

# Graduate Seminar



## MI6 and Q-Branch: A Playful Introduction to Operations Management (OM)

**Sridhar Tayur**

**Ford Distinguished Research Chair and  
Professor of Operations Management  
Tepper School of Business  
Carnegie Mellon University**

**Thursday, September 14th      4:30 PM      Scaife Hall 125**

### ECE Seminar Committee

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### Abstract:

Many of us aspire to *simultaneously* pursue these four goals in our professional lives: (1) publish innovative research (2) develop useful teaching materials (3) create economic value in a capitalist system and (4) improve social welfare in our society. I would like to take the occasion of this talk to introduce the vibrant and versatile field of OM by discussing six of my interests ("MI6") and by highlighting seven startups.

1. **Math:** From Algebraic Geometry to Queuing Games, from Rapidly Mixing Markov Chains to Infinitesimal Perturbation Analysis, from Computational Mathematical Programming to Machine Learning, and more, from our quantitative arsenal ("Q-Branch").
2. **Money:** Software entrepreneurship in the 21<sup>st</sup> century has offered us -- algorithmic experts -- an unprecedented path to prosperity. I will briefly discuss my software company *SmartOps* (acquired by SAP).
3. **Merriment:** What's the point of doing math, making money, improving and saving lives etc if you cannot also be cheerful? I will discuss two startups, one in video game advertising (*Massive Incorporated*, acquired by Microsoft) and one in on-line fashion rental (*Rent-the-Runway*).
4. **Matching:** Continuing on our merry path, I will discuss more 2-sided platforms, one that matches Yoga (and fitness) studios with millennial consumers (*Zenrez*). Turning a bit serious, I will discuss *VocalID* that is bringing voice to the voiceless.
5. **Mortality:** Stepping up on being serious. Using *OrganJet*, my social enterprise, as an anchor I will discuss how to make organ transplantation in the US more fairly accessible while also increasing supply of organs (using "Nudge" video) and reducing unnecessary organ discards.
6. **Moonshots:** Everyone should have at least one to contribute towards. I will discuss a startup (*MITRA Biotech*) in the area of personalized cancer therapy.

### Bio:

Sridhar Tayur is the Ford Distinguished Research Chair and Professor of Operations Management at Carnegie Mellon University's Tepper School of Business. He received his Ph.D. in Operations Research and Industrial Engineering from Cornell University and his undergraduate degree in Mechanical Engineering from the Indian Institute of Technology at Madras. He is an INFORMS Fellow, a Distinguished Fellow of MSOM Society and has been elected to the National Academy of Engineering. He has been a visiting professor at Cornell, MIT and Stanford.

He is the founder (and served as CEO) of the software company SmartOps [acquired by SAP] and is the founder of a social enterprise, OrganJet. SmartOps is the subject of a Darden Case Study (distributed by HBS) and OrganJet of a HBS Case Study.

He has published in Operations Research, Management Science, Mathematics of Operations Research, Mathematical Programming, Stochastic Models, Queuing Systems, Transportation Science, POMS, IIE Transactions, NRLQ, Journal of Algorithms and MSOM Journal, is co---editor of Quantitative Models for Supply Chain Management, and has served on the editorial boards of Operations Research, MSOM Journal, Management Science and POMS. He served as President of MSOM Society. He has been a finalist for the Lanchester Prize and the Edelman Prize. He won the Healthcare Best paper Award by POMS and the INFORMS Pierskalla Award. He has won the Gerald L. Thompson Teaching Award in the B.S. Business Administration Program, the George Leland Bach Excellence in Teaching Award given by MBA students, the INFORMS Teaching Case award, and has been named as a 'Top Professor' by Business Week. He has won the Carnegie Science Center award for Innovation in Information Technology.

His work on Organ Transplantation has been covered by several media outlets, including The New England Journal of Medicine, Forbes, The Guardian, CBS News as well as in an article profiling him in The Atlantic, has attracted the attention of several luminaries including Nobel winner Alvin Roth and an invitation to the White House Summit on Organ Donation.

He served on the advisory board of CCG Inc. and TrueSpark, is on the advisory boards of MITRA Biotech, Zenrez and Vocal ID, on the Board of Directors of Orchestro and Transplant Interface and on the Board of Overseers at WGBH.

In 2014, he made a \$1 Million donation to Carnegie Mellon University and in 2016 endowed an Institute Chair at IIT-Madras.

**SEMINAR NOTES: (REFRESHMENTS SERVED AT 4 PM)**