About the Contributors

**Joanna Leng** has worked in many areas of Computational Science and Engineering including visualization, eScience, and high performance computing (HPC) for both research purposes and service provision. Her primary concern is in improving the use of computers for research purposes. This has led her to develop a strong interest in the innovation and adoption of computing practices and technologies.

**Wes Sharrock** has been at the University of Manchester since 1965. He has been Assistant Lecturer, Lecturer, Senior Lecturer, Reader, and Professor in Sociology there. His main interests are in the philosophy of social science, philosophy of mind, sociological theory, studies of work and science, and ethnomethodology. Current researches are into the organisation of work in constructing online ontologies in bioinformatics. He currently supervises 5 PhD students and has supervised over fifty successful PhDs. Among recent and forthcoming publications are: Ethnomethodology at Work, edited by M. Rouncefield and P. Tolmie, Ashgate 2011 (co-authored introduction and conclusion, authored chapter on division of labour); Studies of Work and the Workplace in HCI: Concepts and Techniques (2009) with G. Button, Morgan Claypool; There is No Such Thing as Social Science (2008) with P. Hutchinson and R. Read, Ashgate 2008.

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**R. Badlishah Ahmad** obtained BEng in Electrical & Electronic Engineering from Glasgow University in 1994. He obtained his MSc and PhD in 1995 and 2000, respectively from University of Strathclyde, UK. His research interests are on computer and telecommunication network modelling using discrete event simulators, optical networking & coding, and embedded system based on GNU/Linux for vision. He has five (5) years teaching experience in Universiti Sains Malaysia. From 2004 until now he is working with Universiti Malaysia Perlis (UniMAP), currently as the Dean at the School of Computer and Communication Engineering and Head of Embedded Computing Research Cluster.

**Akos Balasko** is working as a Research Fellow at the Laboratory of Parallel and Distributed Systems at the Computer and Automation Research Institute of the Hungarian Academy of Sciences since 2006, where he is a developer team member of the P-GRADE and WS-PGRADE Portals. He received MSc degree at Eötvös Loránt University of Sciences in 2007 as a Software Engineer Mathematician. The main part of his profile is grid user and research community support as a member of the Grid Application Support Center (GASUC). He has been involved in several European Grid projects such as SEE-GRID II, SEE-GRID-SCI, EGEE II, and EGEE III. He is recently working in the SHIWA and EGI Grid
About the Contributors

Prashobh Balasundaram is a software engineer/HPC specialist with IBM Dublin software laboratories. His specialization is in performance optimization of highly parallel numerical computing codes on massively parallel supercomputers. Prior to IBM Dublin Software Labs, Prashobh worked as a Technical Architect focusing on the data warehousing and business intelligence area. His primary focus was on business intelligence platforms using big data on parallel platforms. Prashobh completed his Master’s in High Performance Computing from Edinburgh Parallel Computing and holds a BTech in Electronics from Cochin University of Science and Technology.

Iain Barrass is a Computational Epidemiologist in the Emergency Response Department of the United Kingdom’s Health Protection Agency, which provides evidence-based risk assessments to the Department of Health and related agencies and departments. He has particular responsibility for the development of a high performance computing capability and a computationally efficient toolbox of simulation-based models that assist the response and planning for emerging and re-emerging infections, including those posed by bioterrorism. His interests include the analysis, understanding and visualization of spatially explicit models combining realistic demographic, infection, and behavioural processes, focusing on public health countermeasures to inform contingency plans ahead of time.

Domingo Benitez graduated from the University of La Laguna (Spain) in 1987 with a BS in Physics. In 1987, Benitez joined the faculty of University of Las Palmas de Gran Canaria (ULPGC). In 1994, after one year as pre-doctoral fellow at the Spanish Microelectronics Centre in Barcelona, he earned a PhD in Computer Science and Engineering from ULPGC. Benitez was promoted to Associate Professor with tenure in 1997. After some post-doctoral work at the University Autonoma of Barcelona, Benitez became a Full Professor in 2003. Benitez’s research interests include customizable computing, high-performance computer architectures, and performance evaluation. He is a specialist in customizable and adaptive systems applied to computer science and engineering. Benitez’s teaching at ULPGC and other Spanish universities reflects his multiple areas of expertise. He has taught courses on design and evaluation of high-performance and embedded computer architectures.

Marco Evangelos Biancolini studied at the University of Rome “Tor Vergata.” He graduated in Mechanical Engineering with first class honours in 1997, Doctor’s degree in Mechanical System Design in 2001. He has been a full time Researcher in the Department of Mechanical Engineering since 2000, lecturer in Machine Design since 2002. He was Scientific Coordinator of TVK (Tor Vergata Karting), a working group dedicated to motorsports since 2002. He has professional experience in aerospace structural design, machine design, Formula 1 car aerodynamics. He was Faculty advisor of the Formula SAE team since 2006, awarded for the Most Advanced Approach using integrated and combined simulation methods at the European Automotive Simulation Conference (EASC 2009) for the presentation “Industrial Application Of The Meshless Morpher RBF Morph To A Motorbike Windshield Optimisation.”

Shawn Chin is a Chartered IT Professional with many years experience in software engineering, high performance computing, system administration, and systems integration. He is versed in modern
software engineering techniques including test-driven development and continuous integration, and has experience in a wide range of programming languages and styles. He is currently part of the Software Engineering Group at the Rutherford Appleton Laboratory where he works on HPC software development and provides software engineering support to the computational science community. When not glued to the computer he is often found in the kitchen trying out a new recipe or, during fair weather, out on the course attempting to play golf.

**Fumie Costen**, from 1993 to 1997, was with Advanced Telecommunication Research International, Kyoto, Japan, where her domain of interest was Direction-Of-Arrival estimation based on MUSIC algorithm for three-dimensional laser microvision. She received an ATR Excellence in Research Award in 1996, an academic invitation at Kiruna Division, Swedish Institute of Space Physics, Sweden in 1996 and gained three patents in 1999 from the work. From 1998 to 2000, she was with Manchester Computing in the University of Manchester, U.K., where she engaged in the research on metacomputing. She received a best paper award from 8th International Conference on High Performance Computing and Networking Europe in 2000. Since 2000, she has been a Lecturer in the University of Manchester, U.K. Her main field of interest is the computational electromagnetics in such topics as finite difference time domain method for low frequency and high spatial resolution and FDTD subgridding.

**Christopher T.J. Dodson**, from 2002-present, was Emeritus Professor of Mathematics, University of Manchester, UK. From 1996-2002, he was Professor of Mathematics, Department of Mathematics, University of Manchester Institute of Science and Technology, UK. From 1989-96, he was NSERC Abitibi-Price Senior Research Chair, University of Toronto, Canada. From 1969-89 he was with the Department of Mathematics, Lancaster University, UK. His research interests include: differential geometry, global analysis, stochastic geometry and applications to spacetime structure, and stochastic processes and information systems.

**Peter Falkingham** graduated from the University of Bristol, UK with a BSc in Biology and Geology (joint honours) in 2003, and the following year with an MSc in Computer Science, before completing his PhD - “Computer simulation of dinosaur tracks” at the University of Manchester in 2010. He has since been working at a post-doctoral level at the University of Manchester, expanding his research to include further computational modelling of dinosaur track formation, dinosaur biomechanics, and 3D digitisation techniques in palaeontology.

**Rob Farber** is recognized for his work in High Performance Computing (HPC), machine learning, complex dynamical systems, and high energy physics. He co-founded two companies that achieved liquidity events, has over 80 publications in peer-reviewed journals and other media, and is an invited speaker both nationally and internationally. Rob started his research career after leaving the first computer company he co-founded to become the then youngest staff scientist in the Theoretical Division at Los Alamos National Laboratory. He also held a concurrent position as a member of the external faculty at the Santa Fe Institute. Rob returned to the commercial arena by co-founding a computational drug discovery company. After leaving LANL, he continued working commercially until returning to research
Farid Ghani obtained BSc in Electrical Engineering and MSc in Measurement and Control from Aligarh Muslim University (AMU) India, in 1964 and 1966, respectively. He obtained MSc in Digital Signal Processing in 1972 and PhD in Digital Communication Systems in 1974 from Loughborough University of Technology (UK). Professor Ghani is currently working as Professor in the School of Computer and Communication Engineering, Universiti Perlis Malaysia. He has an experience of more than thirty five years of teaching, in the areas of digital and analog communication systems, signal processing, control systems and computer engineering.

Ivan Girotto works as a Computational Scientist for the Irish Centre for High-End Computing (ICHEC). He studied for his Master Degree in Computer Science at the Ferrara University in Italy. From there he joined the Supercomputing Group of CINECA and mainly worked in HPC user support and program development among both industry and academia. During this time he was also involved DEISA Extreme Computing Initiative (DECI) for porting and optimisation of scientific codes at the largest HPC centres in Europe e.g. CSC, SARA, BSC, JUELICH, et cetera, on hardware from a variety of vendors IBM, NEC, SGI, CRAY, et cetera. He is currently involved in assisting Irish research activities with focus on GPGPU computing as member of the ICHEC GPGPU developer team and leader of sub-task “Accelerator” within the PRACE project.

Chris Greenough is Head of the Software Engineering Group at the STFC Rutherford Appleton Laboratory and visiting Professor at Manchester Metropolitan University. Trained as a mathematician he has been writing computational software and managing software projects throughout his 25 year scientific career. The application areas and target systems have been diverse – from weather forecasting to financial modelling and from PCs to high performance petaflop super-computers. His interest in how application scientists can develop good quality software and how computer science can provide appropriate tools has underpinned many of these activities. An understanding of the dynamic nature of research software development leads to different approaches from those adopted in software houses. In recent years he has been part of the Software Engineering Support Programme (SESP) which has tried to equip software developers in research projects with methods and tools that will enable future software to be both high quality and sustainable.

David Groep is Senior Research Scientist in Grid Computing at Nikhef, the Dutch national institute for sub-atomic physics, and has worked on multi-domain security services and scaling behaviour of operational e-Infrastructures. He established the certification authority for e-Science in the Netherlands and was architect of the site access control middleware in EU DataGrid and gLite. Since the founding in 2004 of the EUGridPMA, he has been its Chair, and following the establishment of the International Grid Trust Federation, IGTF, became its first Chair. From 2007 onwards he served a three-year term as Area Director for security in the Open Grid Forum. He is the liaison for identity management policy to the European Grid Infrastructure. Outside the security area, Dr. Groep is also member of the executive of BiG Grid, the Dutch national e-Infrastructure, and was manager of the Scaling and Validation programme in the Virtual Laboratory for e-Science project.
Marc Hafner obtained his PhD in Computational Systems Biology at the Ecole Polytechnique Fédérale de Lausanne (EPFL) in 2010 studying the robustness of biochemical networks under the supervision of Prof. Martin Hasler and Dr. Heinz Koeppl. His work includes the development of an innovative robustness analysis method and its application to oscillatory systems with an emphasis on the effect of feedback loops. He also considered design principles linked to robustness in the context of synthetic biology in a collaborative work with Prof. Ron Weiss at MIT. Marc Hafner is now Postdoctoral Associate in the BISON Group from Prof. Heinz Koeppl.

Daniel Hook works as a software engineer, computer scientist, and applied physicist for Engineering Seismology Group Solutions (ESG) Canada. Much of his current work focuses on the development of signal processing and data analysis algorithms, but he also spends time on code refactoring and program testing activities. Dan has a M.Sc. in computing, and a B.Sc.E. in engineering physics, both from Queen’s University. His Master’s thesis involved the use of mutation testing to study faults in scientific software. Dan’s research interests include scientific software testing as well as the overlap of computer science, philosophy, and physics.

Mark James is the Operations Manager for the Cyberinfrastructure team at the University of California, San Diego that is part of the Ocean Observatory Initiative, a National Science Foundation project for shaping the future of ocean science and technology. Previous positions held by Mr. James include: Operations Manager, Research and Biological Systems at the University of California, San Diego, California; Project Manager for the Biomedical Informatics Research Network (BIRN) Coordinating Center at the University of California, San Diego, California; Project Manager, Stellcom, San Diego, California; Vice President of Software Development, ALLTEL Corporation, San Diego, California; Director of Consulting Services, Litton Enterprise Solutions, Woodland Hills, California; Associate Director, COMEX Project at the University of Southern California, Los Angeles, California. Mr. James has a Bachelor of Science in Computer Sciences from The Pennsylvania State University, and a Master in Public Administration from the University of Southern California.

Woo Bong Je obtained his Master’s degree in Civil and Environmental Engineering from the University of Ulsan (UOU), South Korea. His main research interests are: operation of municipal wastewater treatment plants, biological nutrient removal processes, data collection and analysis, chemical kinetics and environmental inventory management.

Jens Jensen received his PhD from the University of Aarhus, in mathematics. He has done research in mathematics, quantum information theory, quantum cryptography, large scale data management, infrastructure management, identity management (particularly PKI, notably the IGTF soapbox lecture series), and more. He currently works for the Science and Technology Facilities Council (STFC), one of seven UK research councils. He is the current Area Director for security in the Open Grid Forum (OGF), and a member of the OGF standards council. He leads the storage and data management group in GridPP, the UK grid for particle physics, is CA manager of the UK e-Science CA, works for the UK national grid service (NGS), and also works as IT Project Manager and Security Advisor for various projects. His interests include understanding everything from first principles.
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Gabriele Jost obtained her Doctorate in Applied Mathematics from the University of Gottingen, Germany. Her background comprises a combination of industrial and academic experience in HPC. She has worked for various vendors of high performance parallel computers in the areas of vectorization, parallelization, performance analysis, and optimization of scientific and engineering applications. In 1998 she joined the NASA Ames Research Center in Moffett Field, California, as a Research Scientist. There, her work focused on evaluating and enhancing tools for parallel program development and investigating the usefulness of different parallel programming paradigms. Later she worked as a staff engineer at Sun Microsystems in the Compiler Performance Engineering team and at Oracle as Principal Software Engineer analyzing and optimizing application server software. She then joined the Texas Advanced Computing Center and works remotely from Monterey, CA on performance analysis and optimization of applications running on the TeraGrid. Her current research interests are programming paradigms, languages, and compiler technology for exascale computing. She has co-authored a book on OpenMP programming and published conference papers and journal articles.

Diane Kelly is an Associate Professor at the Royal Military College of Canada (RMC). She has a BSc (Honours) in Pure Mathematics from the University of Toronto and a PhD in Software Engineering from RMC. Her research interests are informed by over twenty years of software development experience in the Canadian nuclear industry. This experience, combined with subsequent academic research, has resulted in the identification of unique characteristics of the development environment for computational software. Diane’s research focuses on practices and approaches that are proven to aid scientists and engineers develop and maintain high quality computational software.

Sung Joo Kim has a Master’s degree in Civil and Environmental Engineering from University of Ulsan (UOU), South Korea. During his thesis, he was actively involved in setting up a pilot-scale SBR unit for saline wastewater treatment. His research interests include: biological nutrient removal processes, design of pilot- and industrial scale wastewater treatment plants, mathematical modeling, and statistical analysis.

Alice Koniges is a Physicist and Computer Scientist at Lawrence Berkeley National Laboratory. She is currently head of the Petascale Initiative in Computational Science and Engineering, which focuses on improving high performance computing applications through programming models, algorithm development, and code optimization. She also leads an exascale co-design effort focused on applications. Previous to the Berkeley Lab, she held various positions at the Lawrence Livermore Laboratory, including management of institutional computing. She also led the effort to develop the ALE-AMR code, used for modeling hot plasmas and cold solid fragmentation. She was the first woman to receive a PhD in Applied and Computational Mathematics at Princeton University and also has MSE and MA degrees from Princeton and a BA from the University of California. She has one book “Industrial Strength Parallel Computing,” (Morgan Kaufmann Publishers 2000) and has published more than 80 refereed technical papers.

Dae Hee Lee obtained her Master’s degree in Civil and Environmental Engineering from the University of Ulsan (UOU), South Korea. She has published 4 peer-reviewed scientific articles in well-known
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**Mirian Estefanía López** is currently pursuing her PhD in Chemical Engineering, at UDC, Spain. She has published about 20 peer-reviewed research articles in journals, edited books and international conference proceedings. Her research interests include: biological and physico-chemical techniques for the removal of volatile odorous compounds from the pulp and paper industry, developing novel bioreactors for waste-gas treatment, and artificial neural networks.

**Swati R. Manjari** was born in Delhi, India, in 1976. She earned a BSc in Chemistry from Hindu College, Delhi University in 1994, followed by an MSc in Chemistry from IIT-Kanpur in 1999. She then joined the department of Chemistry at Carnegie Mellon University and completed her PhD degree in 2006 under the guidance of Hyung J. Kim for work in the field of solvation thermodynamics. She continued in the same group for postdoctoral work on room-temperature ionic liquid solvents using molecular dynamics simulations. She joined the department of Physics, Applied Physics and Astronomy at Rensselaer Polytechnic Institute as a Postdoctoral Research Associate in Saroj K. Nayak’s group in 2009, to work on theoretical and computational aspects of nanoscale systems.

**Phil Manning** is a Senior Lecturer in the Department of Earth, Atmospheric & Environmental Science and a Research Fellow in the Manchester Museum, at the University of Manchester (UK). He is also an Adjunct Professor in the Department of Earth & Environmental Science at the University of Pennsylvania (USA). Dr. Manning heads the Palaeontology Research Group at the University of Manchester, which spans 15 departments and 3 faculties. The research undertaken by the group ranges from dinosaur locomotion to the preservation of soft tissues in deep time. He collaborates with colleagues in North America, South America, Europe, and China, with active field programmes in both the USA and China. Dr. Manning has published popular science books on his multidisciplinary approach to palaeontology and regularly contributes to science documentaries on the BBC, Channel 4, History Channel, and National Geographic Channel.

**Chris Morris** is a Software Developer and Project Manager at Daresbury Laboratory UK, part of the Science and Technology Facilities Council. He has been developing software for over twenty years, including roles at an internet service provider and in the electricity supply industry. Eventually, he realised that the coding is not the hardest part of the job. He is currently project manager for PIMS, a data management project for molecular biologists. Chris has a degree in pure mathematics from the Queen’s College, Oxford.

**Saroj K. Nayak** graduated from Jawaharlal Nehru University, India in 1995, with a PhD degree in physical science. Before joining the faculty at Rensselaer in 2000, Dr. Nayak was a Princeton Materials Institute Jr. Fellow at Princeton University. He is currently a Professor in the Physics department at Rensselaer. His research interests lie at the interface of physics, chemistry, and engineering, with principle areas of focus on the study of atomic and electronic structures of matters using ab initio electronic structure calculation methods with classical and quantum molecular dynamics simulations and Monte
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Hung Suck Park obtained his Master’s in Environmental Engineering from the Korea Advanced Institute of Science and Technology in 1986, and subsequently, his PhD in Environmental Engineering from the same institute in 1990. He joined University of Ulsan as an Assistant Professor in 1993. At present, he is a Full Professor in the same Department. He has published over 70 papers in international and national journals of repute and presented many papers at seminars/workshops. His major areas of specialization are environmental biotechnology, environmental management with special emphasis on hazardous waste management, eco-industrial parks, life cycle analysis, and environmental impact assessment. He has carried out many industrial consultancies and sponsored research projects and guided several students for their PhD and Master theses.

Md. Mostafijur Rahman completed his B.Sc. degree from National University of Bangladesh (2003) in Computer Science major in Software Engineering. He earned his MSc degree from Universiti Malaysia Perlis (2009) in Computer Engineering. Currently he is working at School of Computer and Communication Engineering, Universiti Malaysia Perlis (UniMAP). His research interest on embedded computing, parallel computing, and wireless network security.

Matt Ratto is an Assistant Professor in the Faculty of Information at the University of Toronto. Ratto’s research addresses the epistemics of digital tools and services and the relationship between knowledge work and the formation and maintenance of social groups. He is currently developing “critical making” methodologies that blend scholarly reflection on critical information issues with hands-on material work. This work builds upon the new possibilities offered by open source software and hardware, as well as the developing technologies of 3D printing and rapid prototyping. Ratto is the director of the Critical Making lab at the University of Toronto and founder of the Designing Digital Media for the Internet of Things consortium, a private-public-academic consortium interested in investigating, exploring, and building capacity around new developments in tangible interfaces, smart objects, and digital infrastructures.

Eldon Raj Rene obtained his PhD in Chemical Engineering from Indian Institute of Technology Madras, India in 2005. After that, he worked as a Research Professor at the Department of Civil and Environmental Engineering, University of Ulsan, South Korea during the academic year 2005-2006, where he was engaged both in teaching and research. Subsequently, he joined the Chemical Engineering Laboratory, at the University of La Coruña (UDC), Spain for his post-doctoral fellowship, where his research focus was on developing novel bioreactors for air pollution control. Presently, he works as a researcher with a contract under the Juan de La Cierva fellowship programme from the Ministerio de Ciencia e Innovación, Spain. His research interests include: biofiltration, odor management, VOC abatement, treatment of high strength wastewaters through various bioreactor configurations, and the application of artificial neural networks and fuzzy systems for modeling complex biological systems.

Theresa-Marie Rhyne is a recognized expert in the field of computer-generated visualization and a consultant who specializes in applying artistic color theories to visualization and digital media. In the 1990s, as a government contractor with Lockheed Martin Technical Services, she was the found-
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In the 2000s, she founded the Center for Visualization and Analytics and the Renaissance Computing Institute’s Engagement Facility (renci@ncsu) at North Carolina State University. Rhyne is the Editor of the Visualization Viewpoints Department for IEEE Computer Graphics & Applications Magazine and serves on the Advisory Panel of IEEE Computer Magazine. She was the lead Co-chair of IEEE Visualization 1998, and served on the ACM SIGGRAPH Executive Committee. She received a BS degree, 2 MS degrees, and the Degree of Engineer in civil engineering from Stanford University, and is a senior member of IEEE and ACM.

Mohd Fadzlin Mohd Salleh (S’03–M’06) was born in Bagan Serai, Perak, Malaysia, in 1971. He received his BSc degree in Electrical Engineering from Polytechnic University, Brooklyn, New York, US, in 1995. He obtained his MSc degree in Communication Engineering from UMIST, Manchester, UK, in 2002. He has completed his PhD degree in image and video coding for mobile applications, in June 2006 from the Institute for Communications and Signal Processing (ICSP), University of Strathclyde, Glasgow, UK. Currently, he is working as Senior Lecturer in School of Electrical and Electronic Engineering, Universiti Sains Malaysia.

Rebecca Sanders earned an MSc in Computing from Queen’s University in 2008 for her thesis studying the development and usage of scientific software, for which she interviewed scientific software developers and users to identify the special challenges faced in this domain. Her research noted a particularly rich set of challenges around testing. She has since focused her professional career on testing in a range of software domains, including enterprise and web applications. Her professional interests include iterative process improvement, especially as regards testing. Rebecca is currently working as a Senior Test Lead at a Montreal company.

Peter Sarlin is a PhD student in Information Systems at Åbo Akademi University, where he also received his MSc and BSc in Economics. He has a strong interest in monitoring financial stability with computational intelligence, such as neural networks, fuzzy systems, and evolutionary computation, and is currently working on this particular topic in his PhD thesis.

Judith Segal is a Senior Lecturer in the Department of Computing at the Open University in the UK and a member of the Empirical Studies of Software Development research group there. She has conducted field studies on the software development activities of financial mathematicians, earth and space scientists, and molecular biologists, and has published widely on the practice of scientific software development. Judith has a PhD in algebra and her current research originated in her investigations as to how mathematicians use and develop software.

Othman bin Sidek, an esteemed Malaysian scientist, graduated with a Bachelor of Applied Science in Electronics (Honours) from Universiti Sains Malaysia and went on to earn a Master of Science Degree in Communication Engineering from UMIST, UK, as well as a PhD in Information Systems Engineering from Bradford University, UK. He is the Founder and Director of the Collaborative Micro-electronic Design Excellence Centre (CEDEC). His current research areas mainly focused on MEMS and wire-
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Stefania Tomasiello is Senior Lecturer in Computational Methods and FE Analysis at University of Basilicata (Italy). She was a Research Fellow at University of Naples, University of Salerno and University of Sannio (Italy). She obtained some grants from the Italian Ministry of University and Research and the Italian Ministry of Economic Development. She is Project Manager of several R&D projects joining industry and academia. She is author and co-author of many scientific papers and referee for sixteen ISI journals.

Rasit O. Topaloglu has obtained his BS degree with high honors in Electrical and Electronic Engineering from Bogazici University. He has obtained MS in Computer Science and PhD in Computer Engineering from University of California San Diego. After internships at Altera, National Semiconductor, Nortel Networks, and Qualcomm, he joined Advanced Micro Devices in 2005 and has been with GLOBALFOUNDRIES since 2009. He has over thirty publications. He has two granted and four pending patents. He has received a best paper award from IEEE International Symposium on Quality Electronic Design. He serves in the CAD as well as circuits and systems scientific committees of Semiconductor Research Corporation. He serves as a technical program committee member at DAC, the publicity chair for System Level Interconnection Prediction Workshop, and the general chair of DAC Workshop on Parallel Programming, Algorithms, and Architectures, among other technical program and advisory committees.

Hubertus J. J. van Dam is interested in accurate and practical quantum mechanical descriptions of chemistry. He investigated the characteristics of methods to describe electron correlation using multi-reference perturbation theory methods. In his prior position at Daresbury Laboratory, UK, he developed parallel DFT capabilities in GAMESS-UK and NWChem, including DFT Hessians, optimized quadratures, and TDDFT gradients, all developments were also focused on achieving good performance on leading super computer systems. In his current position at Pacific Northwest National Laboratory he continues to develop parallel quantum chemistry capabilities, but is also looking into aspects relevant to extreme scale parallel computing. This includes developing approaches for fault tolerance in HPC codes and investigating paradigms that can express parallelism to achieve the high levels of concurrency needed by future top end computing platforms.

Kerstin Kleese van Dam began her research career in High Performance Computing (HPC), developing, parallelizing, and optimizing in particular climate and engineering simulation applications for leadership-class computing facilities. I/O related performance limitations lead her in 1998 to refocus her efforts onto data management for HPC and subsequently the wider field of data intensive science. She is particularly interested in the design of integrated data and computing infrastructures embedded into scientific work processes, leading a range of infrastructure research, development and deployment projects including: e-Minerals, e-Materials, Natural Environmental Research Council (NERC) DataGrid, Integrated Biology and ICAT - an integrated infrastructure for large scale experimental facilities now deployed at 10 international institutes. She was a founding member of the UK Data Curation Center, having a strong interest in the sharing and continuous reuse of scientific data. At present Kerstin holds the position of Associated Division Director at the Pacific Northwest National Laboratory.
Andrew Walker is an Earth Scientist with diverse research interests that include the development of new methods in computational mineral physics and materials chemistry, the physical processes leading to the deformation of the Earth’s deep interior, studies of defects and disorder in minerals, and aspects of high performance and high throughput scientific computation. His work during the eMinerals project involved bridging the gap between the project’s scientists and core computational team. In particular, he tailored the development and maintenance of the eMinerals infrastructure to best address the needs of the scientific team. He is currently working on the deformation and anisotropy of the core-mantle boundary region.

David Worth has a PhD in mathematics for modelling catalytic combustion and has many years experience in scientific software development for the nuclear waste industry. In the past he has worked to ISO9001 standards using a variety of languages, tools and techniques for software engineering and has encountered a range of practices in software development. He is currently part of the Software Engineering Group of the Computational Science and Engineering Department of STFC working on the Software Engineering Support Programme (SESP - http://www.softeng.rl.ac.uk/p/sesp). SESP was set up to advance the state of software engineering in academic computational science by investigating tools and techniques from the sphere of software engineering and determining those that would have a high pay-off in CSE. The programme has published a number of reports and run many workshops to introduce the tools and provide hands on use to groups in the UK academic community.

Abid Yahya earned his B.Sc. degree from University of Engineering and Technology, Peshawar, Pakistan in Electrical and Electronic Engineering, majoring in telecommunication. Dr. Abid Yahya began his career on a path that is rare among other Researcher Executives and earned his MSc and PhD degrees in Wireless & Mobile systems, in 2007 and 2010 respectively, from the Universiti Sains Malaysia, Malaysia. Currently he is working at School of Computer and Communication Engineering, Universiti Malaysia Perlis (UniMAP). His professional career outside of academia includes writing for the international magazines, newspapers, as well as a considerable career in freelance journalism. He has applied this combination of practical and academic experience to a variety of consultancies for major corporations. He has over 42 research publications to his credit in various books, research journals of repute, and conference proceedings.

Aini Syuhada Md Zain received B. Eng. (Computer and Information Engineering) in 2005 from International Islamic University Malaysia and M. Eng. (Computer and Communication Engineering) in 2007 from National University of Malaysia. She is currently doing her PhD in Communications Engineering in Universiti Malaysia Perlis (UniMAP). She is engaged in research in general areas of optical and wireless communication, wireless networks, RFID, and mobile communication.