



Eileen Donoghue  
City Manager

October 31, 2019

Mayor William J. Samaras  
and  
Members of the City Council

RE: Library –Appointment of Trustee-Associate Member

Dear Mayor Samaras and Members of the City Council:

Pursuant to the authority specified under the Code of City of Lowell Section 39-1, it is with pleasure that I am appointing Syed K. Hasan M.D./Ph.D. of 46 Fairmount Street, Lowell, MA 01852 as an Associate Member to the Pollard Memorial Library Board of Trustees, to a term which expires December 31, 2022, or such time thereafter until a successor is appointed and qualified.

Confirmation by the City Council is required for this appointment and is hereby requested. I have attached her cover letter and resumé for your review.

I would be happy to answer any inquiries you may have concerning this appointment.

Very truly yours,

Eileen M. Donoghue  
City Manager

cc: City Clerk  
City Solicitor  
Library-Board of Trustees  
City Auditor  
Human Relations Manager  
MIS

Syed K Hasan M.D./Ph.D  
46 Fairmount Street Lowell MA 01852

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10/09/2019  
City Hall of Lowell  
375 Merrimack Street  
Lowell, MA 01852

**RE: Library Trustee Application:**

Dear Ms. Eileen Donoghue:

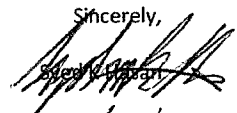
I am applying to be a Trustee of the Pollard Memorial Library. As a resident of the city of Lowell for the past 30 years; I have not only used our great library for leisure reading but for scientific research and have always found the library to be a great place for acquiring knowledge. In applying for this position I hope to gain knowledge on how our great library functions to deliver the best resources when it comes to fiction and non-fiction books and reference materials. As technology evolves our city library must be ready to embrace new technologies to deliver the high quality services for information to our city residents.

I am confident that not only can I prove to be an effective team player but also an excellent resource for technological issues and innovations as evidenced by my experience. My experience in both academia and in the biotechnology sector allows for new perspectives on both administrative and technological issues that our great Pollard Library and its esteemed director Ms. Victoria Woodley face in the coming short term.

Please consider my request for a personal interview to further discuss the Trustee position. Please feel free to call me [REDACTED] if I am not in, please leave a message and I will return your call promptly.

Thank you for your consideration. I look forward to speaking with you in person.

Enclosure//SKH CV

Sincerely,  
  
Syed K Hasan  
10/9/19

**Objective:**

- To apply professional qualifications, experiences and skills toward a challenging position in academia that offers difficult, but stimulating responsibilities.

**Education:**

**Suffolk University Sawyer School of Business MBA 2015-2019**

Finance

**University of Massachusetts Lowell 2010-2014**

PhD Biomedical Engineering

**Ross University School of Medicine 01/2001- 11/2005**

Medical Doctorate

**Georgetown University 1998-1999 (December)**

Master of Science; Biochemistry and Molecular Biology

**University of Massachusetts Amherst 1992-1999 (February)**

Bachelor of Science; Biochemistry and Molecular Biology

**Experience:**

**Academic Appointments:**

**UMASS/Lowell- Visiting Scientist/Adjunct Researcher 2012- 2016**

**Bioengineering Red Blood cells for Clinical use to lessen the burden of blood supply shortages.**

**Adjunct Professor of Chemistry MassBay Community College 2012-2013 Courses Taught- General Chemistry, Anatomy & Physiology and Microbiology**

**Presidential STEM Initiative Committee- BCC 2013**

**Service in Learning Faculty- Certificate of Appreciation -BCC -2014-2015**

**Adjunct Professor of Science- Bristol Community College 2012-Current**

**Courses Taught: General Chemistry (090), Wellness Physiology, General Biology (111/121), Human Reproduction (110), Survey of Human Anatomy Bio (115), Introduction to Biotechnology (126)**

**UMASS/Lowell, Lowell MA, 2010-2013**

**Research Assistant**

Current research is focused on development of biosensors for biological molecules for clinical diagnosis. In particular research is centered on development of sensors created by carbon nanotubes functionalized with active biological ligands that can detect early onset of septicemia.

Manufacturing and analysis of polystyrene nanoparticles for drug delivery across the human blood brain barrier. Alzheimer's disease models used to study drug delivery and efficacy of nanoparticles with loaded medications.

Courses and Skills: Advanced Protein Chemistry, Skills with Biacore, SEM, and TEM.

Bio-Pharmaceutical GMP and Licensing; Skills with small scale and large scale production systems.

Biomedical Engineering aspects of small and large scale laboratory equipment.

## **Industrial Experience:**

### **Iuventis Technologies Inc. Lowell MA, 2009-Present**

**Founder/President**-Created product line encompassing tissue engineering techniques. Design and manufacturing of tissue scaffolds using unique biologically compatible polymers. Design and manufacturing of tissue specific bioreactors.

### **Immunotrex Biologics Corporation, Lowell MA, 2004-Present**

**Founder/President/CEO**-Lead collaborations with institutions in England, Sweden and India for novel anti-sense technologies targeting T-RNA against cancer. Developed new anti-shock therapeutic by designing peptide against LPS in the blood stream. Background of computer programs include: Bioinformatics, Mac plasmid, Microsoft Office 2007 and prior versions, Molecular Modeling, Sigma Plot and Cricket Graph III. Background in Calculus and Variable Mathematics, conceptual background in Mathematical models.

### **Harvard-MIT Health Sciences Institute, Cambridge MA, 2007-2009**

#### **Research Fellow- Project Leader**

Duties include leading a team of research assistants, graduate and undergraduate students to create bladder tissue from single smooth muscle cells arranged in linear patterns by the use of a tissue printer. Quantitative and Qualitative data analysis and extrapolation in writing scientific reports and journal articles for publication.

### **Boston Biomedical Research Institute, Watertown, MA, 2006- 2007**

#### **Research Fellow- Project Leader, President of Cardiovascular Research Group**

Duties include understanding the proteins that regulate smooth muscle contraction. In particular, Rho kinase (ROCK) and its regulatory pathways that leads to smooth muscle contraction within arteries. Extrapolation of scientific data in understanding disease pathways.

### **June 2000- December 2000**

Traveling eastern seaboard of the United States, and preparing to enroll in medical school January 2001.

### **NASA January, Houston, TX, 2000-May 2000**

#### **Research Fellow Clinical Immunology**

Study of signal conduction mechanisms in T-cells in zero gravity. Understanding mechanisms of T-cell failure in zero gravity and creating possible biological interventions.

### **National Institutes of Health: NIAID, Bethesda, MD, 1996-1999**

#### **Pre-Doctoral Research Fellow**

#### **Allergic Diseases Laboratory**

Projects included study of allergic asthma using animal models to understand mechanisms in early inflammation processes of lung tissue. In particular IL-4 mediated responses and Mastocytosis, the study of human mast cell leukemia.

## **Qualified Laboratory Skills and Methods:**

Cell & Molecular Biology techniques:

Cell culture (mammalian, insect) immunohistochemical staining, micro-slide preparation, cell counts by hemocytometer, plasmid cloning, and sub-cloning techniques.

ELISA, western blot, northern blot, 2D gel systems; agarose gels, DNA sequencing.

Microbiology techniques:

Scratch plate techniques, poring of agar plates, bacterial growth on specific agar plates, bacterial growth in broth for scale up production in sub-cloning techniques. bacterial slide preparation and staining techniques.

Characterization techniques:

Sample preparation and ability to use HPLC, SEM, TEM, Mass Spec.

Gas chromatography, NMR, and IR.

Animal Models:

Use of mouse and rat models in the study of asthma, colitis, Hypertension (HTN) and bioengineered bladder tissue. Knowledge and experience in writing protocols for animal model use in grants and Institutional Review Boards (IBR)

**Peer Reviewed Publications{Selected Publications}**

- 1) Synthesis of nanoparticle carriers for transport of oxygen  
**Syed Hasan**, Bhavna Gupta, Ted Germond, and Arthur Watterson  
Submitted March 30 2015 - American Chemical Society Boston Conference October 2015
- 2) MOSAIC 545™ - HUMAN MICROBIAL PATHOGEN IDENTIFICATION SYSTEM  
IMMUNOTREX BIOLOGICS INC. Shiva Subhashini Pakalapati, Alan Rux, **Syed K. Hasan\***  
Gordon Conferences -Biointerface Science Section May 20-25, 2012 Les Diablerets  
Conference Center; Les Diablerets, Switzerland
- 3) Amyloid Beta (AB) Nanoparticles Employed To Study Intracellular Tau Protein Interaction  
**Syed K. Hasan**, Garth F. Hall\* University of Massachusetts-Lowell, 1 University Ave.  
Lowell, MA 01854 International conference on Alzheimer's Disease July 16-21, 2011 Paris France
- 4) **Syed K. Hasan\***<sup>1</sup>, SangJun Moon\*<sup>1</sup>, Young S. Song<sup>1</sup>, Hasan Onur Keles<sup>1</sup>, Fahim Manzur<sup>1</sup>, Sohan Mikkilineni<sup>1</sup>, Jong Wook Hong<sup>4</sup>, Jiro Nagatomi<sup>3</sup>, Edward Haeggstrom<sup>5</sup>, Ali Khademhosseini<sup>2</sup>, Utkan Demirci<sup>1,2</sup>  
Layer by Layer 3D Tissue Epitaxy By Cell Laden Hydrogel Droplets J. Tissue Engineering **2008**
- 5) Song, S.Y., **Hasan S.**, Moon S.J. Demirci U. Cryopreservation of Blood Using Microfluidic Chips. 45th Annual Meeting of the Society for Cryobiology (**2008**)
- 6) Young S Song, Snajun Moon, Leon Hulli, **Syed K Hasan**, Emre Kayaalp, Utkan Demirci Microfluidics for Cryopreservation, Lab on a Chip 08/2009; 9(13):1874-81
- 7) F. Xu, A.E. Emre, E.S. Turali, **S.K. Hasan**, S. Moon, J. Nagatomi, A. Khademhosseini, U. Demirci  
Cell Proliferation in Bioprinted cell laden collagen droplets 09/2009
- 8) Toshio Kitazawa, Yang Hoon Huh, Terrance Woodsome, **Syed Hasan** Contractile responses ,signal transduction pathways and cell assembly in tissue-engineered vascular smooth muscle fibers. The FASEB Journal. 2007;21:484.7
- 9) Luccioli S, Brody DT, **Hasan S**, Keane-Myers A, Prussin C, Metcalfe DD. IgE(+), Kit(-), I-A/I-E(-) myeloid cells are the initial source of II-4 antigen challenge in a mouse model of allergic pulmonary inflammation. Journal of Clinical Allergy and Immunology 2002;10:117-124.
- 10) Ludviksson BR, Strober W, Nishikomori R, **Hasan SK**, Ehrhardt RO. Administration of mAb against Alpha E Beta 7 Prevents and Ameliorates Immunization-Induced Colitis in IL-2-/-Mice. Journal of Immunology 1999;162:4975-82.

11) K. Hartman, B. Ludviksson BR., **SK Hasan**, DD Metcalfe. Bcl-x Induced by C-Kit Stimulation In-Vitro. FASEB Letters 1996.

12) Nie B, **Hasan SK**, Greaves MD, Rotello VM. Reversible Covalent Attachment of C60 to an Functionalized Resin. Tetrahedron Letters 1995:36:21:3617-3618.

**Invited presentations** (e.g., visiting professorship, invited lecture, plenary presentation, seminar)

Bristol Community College Biotechnology Seminar Speaker-  
“How to create an Experimental Drug” March 2015

Radcliffe Institute for Advanced Study Harvard University- Seminar Frontiers of Tissue Engineering Nov 3rd 2006

Member MIT Enterprise Forum of Cambridge 2006-2007

The Role of Early IL-4 in the Development of Allergic Asthma Jackson Laboratory, Bar Harbor, ME 2006

34th Annual Northeast Bioengineering Conference (2008)

25th Annual HST-Poster Conference (2008)

Massachusetts General Hospital ORCD 3rd Annual Research Fellows Poster Celebration (2008)

Biomedical Engineering Society Conference (2008)

FSEB Conference (2008)

Turkish American Scientists and Scholars Association Annual Conference (2008)

IEEE Conference (2008)

American Chemical Society Poster Presentation (2010)

### **Professional Societies:**

Year	Society	Role
1997	Sigma Xi Research Honors Society	Member
2007	Empire's Who's Who Professional Society	Member
2006	American Chemical Society	Member
2010	Tau Beta Pi Honors Engineering Society	Member

### **Research and Clinical Contributions**

Past research experience has been with smooth muscle cells and collagen, especially focusing on the interactions and characteristics of these two entities. Investigated thus far have been signal transduction

pathways of Rho-A and Rho-E in their pathogenic involvement in hypertension and coronary artery disease. Studies have also included the physiological mechanisms that are necessary for contraction and relaxation of smooth muscle cells. Investigations into the impact of cytokines on smooth muscle function has led research toward more focused approaches in tissue engineering small arteries with smooth muscle cells and collagen. Eventually leading toward properly formed coherent tissues with structures that mimic those in human.

#### **Non-Peer Reviewed Publications/Patents**

**U.S. Patent No. 12/426,470 Methods for Microorganism Detection and Identification**

**Inventor: Syed K Hasan, Immunotrex Corp. 2014**

**U.S. Patent No. 60/913,201 Compositions and Methods for Treatment of Uncontrolled Cell Growth**

**Inventor: Syed K Hasan, Immunotrex Corp. 2014**

**U.S. Patent No. 0271/1866199 3D Generation of Organs**

**Inventor: Syed K Hasan, Immunotrex Corp. 2014**

#### **Post-Doctoral Grants under laboratory PI at stated institutions.**

**1: NIH NHLB R01 – Smooth muscle regeneration and physiological mechanisms –BBRI 2006-2007 (PI- Dr. Kitazawa)**

**2: NIH NHLB- Interdisciplinary Grant for Pharmaceuticals-Smooth Muscle Physiology BBRI 2006-2007 (PI- Dr. Kitazawa)**

**3: William Randolph Hearst Foundation- Harvard-MIT Health Sciences Institute 2008-2009 (PI- Dr. Dermici)**

**4: NIH R21 Grant- Harvard-MIT Health Sciences Institute 2008-2009 (PI- Dr. Dermici)**

#### **References:**

**1: Dr. Rizwan Manzer- Industrial Medical Scientist and Colleague.**

Rizwanmanzer@hotmail.com (617) 945-8044

**2: Dr. Arthur Watterson Prof. of Chemistry (Emeritus) UMass-Lowell:**

Arthur\_watterson@uml.edu

Telephone# (603) 438-3691

**3: Dr. Sougata Karmakar- Industrial Scientist and Colleague in Clinical Trials and**

**Regulatory Sciences: sougatak3@gmail.com Telephone# (508)-733-8127**