Hemant Pendharkar
E-mail: pendharkar@alumni.unh.edu

EDUCATION

- **Ph.D**. Mathematics, University of New Hampshire, July'99: **Dissertation**: *Central Sequences and C* algebras*
- **M.S**.(UNH) Mathematics, **M.Sc. Mathematics, B.Sc**. Math & Computer Programming (University of Bombay)

Research Interests: *Operator Algebras, Theoretical Physics, Data Mining and Algorithms, Cryptographic Protocols, Pedagogy*

ADMINISTRATION: Academic Affairs, Student Affairs, and Information Technology

- **Associate Chair (**12/20/2019-**) and Coordinator** (12/20/2018-) **Mathematics program, USF, St.** Petersburg
- **University-wide Chair, Liberal Arts and Sciences (Gen Ed) Program:** Worcester State University 2011-13
- **Vice President for Academic Affairs:** Governor's School for Science and Mathematics, 2007-09
- **Associate Vice President Student Affairs Fellow:** Worcester State University, 2006-07
- **IT-Administrator**: Department of Mathematics, University of New Hampshire, 1996-98

ADMINISTRATION: Faculty Affairs/Labor Relation/contract interpretation and enforcement/conflict resolution

- **Elected Chair-Statewide Grievance committee,** MSCA - MA State University System: 2014-16, 2016-18 terms (, reelected2018-20 – but left the system)
- **Grievance Officer:** Worcester State University, 2011-18

POST TENURE REVIEW: Worcester State University
Rated Exemplary in every area with full 6% Raise to the base during each of the two reviews: 2012-13 and 2018-19 (Two PTRs)

POSITIONS: Academic

- **Professor (with tenure), University of South Florida, St Petersburg, 12/20/2018-**
- **Professor (CS/MA):** Worcester State University, from 9/2012; (joined: Assistant Professor: 2002; Tenured/Promoted: 2005)
- **Visiting Professor:** Israel Academic College/Clark Univ. COPACE, Israel; summer 2009. 2010, 2011
- **Professor** (part time): Clark University, http://aleph0.clarku.edu/faculty/faculty.php, 9/2004-12/2018
- **Assistant Professor:** Elizabeth City State University; 08/1999-12/2001
- **Instructor**: Master of Science in Mathematics for Teachers, UNH: Summer of 1996-99, 2002-03

POSITIONS: Honorary

- **Professor Emeritus: Worcester State University, 08/24/2019 -**
- **Honorary Adjunct Professor:** Computer Sc. & Eng., University of South Carolina, Columbia, 2008-10

POSITIONS: Research and Corporate training

- **Office of Naval Research SENIOR Faculty Fellow,** SPAWAR Atlantic Center, Joint Base-Charleston, SC, Summer 2017
- **Office of Naval Research Faculty Fellow,** SPAWAR Atlantic Center, Joint Base-Charleston, SC, Summer 2016, 2018
- **Hanover Insurance Training**: Invited to carry out Analysis and training for migration to JAVA platform, Spring 2013
- **AT&T Research (**formerly, **The BELL LABs) Labs**, **(Research)** Statistics & Visualization, Spring-Summer 2009
- **Research Assistant**: Department of Mathematics, University of New Hampshire, Summers 1995-99

RESEARCH: (journal and conference articles – Mathematics, Computer Science, Physics, And Engineering)

- "*Central Sequences in Subhomogeneous Unital C* algebras*" Bull. Aust. Math. Soc. Vol. 103, Issue 2, pp. 318 – 325, 2021
- *"Techniques for minimizing area and power in test pattern generations",* w/ Kakade, et., al, ©2017 IEEE, pp 429-433, 2017
- *"An experimental investigation into the practical performance of lattice reduction algorithm on ideal lattices"* w/ Batson, et., al, SIAM Conference on Computational Science and Engineering, presentation, Atlanta – 2017
- *"Suitability of Lattices for Project Based Introduction to Cryptography", with Batson,* et., al, Joint Mathematics Meeting, special section on Cryptology and cryptography, 2017
- *"On the Implementation of a Discrete Mathematics Course",* Inroads, with SIGCSE sub-committee - 2007
- *"Frequent pattern mining with preferences – Utility functions approach"*, w/ E. Braynova,, LNAI 3488, pp 364-372, 2005
- *"Preference based frequent pattern mining – From base preferences to combined preferences",* IPSI-MIT conference proceedings, w/ E Braynova, 2005
- "*Wormhole generated physical universe*", w/ L. Choudhury, Hadronic J. Vol. 24, issue 4, pp 275-290, 2001
- "*Derivations of Certain Operator Algebras*", w/ J. Li, International Journal of Mathematics, Vol. 24, pp 345-351, 2000

RESEARCH/Externally Funded Projects: (NSF, ONR, NASA, Department of Education, DOD–ARO, College Board)

- NASA/TEAMS grant for the Governor's School for Science and Math, Robotics Team: $6000.00 (PI), 2008-09
- **NSF**: "*GIS in curriculum*", an **inter-disciplinary** grant, 2006-08, $134,000 (co-PI)
- **WSU-mini grant**: "*Conjuncto-Experimental"*, critical thinking project for high school minority students, 2006-07, (Co PI)
- **WSU-mini-grant:** to develop **Parallel processing cluster/course development**, 2004-05, $3000 (PI)
- **DOD-Army Research Office:** "*Instrumentation grant, Elizabeth City State University*"; 09/2001 to 08/2002, $198,000 (PI)
- **NASA Glenn Research Center:** "*Air Traffic Analysis- extension"*, an **unsolicited grant**, 08/2001 to 08/02, $5,000 (PI)
- **NASA Glenn Research Center**: "*Air Traffic Analysis"*, an **unsolicited grant**, 02/2000 to 08/01, $35,000 (PI)
- **ONR**: "*Duck 94*", Analysis of Oceanographic data, joint project with Army Corps of Engineers, Duck, NC, 09/99–12/2000
- **NASA Glenn Research Center**: "*Controlling Chaos in Josephson Junction*", funded by 1999 – 2001 (Co PI)
- **Office of Naval Research**: "*Nurturing ECSU Research Talent*", 09/1999 – 12/2000 (Faculty Participant)
- **Department of Education-** D. Eisenhower Grant: "***D****eveloping* ***R****ich and* ***E****ngaging* ***A****ctivities in* ***M****athematics* ***(DREAM)***", at the University of New Hampshire 1998-99 (Graduate Student participant – involvement from writing to execution)

Hemant Pendharkar
E-mail: pendharkar@alumni.unh.edu

RESEARCH: Presentations (Conferences/Invited Lectures (Mathematics, Physics, and Computer Science)

- *"Suitability of Lattices for Project Based Introduction to Cryptography", with Batson,* et., al, Joint Math Meeting 1/2017
- Invited Lectures: *Borel Structure for Econometrics,* Department of Economics, University of Bombay, 8/2013
- Invited Lecture on *Cyber Security*, Constituent Colleges, University of Bombay, India 8/2013
- Invited Lecture on *Cyber Security and Data Mining*, Constituent Colleges-University of Nagpur, India, 8/2013
- Invited organizer and presenter: *Faculty Leadership Institute on C and Data Structures* at Jawaharlal Nehru Technological University, INDIA, for the **Indo-US Collaboration for Engineering Education (IUCEE)**, 2011
- "*Frequent Pattern mining with Preferences – Utility Functions Approach*", with E Braynova, International Conference on Intelligent Systems, Saratoga Springs, NY, May 05
- "*Frequent Pattern Mining with Preferences-From Base Preferences to Combined Preferences*", with E Braynova, IPSI-2005 MIT-Cambridge an international inter-disciplinary Conference, July 05
- "*Math techniques in Computer Science*", invited speaker at the Math-Computer Science club, WSU April, 03
- "*Wormhole generated physical universe*", at the American Physical Society meeting, Charlottesville, NC, 2001
- "*Program design using mathematical tools*", invited lecture at the Summer workshop for High School Students at the Center for Science and Scientific Visualization, ECSU, June 01
- "*Central sequences and C*-algebras*", invited lecture at ECSU-CSV, October 01
- "*Derivations of certain operator algebras*", at the Great Plains Operator Theory Symposium (GPOTS) May 98
- "*Derivations of Triangular operator algebras*", at the Northeastern section of the MAA, Keene, NH, June 98
- *"Integrating Calculus, Geometry and Linear Algebra*", Invited lecture: PME chapter of the UNH, Spring 97
- *"Geometry of Normalization"*, Department of Math, UNH (PhD minor in Algebraic Geometry) Spring 97

RESEARCH: Undergraduate student research mentoring

- *"Cloud Computing",* CCSCNE-2013, Student research publication, JCSC pp. 30, April 2013
- *"Multiple search techniques",* student research project presented at the Central Plains Conference, University of Central Missouri; **Third place: Best student research award:** April 2011
- *"Securing the VOIP",* CCSCNE, 2011, Student research publication, JCSC sup - pp. 1, April 2011
- *"Multi-Platform Video Game Engine",* Student research project presented at the Eastern regional conference at Mary Washington University; **First Place**: **Best Student Research Award**; JCSC pp. 55, Vol. 22, issue 3, 2007
- "*Primes, Algorithms and Applications*", 50th MAA-NE Sectional meeting, at the UNH, 2005
- "*Analysis of Difference of Primes*", poster presentation, CCSCNE conference, JCSC pp. 2005

SERVICE: Editorial and Advisory Assignments/Conference Board/committee memberships

- **Chair**, **Board of Trustees, Spirit of Knowledge Charter School**, Worcester, MA, to June 2011
- **Member** of the Scientific Committee: International Conference of Mathematical Sciences, Turkey, 2009
- **Board member** and **Secretary** of the Consortium for Computing in Colleges, South Eastern section, 2007-09
- **Board member** of the Consortium for Computing in Colleges, North Eastern section, 2006 to 2014
- **Editorial board member and reviewer** for Scientific Journals International, 2005 to present
- **Associate Editor and reviewer**, International Journal of Applied Math and Statistics, 2005 to 2007
- **Invited member** of the **Engineering Advisory Team** of the **Massachusetts Biomedical Initiative** 2003 - 06
- **Best Paper award Committee**, CCSCNE conference 2005, 2006, 2007
- **Contributing Editor and Paper's Chair** and reviewer, Journal of Computing Sciences in Colleges, 2003
- **Programming contest judge**, Student Poster session judge, CCSCNE 2002

SERVICE: Shared Governance (in Collective Bargaining Framework

- Member, **Student Affairs Committee**, WSU, 2006-07, 2015-16
- Elected officer **(Secretary) of the MSCA Worcester Chapter,** 2010-16
- Elected member, University Wide **Tenure Committee**, Worcester State University, 2009-2011
- Chair**,** Computer Science Peer Evaluation 2005-07, Member/Chair, Department of Math Peer Evaluation 2005-07, 2013-14
- Member, Worcester State University Vice President for Academic Affairs Search Committee, 2006-07
- Chair**, core curriculum** reform sub-committee on **Quantitative Reasoning** requirement, 2005-06.
- Mentor to a new tenure-track faculty in Worcester State College Computer Science department, 2003-04
- Liaison, **Department of CS and Information Technology**: Responsible for representing the department to IT-2002-2010
- Member, inter-disciplinary concentration in **Bio-Informatics committee,** 2002-05
- Member, WSU **President's Strategic Planning Committee on Retention,** 2003-05
- Member, College-wide **Scholarship Committee**: 2005, 2006 and 2011
- Member, Elizabeth City State University, University-wide SACS Committee on Standards, 1999 - 01
- Member, Elizabeth City State University – Information Technology Council, 1999-01
- Member, Elizabeth City State University Department of Math and CS Curriculum Committee, 1999-00
- Member of the Comprehensive Examinations committee, MS for Teachers of Math Program, UNH, 1996-1998

SERVICE: Significant contributions to the department and college infrastructure

- Carried out the **Computer Science Program Review**, 2006-07
- First **Networked UNIX** lab at Worcester State University and established the **CS-Demilitarized Zone** 2002-03
- Built a **parallel computing cluster** that is available for research, teaching at Worcester State University, 2004-05
- Built the **UNIX research lab** at ECSU using my grant from the DOD, Army Research Office, 2000-01

Hemant Pendharkar
E-mail: pendharkar@alumni.unh.edu

TEACHING: Graduate

	Mathematics	Computer Science	Statistics	Management	Core Curriculum
Graduate	Algebra I Algebra II Analysis I Analysis II Discrete Math for Teachers			Information Technology – a Core course in MS in Management program	

TEACHING: Undergraduate, non-credit and high school

Undergraduate	Survey of Math College Algebra Pre-Calculus Honors Calculus II Calculus I Calculus II Calculus III Number Theory Differential Equations Discrete Math I Discrete Math II Linear Algebra Abstract Algebra	Introduction to Comp Sc CS I with C++ / JAVA CS II with C++ / JAVA Data Structures Automata Theory Unix Syst. Programming Operating Systems Sys/Net Administration Computer Architecture Data-Comm & Network Prog. In C under Unix Scientific Programming Assembly Programming Networking & Security	Probability and Statistics Environmental Statistics Intro to Statistics	Micro-Computer Application in Business	Computers in Society (Urban Studies Dept.) Freshman Orientation Seminar
Non Credit Courses		Survey of Op. Systems System Administration Network Administration Shell Programming Large Storage Admin (Developed with EMC)			
High School	Abstract Algebra (Yes!)				
Middle School	Problem Solving skills for mathematics competitions				

TEACHING: Invited seminars, lectures and semester long courses overseas

Teach Overseas Semester Courses/ Workshops/ Seminars	**Borel Structures** and related Math background for Graduate Students, Bombay University Economics Department **Cyber-Security** Nagpur University constituent colleges-India Bombay University constituent colleges-India	Data Communication & Networking (Tel Aviv, Israel) Faculty Leadership Institute C-Data Structures (2011) INDIA 10 Lecture Webinar Course on C and Data Structures for IUCEE (2012) INDIA		Systems Analysis and Design (Tel Aviv, Israel) Human Resource Development (Tel Aviv, Israel)	

TEACHING: (Internship supervision) Networked with the local industry and generated 22 **Industry Internships.** 01/2002– Internship coordinator for Computer Science department. I supervised these internships.

TEACHING: New Courses Developed

- UNIX Systems Programming – CS282, a Required course in CS curriculum
- One-credit equivalent of Linear Algebra content in the existing Discrete Math II, a required course in CS
- System and Network Administration, a new elective course
- Systems Programming - CS380, revamped the course with relevant content
- Computers in Society – UR191, new Freshman Orientation course for the department of Urban Studies
- Perl Programming, new elective course in Computer Science

Hemant Pendharkar
E-mail: pendharkar@alumni.unh.edu

Business and Industry Experience: Pendharkar Engineering Pvt. Ltd & Pendharkar Consultancy (Metal Finishing) – 1984-94

System and Network Administration and IT Management

My experience is at the management level. I also have extensive hands-on experience as well as the academic experience having developed and offered a five-course certificate course in system and network administration.

- I was the IT-Administrator for the Department of Mathematics and Statistics, University of New Hampshire. 1996-98. My responsibilities included but not limited to, managing the UNIX server and several UNIX and Windows clients, managing user accounts, managing software and license issues, managing the web server, backups, writing scripts as needed, enabling file server for Windows clients, and routine system install/upgrade.
- At Worcester State University, I created the Demilitarized zone for Computer Science and managed the CS intranet for five years. I was responsible for preparing budgets and supervising the lab-instructors

HONORS AND AWARDS (Fellowship, Academic Merit Scholarship, Athletic Scholarship, Travel Grants)

- **Alden Teaching Fellowship,** member of the first teaching fellows cohort, WSU 2006-07
- **Faculty Excellence in Scholarship and Research Award,** Worcester State University, 2006
- **Teacher of the year Award Nominee and finalist**, Worcester State University, Academic year 2005-06
- **Merit Bonus Award:** Worcester State University, Academic year 2002-03
- **Appreciation Award:** Worcester State University: Advisor to the ACM Student Chapter, 2003-04
- **Educators Grant:** *Special Interest Group on Computer Science Education*, Charlotte, NC, 2002
- **Educators Grant:** *Special Interest Group on Computer Science Education*, Austin TX, 2001
- **Travel Grant from ACM:** *Programming Languages* (PLDI2001) Conference in Snowbird, Utah, 06/2001
- **Travel Grant from ACM:** *Programming Languages* (PLDI2000) Conference in Vancouver, Canada, 06/2000
- **Mathematical Sciences Research Institute, Berkeley Scholarship:** Summer 2000: *Operator Algebras program*
- **Dissertation Fellowship**: (One among fifteen recipients) University of New Hampshire, 1998-99
- **Travel Grant** to attend the *International Conference on Operator Algebras* in Shanghai, China, July, 1997
- **Travel Grant (National Board for Higher Mathematics, INDIA):** to attend the *International Conference on Operator Algebras* in Chennai, India, January, 1997
- **Merit Scholarship** (tuition): Department of Mathematics, University of Bombay, 1992-93 and 1993-94
- **Athletic Scholarship** (tuition): University of Bombay, 1984-85; winner of the **Gold Medal**, Bombay University **Boxing Championship**, (selected to and) Represented the University at the **National Boxing Championship.**

DEPARTMENT OF DEFENCE SECURITY CLEARANCE LEVEL: *SECRET*