transfusion of individuals with the acute chest syndrome. The goal of this project is to ensure rapid diagnosis and life-saving transfusion therapy in patients identified with this syndrome upon presentation to the hospital. A second goal is to enhance this junior faculty's interest and experience in hematology as she begins to apply for fellowship in this area to further her professional development. Additionally, I have developed an international collaboration with a world renown hematologist in the Netherlands focused on defining the role of transfusions in the management of pregnant women with sickle cell disease. We are writing a multi-center randomized, prospective, controlled clinical research protocol



to test the hypothesis that regular transfusions during pregnancy can improve the outcomes of both baby and mother. I expect that this work will lead to publications, grant funding, and enhanced visibility for the University.

## **PUBLICATIONS, CONFERENCES, AND AWARDS**

In 2023, I gave eight invited presentations on my research. Additionally, my research was presented in 15 peer-reviewed oral or poster sessions across four national and international conferences. In September of 2023, I received the Award of Excellence for Service and Dedication Toward Sickle Cell Research and Treatment from Shiloh Baptist Church in Hartford, Connecticut. This award recognizes my commitment to the sickle cell disease community and includes the work done to improve awareness of the need for blood donations from African American donors. I was one of the invited authors of the Lancet Commission on Sickle Cell Disease which was published in July of 2023 in the highly reputable journal Lancet Haematology. The commissioned guidelines set the global priorities for sickle cell disease. In July of 2023, I co-authored a manuscript entitled "Global burden of transfusion in sickle cell disease." In December of 2023, I was senior author of a publication entitled, "Economic and clinical burden of managing transfusion-dependent  $\beta$ -thalassemia in the United States." I served on the steering committee of an international conference on sickle cell and thalassemia during which transfusional therapy and its risks/benefits were highlighted.

## **SERVICE AND PUBLIC ENGAGEMENT**

Over the past year, my research team has collaborated with the American Red Cross to increase the amount of blood donors of diverse backgrounds. We have had the pleasure of working with recruitment managers to create this collaborative blood drive targeting individuals who may be moved to donate by learning of the importance of blood transfusions for sickle cell disease (SCD) patients. Our first blood drive collaboration was held on June 19, 2023 in honor of World Sickle Cell Day. Together with our Community Advisory Board (CAB), which consists of individuals who have SCD or are caretakers of individuals with SCD, we spread the word to family and friends. During the 2023 blood drive, we had CAB members stop in to support and bring along volunteers who were eager to donate blood. One of our members and the coordinator who facilitates the CAB were featured on the evening news. Importantly, the American Red Cross surpassed their goal of 25 blood donations.

We are proud to report that through this collaboration the American Red Cross obtained 40 blood donations in total that day. Of those donations, 27 came from African American donors who are almost three times more likely to be a donor match for patients with SCD. Since then, we have given feedback to the American Red Cross on ways to improve this year's blood drive and spread the word about the drive on June 19, 2024. To increase participation in this event, we shared our approved flyer with our patient population and also shared it on our institution's website for employees, staff, and other site visitors to see. We also encouraged people to share it on social media and donate if they can. Our team will be in attendance again with CAB members interacting with the donors, volunteers, and other members of the community. We look forward to continuing this tradition for years to come and do our part to diversify and increase the blood donor pool.

## **ACADEMIC PROGRAMS AND FACULTY DEVELOPMENT**

The success of my niche clinical programs in sickle cell disease and thalassemia as well as the robust research portfolio that is run in parallel are both highlighted frequently as evidence of quality of UConn Health's academic programs. I am sought after on regular occasion by the institution for media interviews, meetings and hearings with state legislators, and to meet with faculty candidates. Sickle cell disease, in particular, is a frequent interest by medical students, dental students, and trainees for mentored research projects. Additionally, I have developed and nurtured collaborations among other researchers within the University who have in turn received federal and other extramural funding of significant magnitude.

## **LOOKING AHEAD**

Two gene therapies have been recently approved by the Food and Drug Administration for sickle cell disease and thalassemia. These treatments have the intent to cure patients of their condition and in clinical trials these therapies were shown to eliminate the need for blood transfusions. My goal for the next year is to lay the framework for our institution to be granted qualified treatment center status which would allow us to offer these gene therapies to our patients and to others from outside the institution, locally, and nationally.

UConn Health  
 Endowed Chair in Transfusion Medicine  
 300037-100520-10 (and 35021)

	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
<b>Beginning Cash Balance</b>	<u>\$423,141</u>	<u>\$425,555</u>	#####	<u>\$438,097</u>	<u>\$450,927</u>	<u>\$410,633</u>	<u>\$300,935</u>	<u>\$245,323</u>
<b>Receipts :</b>								
Interest Transferred from UCONN Foundation:							\$25,289	\$47,650
Interest Transferred from DHE:	\$4,107	\$3,825	\$8,717	\$12,830	\$2,944	\$1,081	\$9,665	\$29,728
<b>Total Receipts</b>	<u>\$4,107</u>	<u>\$3,825</u>	<u>\$8,717</u>	<u>\$12,830</u>	<u>\$2,944</u>	<u>\$1,081</u>	<u>\$34,953</u>	<u>\$77,378</u>
<b>Expenditures :</b>								
Salaries and Wages					\$32,921	\$81,941	\$67,966	\$5,429
Fringe Benefits					\$10,317	\$28,838	\$22,599	\$1,401
Purchased Services	\$1,693							\$1,383
Supplies								
Equipment								
Change in accruals								
<b>Total Expenditures</b>	<u>\$1,693</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$43,238</u>	<u>\$110,779</u>	<u>\$90,565</u>	<u>\$8,213</u>
<b>Ending Cash Spendable Balance</b>	<u>\$425,555</u>	<u>\$429,380</u>	#####	<u>\$450,927</u>	<u>\$410,633</u>	<u>\$300,935</u>	<u>\$245,323</u>	<u>\$314,488</u>