The Third International Conference on Ethical Issues in Biomedical Engineering

June 4-6, 2005
Crowne Plaza Hotel
Rochester, New York USA

Conference Program
We wish to thank our Sponsors for their support.

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Welcome from the Conference Chair

I am pleased to welcome you to the Third International Conference on Ethical Issues in Biomedical Engineering. Our mission is to bring together biomedical engineers, philosophers, research scientists, students, clinicians, and representatives from the industry and federal agencies to discuss the ethical issues that face us as we develop new implants, devices and treatments to improve the quality of life of our patients. The papers to be presented represent a broad range of topics reflecting the controversial nature of many of the new developments in biomedical engineering (e.g., stem cell research and genetic engineering).

We are fortunate that the University of Rochester and Alfred University have sponsored this conference. The Ethics & Professional Responsibility Committee of the IEEE Engineering in Medicine and Biology Society (IEEE/EMBS) and most major bioengineering societies have also co-sponsored this meeting. We are grateful for the financial support from the Conversations in the Disciplines Program of the State University of New York (SUNY), University of Rochester, Polytechnic University, Center for Advanced Ceramic Technology at Alfred University, Whitaker Foundation, Nixon Peabody LLP, John Wiley & Sons, Inc. and National Instruments.

Many people contributed to the success of this conference. I would like to thank the local Program committee, the authors, session moderators, panel members, invited speakers and the keynote speaker Dr. David Williams. I am indebted to Ms. Marlene Wightman, the Director of Continuing Education and Industrial Outreach, Alfred University, for her dedication and hard work to make this conference a success, also thank you to her assistant Ms. Emilie Carney. The abstracts from this conference will be published in a special issue of the International Journal of Medical Implants and Devices that will be distributed at the conference. I am grateful to Dr. Jafar Vossoughi, the Editor of this journal, for his help in publishing this special issue.

I am convinced that you shall find this conference intellectually stimulating and a highly enjoyable experience. Welcome to Rochester.

Subrata Saha

Subrata Saha, Conference Chair
Chair, Ethics & Professional Responsibility Committee, IEEE/EMBS
The State University of New York welcomes you to the Third International Conference on Ethical Issues in Biomedical Engineering.

As society awakens to the great power of biomedical science, those of us who are exploring, discovering and creating this new knowledge must exercise extraordinary care to ensure that we have anchored our work in equally as powerful and thoughtful ethical foundations. The old saw tells us there are two sides to every coin. The ethics that we incorporate into the methods and practices we adhere to as we pursue this tremendous advance in human knowledge will fundamentally determine the good, or evil, of what we ultimately create. It will, in the realest of ways, determine how our fellow citizens receive our work: with open-armed acceptance or with shocked revulsion.

Your challenge is to embed biomedical science and medical practice within new frameworks that involve mankind in the design and realization of the common good.

Sincerely,

John R. Ryan
Vice Admiral, USN (Ret.)
Chancellor (Acting)
Third International Conference on Ethical Issues in Biomedical Engineering
June 4-6, 2005
Crowne Plaza Hotel, Rochester, New York

SATURDAY – JUNE 4, 2005
11:00 Registration Opens

1:00 Welcome
Alastair N. Cormack, Dean
School of Engineering, Alfred University

Charles Phelps, Provost
University of Rochester

1:10 INVITED - Who's Responsible Here? Ethics and Duties in Human Subject Research
Gary Chadwick, University of Rochester, Rochester, NY

SESSION I – ADVANCES IN BIOMEDICAL TECHNOLOGY: ETHICAL CONCERNS
Session Co-Chairs:
William Dibrell, Alfred University
Robert Christensen, TMJ Implants Incorporated

1:50 Bioinformatics and Privacy
Wade Robison, Rochester Institute of Technology
Rochester, NY

2:10 The Use of Medical Imaging to Predict the Potential for Unethical Behavior in Workers Involved in Crucial National Defense
Barbara Oakley, Oakland University, Rochester, MI

2:30 TBA
Larry Bowman, MD, Blue Ridge Orthopaedics, SC

2:50 Ethical Implications of New Neuroscience Technologies
Kenneth R. Foster, University of Pennsylvania, Philadelphia, PA

3:10 Break
3:30  Transhumanism and the Emerging Biopolitics  
James J. Hughes, Trinity College, Hartford, CT

3:50  On Biological Limits  
Jeffrey A. Medina, Birkbeck College, University of London, U.K.

4:10  The Human Heritage & Its Preservation  
Nikolaos E. Myridis, Aristotle University of Thessaloniki, Greece

4:30  Decoding Genetic Information: Whether a Right to Privacy? A Look at the Indian Perspective  
Nisha Venkataraman, The W.B. National University of Juridical Sciences, West Bengal, India

4:50  The Abolition as a Theme of Genetic Engineering  
Nikolaos E. Myridis, Aristotle University of Thessaloniki, Greece

5:30  Opening Reception

7:00  Dinner on your own

SUNDAY – JUNE 5, 2005

KEYNOTE SPEAKER

9:00  Global Dimensions to the Ethical Aspects of Regenerative Medicine  
David Williams, University of Liverpool, Liverpool, U.K.

SESSION II – ETHICAL ISSUES IN BIOMEDICAL ENGINEERING

Session Co-Chairs:  
Barbara Oakley, Oakland University  
William Mihalko, M.D., University of Buffalo

9:40  The Ethics of Alloplastic Temporomandibular Joint (TMJ) Implants  
Robert W. Christensen, TMJ Implants Incorporated, Golden, CO

10:00  The Thorny But Pervasive Problem of Permissible Deaths: An Engineering Ethics Perspective  
D. John Doyle, Cleveland Clinic Foundation, Cleveland, OH

10:20  Conflict of Interest Issues in Biomedical Research  
Subrata Saha, NYS College of Ceramics at Alfred University
10:40  Break

11:00  *Ergonomics, Patient Safety and Engineering Ethics: A Cautionary Tale*
      D. John Doyle, Cleveland Clinic Foundation, Cleveland, OH

11:20  *Ethics at the Interface – Engineers and the Healthcare Delivery System*
      Joel L. Nitzkin, JLN MD Associates LLC, New Orleans, LA

11:40  Lunch and Panel Discussion
      *Ethics Education in Bioengineering*
      Subrata Saha, NYS College of Ceramics at Alfred University
      Amy Lerner, University of Rochester
      Wade Robison, Rochester Institute of Technology
      Jerry Collins, Vanderbilt University

**SESSION III – ETHICS EDUCATION IN BIOMEDICAL ENGINEERING**

*Session Co-Chairs:*
      Wade Robison, Rochester Institute of Technology
      Prasanta Ghosh, Syracuse University

1:30   *Teaching Engineering Ethics: A Panel*
      Elysa Koppelman, Oakland University, Rochester, MI

1:50   *Experience with a Course in Biomedical Engineering Ethics*
      Jerry C. Collins, Vanderbilt University, Nashville, TN

2:10   *Teaching Bioengineering Ethics in the Context of Statistics*
      Kathleen Lamkin-Kennard, Amy L. Lerner*, Michael R. King,
      University of Rochester, Rochester, NY

2:30   *The Ethics of Biomaterials Science – A Student Perspective*
      Guglielmo Gottoli*, Douglas E. Burkes, Colorado School of Mines,
      Golden, CO

2:50   Break

3:20   *IEEE Virtual Ethics Court: A Proposed New Concept in Engineering Ethics*
      D. John Doyle, Cleveland Clinic Foundation, Cleveland, OH

3:40   *Choosing and Defining a Problem to Solve*
      Elysa Koppelman, Oakland University, Rochester, MI
SESSION IV – BIOMEDICAL RESEARCH: ETHICAL ISSUES

Session Co-Chairs:
William Coch, MD, Andover, NY
Kenneth Foster, University of Pennsylvania

4:00 Ethical and Human Subject Protection Challenges in Translational Biomedical Research: From Concept to Clinical Trials
Majd Alwan, Beverly Turner*, University of Virginia, Charlottesville, VA

4:20 Linking Biomedical Engineering Ethics Case Studies and Policy
William Dibrell, Elizabeth Ann Dobie, Alfred University, Alfred, NY

4:40 Study Designs in Clinical Research and Bias
Nakul Karkare*, Department of Orthopedics, Medical College of Ohio, Toledo, OH; Subrata Saha, NYS College of Ceramics at Alfred University

5:00 Ethical Considerations in Biomaterials Research
Subrata Saha, Ajay Kashi*, Alfred University, Alfred, NY

7:00 Banquet

MONDAY – JUNE 6, 2005
Panel Discussion – Subrata Saha, Moderator

8:30 – 10:30
Regulations and Marketing of Biomedical Devices: Ethical Challenges

James A. Albright, M.D., LSU Health Sciences Center
Arthur Ciarkowski, FDA
Raymond VanDyke, Nixon Peabody, LLP
Mark S. Mintzer, Global Patient Network
Mark Lauren, Great Lakes Orthodontics
William Mihalko, M.D., University of Buffalo

10:30 Break
SESSION V – ANIMAL EXPERIMENTATION: ETHICAL ISSUES
Session Co-Chairs:
Nakul Karkare, Medical College of Ohio
Richard Waugh, University of Rochester

11:00 A Rational Defense of Animal Experimentation
Nathan Nobis*, SUNY Buffalo; Center for Inquiry, Amherst, NY;
Trulie Ankerberg-Nobis, Physicians Committee for Responsible Medicine, Washington, DC

11:20 Human Engineered Tissues: Scientific, Ethical and Legal Perspectives
Mark Lyles*, and Michael Gregory, Naval Institute for Dental and Biomedical Research, Great Lakes, IL

11:40 Challenges of Tissue Engineering Animal Experiments for Current Institutional Animal Care Usage Committee (IACUC)
Gregory Yourek* and Jeremy J. Mao, University of Illinois at Chicago, Chicago, IL

12:00 Lunch – On your own

1:30 Defining Success: Assessing the Feasibility of Pig-to-Human Transplantation
Ololade Olakanmi, Grinnell College, Grinnell, IA

1:50 Animal Engineering: The Ethics of Authority Over “The Animal”
Elisa Aaltola, University of Turku, Finland

2:10 Ethics of Animal Use in Medical Research
Aborisade Ganiyu Abiodun, Dueren, Germany

SESSION VI – MEDICAL PRACTICE ETHICAL CONCERNS
Session Co-Chairs:
Larry S. Bowman, MD, Blue Ridge Orthopaedics
Jane Greenlaw, University of Rochester

2:30 Legal and Ethical Issues in Clinical Practice
Nakul Karkare*, Department of Orthopedics, Medical College of Ohio, Toledo, OH; Subrata Saha, NYS College of Ceramics at Alfred University, Alfred, NY
2:50  A Statistical Study of 249 Patients Who Had Litigated Claims of Injury
Donna I. Peterson, Loma Linda University School of Medicine, Loma Linda, CA

3:10  Break

3:30  The Principles Governing Physician Patient Relationship
Nakul Karkare*, Department of Orthopedics, Medical College of Ohio, Toledo, OH; Subrata Saha, NYS College of Ceramics at Alfred University, Alfred, NY

3:50  Ethical Issues Concerned with Drug Delivery Applications
Ram Mohan VC, Eastman Dental Center, School of Dentistry, Rochester, NY; Subrata Saha, Alfred University, Alfred, NY

4:10  Ethics in Dentistry
Anirudh Bhetala and Subrata Saha, Alfred University, Alfred, NY

SESSION VII—NANOTECHNOLOGY AND ETHICS
Session Co-Chairs:
Kalle Levon, Polytechnic University
Guven Yalcintas, SUNY Research Foundation

4:30  Developing International Standards in Nanobiotechnology: Ethics and Safety Implications
Lloyd L. Tran, International Association of Nanotechnology, Sacramento, CA

4:50  Nanobiotechnology and Decision Making
Wade Robison, Rochester Institute of Technology, Rochester, NY

5:10  Ethical Issues in Nanotechnology
Steve Florczyk, Subrata Saha, NYS College of Ceramics at Alfred University

5:30  Modeling and Synthesis of Thyroid Hormones Secretion Mechanism Using VHDL and FPGAs
Jaafar M. Alghazo*, Wissam S. Aboueida, American University in Dubai, Dubai, UAE

5:50  Adjourn