Eleventh International Conference on Ethics in Biology, Engineering and Medicine

April 29\textsuperscript{th} & 30\textsuperscript{th}, 2023
Seattle, WA

Preliminary Program

University of Washington, Seattle, WA
Welcome from the Conference Chair

I am pleased to welcome you to the 11th International Conference on Ethics in Biology, Engineering & Medicine. Our goal is to bring together biomedical engineers, scientists, clinicians, dentists, philosophers, lawyers, students, and representatives from industry to discuss the ethical issues that face us as we make new advances in biology, engineering, dentistry and medicine, and as we develop new implants, devices, and drugs to improve medical and dental treatments and the quality of life of our patients. The papers to be presented represent a broad spectrum of topics reflecting the exciting but sometimes controversial nature of many of the new advances in biology, engineering, dentistry, and medicine. Other than Keynote Presentations, all talks are fifteen minutes long. I recommend the speakers limit their lectures to twelve minutes and leave three minutes for questions and answers.

This conference is sponsored by the University of Washington. It is co-sponsored or endorsed by the International Federation of Medical and Biological Engineering (IFMBE), The American College of Dentists, the International Union for Physical and Engineering Sciences in Medicine (IUPESM), the American Institute for Medical and Biological Engineering (AIMBE), Sigma Xi and several other societies, institutions, and companies.

Many people contributed to the success of this conference. I would like to thank the Keynote speakers, invited lecturers, the authors, the session moderators, and the staff. I am sure that you shall find this conference intellectually stimulating and a highly enjoyable experience.

Welcome to Seattle, Washington.

Subrata Saha

Subrata Saha, PhD, Fellow of ACD (Honorary), AIMBE, ASME, BMES, NYAM, and Sigma Xi Conference Chair
Department of Restorative Dentistry and Department of Oral and Maxillofacial Surgery
School of Dentistry, University of Washington,
Seattle, WA
Educational Objectives
At the conclusion of this conference, participants will be aware of:
- Ethical Issues in Dentistry
- Ethical guidelines for developing new medical devices
- Ethical issues related to Artificial Intelligence
- Conflicts of interest and regulatory issues for biomedical research.
- Research Integrity and Responsible Conduct of Research.

Target Audience
Engineers, Scientists, Physicians, Dentists, Lawyers, and graduate, medical, dental and undergraduate students.

Website
The program information can be obtained from
https://dental.washington.edu/restorative-dentistry/11th-international-conference-on-ethics/

Registration
Online registration and program information are available from
https://washington.irisregistration.com/Form/5398

Meeting site
All sessions will be held at the Hogness Auditorium, Room A420, Health Science Center,
University of Washington, 1959 NE Pacific Street, Seattle, Washington, 98105

CDE Credit
Continuing Dental Education credits will be available. The forms will be distributed during registration. Please contact the CDE department for more information:

Continuing Dental Education, University of Washington
Mail: Box 357137, Seattle, WA 98195-7137
Phone: (206) 543-5448, Toll Free: (866) 791-1278
Web: www.uwcde.com, Email: dentalce@uw.edu
Hotel Information
A block of rooms has been reserved at the following hotel, at a special rate of $159.00 plus tax, for single or double occupancy.

Silver Cloud Hotel
5036 25th Ave. NE
Seattle, Washington 98105
(located near the University of Washington campus)
Website: https://www.silvercloud.com/university/

Individuals should call the hotel directly at 1-800-205-6940 to make reservations. To receive the special rate, please mention the group name: "11th International Conference on Ethics in Biology, Engineering, and Medicine", at the time of making a reservation. Please note that the special rate is valid no later than April 7, 2023.
## Agenda

**Saturday, April 29th, 2023**

**TIME**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00 AM-4:00 PM</td>
<td><strong>REGISTRATION</strong></td>
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<tr>
<td>8:30 AM</td>
<td><strong>PLENARY SESSION I</strong>: Hogness Auditorium A420</td>
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<td><strong>WELCOMING REMARKS</strong></td>
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<tr>
<td></td>
<td>Andre V. Ritter, DDS, MS, MBA, PhD</td>
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<td>Professor and Dean, School of Dentistry, University of Washington, Seattle, WA</td>
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<td>Maria Strojnik, PhD</td>
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<td>President-Elect, Sigma Xi, The Scientific Research Honors Society</td>
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<td>Optical Research Institute, Leon, Mexico</td>
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<tr>
<td>8:45 AM</td>
<td><strong>ANNOUNCEMENT</strong></td>
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<tr>
<td></td>
<td>Subrata Saha, PhD</td>
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<td>Conference Chair, University of Washington, Seattle, WA</td>
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<tr>
<td>8:00 AM</td>
<td><strong>Symposium: Ethical Issues in Dentistry</strong></td>
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<td>9:00 AM</td>
<td><strong>WELCOMING REMARKS</strong></td>
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<td>Daniel C.N. Chan, DMD, MS</td>
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<td>Chair &amp; Professor, Dept. of Restorative Dentistry, School of Dentistry, University of Washington, Seattle, WA</td>
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<td>Susan Adams, DDS</td>
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<td>Chair, Washington Section of the ACD</td>
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<tr>
<td>9:00 AM</td>
<td><strong>Keynote I</strong></td>
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<td>The Ethical Responsibilities of Oral Health Professionals in Providing Care for Those with Mental Health and Substance Use Disorders</td>
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<td>Rena N. D’Souza, DDS, MS, PhD</td>
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<td>Director, National Institute of Dental and Craniofacial Research/NIH</td>
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<td>9:40 AM</td>
<td><strong>Keynote II</strong></td>
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<td>Understanding Professional Altruism</td>
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<td>David Chambers, EdM, MBA, PhD</td>
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<td>School of Dentistry, University of the Pacific, San Francisco, CA</td>
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<td>10:20 AM</td>
<td><strong>COFFEE BREAK</strong></td>
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<tr>
<td>10:50 AM</td>
<td><strong>Session I: Ethical Issues in Dentistry</strong></td>
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<td>Chair: Lance Rucker, DDS, FACD</td>
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<td></td>
<td>University of British Columbia, Vancouver, BC, Canada</td>
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<td>Co-Chair: TBA</td>
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10:50 AM  The Double-Edged Sword of Increased Protective Equipment Usage Post COVID-19: Balancing Health and Environmental Concerns  
Megha Rao, MDS and Ram Vaderhobli, DDS, MS  
School of Dentistry, University of California at San Francisco, San Francisco, CA

11:05 AM  Artificial Intelligence in the Current Dental Profession: Ethical Issues  
Ajay Kashi, DDS, MS, PhD,  
Seattle, WA,  
Subrata Saha, PhD,  
School of Dentistry, University of Washington, Seattle, WA

11:20 AM  Emerging Oral Health Research: An Appeal for Compassionate Inquiry  
Aubrey R Hopkins, DMD, ABGD,  
Veterans Affairs, Tallahassee, FL

11:35 AM  3D Printing of Bones and Nanotechnology: Ethical and Anticipated Ethical Issues  
Richard L. Wilson, PhD  
Towson University, Towson, MD

11:50 AM  Toward a Common Understanding of Truth for the Medical Professional  
David Dinhofer, MD  
Cooperman-St. Barnabas Medical Center, Livingston, NJ

12:05 PM  Bionanotechnology and CRISPR: An Ethical and Anticipatory Ethical Analysis  
Richard L. Wilson, Ph.D.  
Towson University, Towson, MD

12:20 – 1:30 PM  LUNCH

1:30 PM  Ethics and Professionalism in Dental Education  
Daniel Haas, DDS. PhD, FRCD©,  
School of Dentistry, University of Toronto, Toronto, Canada

1:45 PM  Investigating the Convergence of Ethical Principles and DEI Curriculum for Predoctoral Students  
Kerry Streiff, DDS,  
School of Dentistry, University of Washington, Seattle, WA

2:00 PM  Ethics in Professional Academics  
Jan O’Dell, DDS, MFS, JD  
University of Mississippi Medical Center, Jackson, MS

2:15 PM  Can Ethics Be Taught? Can it be Learned?  
Anthony J. McGoron, PhD  
Florida International University, Miami, FL

2:30 PM  Research Ethics Training for High School Students and Educators  
Edward Butch, MS  
CITI Program, Miami, FL

2:45 PM  Do No Harm  
Maria Strojnik, PhD  
President-Elect, Sigma Xi, The Scientific Research Honors Society
Optical Research Institute, Leon, Mexico

3:00 – 3:30 PM
COFFEE BREAK

3:30 PM
Panel Discussion: Ethical Imperatives for Diversity, Equity, and Inclusion
Moderator: Shankar M. Krishnan, Ph.D., Vice President, IUPESM, Wentworth Institute of Technology, Boston, MA
Panel Members: Richard L. Watkins, PhD,
Sigma Xi, The Scientific Research Honor Society, Research Triangle Park, NC
Other Members TBA

4:30 PM
Keynote III
Prenatal Absorption of Ionizing Radiation from Medical X-Rays Can Cause Genetic and Mental Development Defects at Doses Below 10 Rads (100 mGy) in Disagreement with Internationally Accepted Guidelines: Evidence from Biophysics, Molecular Biology, and Epidemiology
Thomas Budinger, MD, PhD
Lawrence Livermore Laboratory and University of California, Berkeley, CA

5:10 PM
Session III Bioethics I
Chair: Lawrence Gettleman, DMD,
University of Louisville, Louisville, KY
Co-Chair: TBA

5:10 PM
Ethical Challenges in Health Care Leadership: Bedside to Boardroom
R. Shane Barton, MD, FAOA
LSU Health Science Center, Shreveport, LA

5:25 PM
Disparities in Digital Health: A Global Perspective
Luis Kun, Ph.D.
President, IEEE Society on Social Implications of Technology (SSIT)
National Defense University, Washington, D.C.

5:40 PM
Research under China’s Personal Information Protection Law
Xiaojie Li, PhD and Ruishuang Liu, JD
Peking University Health Science Center, Beijing, China

5:55 PM
Preferences of Older Americans for Length of Life after a Diagnosis of Dementia
Dena S. Davis, J.D., Ph.D. and Lauren Dennelly
Lehigh University, Bethlehem, PA

7 PM
Banquet
The banquet will take place on Saturday at 7:00 PM, April 29th, 2023 at Mamma Melina, 5101 25th Ave. NE, WA 98105, Tel: (206) 632-2271. The restaurant is located directly across the street from the Silver Cloud Hotel.
Tickets are required for the banquet ($75.00). As the seating is limited, please purchase your ticket early.

Agenda
Sunday, April 30th, 2023
TIME
8:00 AM-2:00 PM
8:30 AM REGISTRATION

8:30 AM PLENARY SESSION II: Hogness Auditorium A420

WELCOMING REMARKS
Ratko Magjarevic, Ph.D.
President, International Federation of Medical and Biological Engineering (IFMBE)
University of Zagreb, Croatia

Madan Rehani, Ph.D. President, International Union for Physical and Engineering Sciences in Medicine (IUPESM)
Mass General Hospital, Boston, MA

Luis Kun, Ph.D.
President, IEEE Society on Social Implications of Technology (SSIT)
National Defense University, Washington, D.C.

ANNOUNCEMENT
Subrata Saha, PhD
Conference Chair, University of Washington, Seattle, WA

8:45 AM KEYNOTE IV
Open Science and the Future of Scientific Communication
Howard Bauchner, MD, Past Editor-in-Chief of the Journal of the American Medical Association (JAMA)
Boston University School of Medicine, Boston, MA

9:25 AM Session V: Bioethics II
Chair: R. Shane Barton, MD, FAOA
LSU Health Science Center, Shreveport, LA

9:25 AM Anti-vaxxing Movements in the United States: A Philosophical Analysis
David Smith, Ph.D.
University of Washington, Seattle, WA

9:25 AM Growth and Development of the Brain, Morality and Ethical Behavior
Victoria M Moceri, MA, Ph.D.
University of Washington, Seattle, WA

9:55 AM Our Overwhelmed Health-Care System
Wade L. Robison, Ph.D.
Rochester Institute of Technology, Rochester, NY

10:10 AM Ethics and Medical Developments
Joachim Deeg, MD,
Fred Hutchinson Cancer Center and the University of Washington, Seattle, WA

11:00 AM Session VI: Ethical Issues in Biomedical Engineering
Chair: Ratko Magjarevic, Ph.D., President, IFMBE
University of Zagreb, Croatia

11:00 AM Ethical Considerations for Innovation and Maintenance for Prothesis and Other Medical Devices
Albert Manero, Ph.D., Peter Smith, Samantha Migliore, Courtney Williams, Matt Dombrowski, and John Sparkman
Limbitless Solutions, University of Central Florida, Orlando, FL

11:15 AM 3D Bioprinting, Bioinks and Nanotechnology in Medicine: Ethical and Anticipated Ethical Issues
Richard L. Wilson, Ph.D.
Towson University, Towson, MD
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker(s)</th>
<th>Institution(s)</th>
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<tbody>
<tr>
<td>11:30 AM</td>
<td>Developing a Taxonomic Framework for Ethically Evaluating the Types of Biases Integral to Big Data EHR Studies</td>
<td>George Khushf, Ph.D., Shan Qiao, Xiaoming Li, Jiajia Zhang, and Bankole Olatosi</td>
<td>University of South Carolina, Columbia, SC</td>
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<td>11:45 AM</td>
<td>Off Label Use Versus Off-Label Marketing of Drugs: A Review of Ethical Considerations and a Caution to Researchers</td>
<td>Gail Van Norman, MD</td>
<td>University of Washington, Seattle, WA</td>
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<td>12:00 PM</td>
<td>Organ-on-a-chip: Developments and Future Possibilities: An Ethical and Anticipatory Ethical Analysis</td>
<td>Richard L. Wilson, Ph.D.</td>
<td>Towson University, Towson, MD</td>
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<td>12:15-1:30 PM</td>
<td>LUNCH BREAK:</td>
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<td>1:30 PM</td>
<td>Keynote V</td>
<td>Ethical Clearance Experience From the Largest Hospital-based Research Enterprise</td>
<td>Madan Rehani, Ph.D. President, IUPESM</td>
<td>Mass General Hospital, Boston, MA</td>
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<td>2:10 PM</td>
<td>Session VII: Bioethics III</td>
<td>Chair: Jack Ferracane, Ph.D.</td>
<td>Oregon Health &amp; Science University, Portland, Or</td>
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<td>Co-Chair: Anindya Deb, Ph.D.</td>
<td>Indian Institute of Science (IISc), Bangalore, India</td>
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<td>2:10 PM</td>
<td>Data is Sacred. A Theme for the Development of Responsible Conduct of Research Training Programs.</td>
<td>Philip R. DeShong, Ph.D.</td>
<td>University of Maryland, College Park, MD</td>
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<td>2:25 PM</td>
<td>The Future Landscape of AI In Medicine and New Challenges: Ethical and Anticipated Ethical Issues</td>
<td>Richard L. Wilson, Ph.D.</td>
<td>Towson University, Towson, MD</td>
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<td>2:40 PM</td>
<td>Ethics In A Daily Dental Clinical Setting</td>
<td>Richard Schmidt, DDS</td>
<td>Michigan</td>
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<td>2:55 PM</td>
<td>Contact-driven Nonlinear Explicit Dynamic FEA: A Potent Tool for Enhancing Ethics in Research and Treatment in Orthopedics</td>
<td>Anindya Deb, Ph.D.</td>
<td>Indian Institute of Science (IISc), Bangalore, India</td>
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<td>3:10 PM</td>
<td>Examples of Unethical Behavior in Academia</td>
<td>Lawrence Gettleman, DMD</td>
<td>University of Louisville, Louisville, KY</td>
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<td>3:25 PM</td>
<td>Future Ethical Challenges In Dentistry</td>
<td>Jacob Le and Subrata Saha, Ph.D.</td>
<td>School of Dentistry, University of Washington, Seattle, WA</td>
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<td>3:40-4:10 PM</td>
<td>COFFEE BREAK</td>
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<td>4:10 PM</td>
<td>Keynote VI</td>
<td>Past and Future of Ethical Conduct of Research</td>
<td>Adil Shamoo, Ph.D</td>
<td>University of Maryland School of Medicine, Baltimore, MD</td>
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Poster Presentation:
Ethics in Cancer Care In A Developing World
Soumita Ghosh, Vivek Radhakrishnan, Sanjay Bhattacharya
Tata Medical Center, Kolkata, India

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