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- Description of advances in transformative technology and translational science.
- Critical assessments of a segment of science, engineering, medicine, or other technologies.
- Economics of a technology, governmental and policy action, and innovation as related to intellectual property.
- Environmental (including human health) impact of various technologies.
- Articles on historical, societal, ethical, and related aspects of science, engineering, medicine, or technology, provided they are written for the scientific community and in a style compatible with a scientific journal.
- Articles should have a discussion on the process of innovation and invention.

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EDITORIAL

ANNOUNCING THE INAUGURAL ISSUE OF TECHNOLOGY AND INNOVATION (FORMERLY TECHNOLOGY)

Paul R. Sanberg* and Howard J. Federoff†

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Welcome to Issue 12 No. 1, the inaugural issue of the newly renamed journal Technology and Innovation Proceedings of the National Academy of Inventors, with new editorship and a new, growing Editorial Board. We’ve added Innovation to the name of the journal Technology to highlight our new focus on innovation and honoring academic invention. The journal will be published three times in 2010 and quarterly beginning in 2011.

In this new format, one that we anticipate drawing an eclectic, multidisciplinary audience, our goal is to present information that encompasses essentially the entire field of applied sciences, with a focus on transformative technology and academic invention. We plan to cover advances in transformative technology and translational science; provide critical assessments of specific domains of science, engineering, medicine, and other technologies; explore the economics of technology, governmental and policy actions, and innovation related to intellectual property; discover the environmental and human health impact of various technologies; examine the historical, societal, ethical, and other related aspects of science, engineering, medicine, and technology; and illuminate the process of innovation and invention. The journal solicits research articles, review articles, commentaries, discussions (including letters to the editor and editorials), patent reviews, and book reviews. All contributions will be peer reviewed. Contributors may be members or nonmembers of the National Academy of Inventors™ (NAI).

The NAI edits the journal. The Editorial Board is made up of both NAI members and nonmembers, such as National Medal of Science recipients Lonnie G. Thompson and Solomon H. Snyder, and National Medal of Technology recipient Norman R. Augustine.

The NAI was founded at the University of South Florida to recognize, encourage, and honor university inventors who have a patent issued from the U.S. Patent and Trademark Office; promote the visibility of university technology and academic innovation; encourage the disclosure of intellectual property; educate and mentor innovative students; and translate the inventions of its members to benefit society.

Translational technology is more important than ever. It is the engine that will drive the economies of the 21st century. Thousands of academic inventors on campuses and in laboratories across the globe are discovering new ways to solve seemingly intractable problems. These inventors are responsible for innumerable medical, scientific, artistic, engineering, and other breakthroughs that save lives, create jobs, make us healthier, safer, and more productive, add beauty to our world, uncover its mysteries, and build a better future for our children, and our children’s children. That creative spark, that ability to conceive of something completely

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new, unique, and useful, and to have that creation recognized by the U.S. Patent and Trademark Office by the issuance of a patent, is the mark of a true inventor. Every member of the NAI belongs to this prestigious group of USPTO patent holders. We are proud of this pedigree.

All members of the NAI receive a subscription to Technology and Innovation as a part of their membership. Membership in the NAI is available only through university chapters, to university faculty, staff, alumni, and affiliates. Universities are invited to become Member Institutions of the NAI and form local chapters. Universities that join during the 2010 calendar year are designated “Charter Member Institutions” and receive special privileges. For more information on how to become a Member Institution and start an NAI chapter at your university, contact us at info@academyofinventors.org or at +1-813-974-3181. To learn more about the NAI, visit our website at www.academyofinventors.org.

We hope you enjoy reading Technology and Innovation. The issue contains six articles that demonstrate the breadth of topics we plan to present in the journal, as detailed in our Aims and Scope. If you have an article that would fit within our guidelines, we invite you to review the Aims and Scope and submit your article for consideration.

In this issue, Len Polizzotto, of Draper Laboratory, discusses the critical nature of innovation to an organization’s competitiveness and survival, illuminating the principles and drivers of innovation, and the disciplines necessary for successful innovation in “Creating Customer Value Through Innovation” (5). Dwaine Emerich and Gorka Orive review the state of the art and new directions in the use of biomaterial science in the treatment of brain diseases in their review article “Innovations in the Use of Biomaterials for Treating Brain Disease” (3).

In their article, “The Case for an Ethics Research Consortium for Emerging Technologies: Public Perception of Stem Cell Research and Development” (1), authors Cesar Borlongan, Camille McWhirter, Caroline Fultz-Carver, Kevin Fitzgerald, and Paul Sanberg provide an overview of ethics in stem cell-based therapies and propose the establishment of an interdisciplinary panel of experts to apply ethical principles to the economic incentives of an emerging technology.

In “Encouraging the Art of Medicine: The University of South Florida’s Brief to the United States Supreme Court in Bilski v. Kappos” (4), attorneys and authors Jeff Lloyd and Joshua Brown provide an overview of this significant case currently before the Supreme Court.

Authors Thomas Wade and Ronald Gutmann introduce the concept of utilizing gas dielectrics in three-dimensional integrated systems to considerably enhance system performance in their article “Nanosystems Utilizing Three Dimensional Integration and Gas Dielectrics for Enhanced System Performance” (6). And authors Wen-Shan Chang, Dean Martin, and Meagan Small set out the possibility of removing certain pharmaceuticals from wastewater using commercially available material in their article “Use of Model Compounds to Study Removal of Pharmaceuticals Using Octolig®” (2).

Finally, we would like to acknowledge Judy Lowry, our Editorial Coordinator and Administrator of the National Academy of Inventors™, for her major contribution to the launch of both the NAI and this new journal.

ABOUT THE AUTHORS

Paul R. Sanberg, Ph.D., D.Sc., is Senior Associate Vice President for Research & Innovation, Distinguished University Professor, Executive Director of the Center of Excellence for Aging and Brain Repair, and Vice Chairman of Academics for the Department of Neurosurgery and Brain Repair in the College of Medicine, at the University of South Florida. Dr. Sanberg trained at York University, the University of British Columbia, the Australian National University, and Johns Hopkins University School of Medicine, among others. Before coming to USF, Dr. Sanberg held academic positions at Ohio University, the University of Cincinnati, and Brown University. He has also held positions with cell therapy companies, including Saneron CCEL Therapeutics, Inc., CytoTherapeutics, Inc., and Layton BioScience, Inc. Dr. Sanberg is a member of the Board of Scientific Counselors for the National Institute of Drug Abuse at the National Institutes of Health, and serves on numerous scientific advisory boards for health-related foundations and companies. He is the coeditor-in-chief of Cell Transplantation, editor-in-chief of Technology and Innovation, and serves on editorial boards for more than 25 scientific journals. Dr. Sanberg is the Executive Director of the American Society for Neural Transplantation and Repair, and the founder and current President of the National Academy of Inventors™. He is the author of more than 500 scientific articles, and 13 books, including Cell Therapy, Stem Cells and Brain Repair (Humana Press, 2006). Dr. Sanberg is an inventor on approximately 30 health-related US
patents. His research has focused on discovering innovative ways to repair the damaged brain, and has helped lead the team that demonstrated that bone marrow and umbilical cord blood-derived stem cells can be transformed to neural cells that may be useful in stroke, spinal cord injury, and ALS.

Howard J. Federoff, M.D., Ph.D., received his M.D. and Ph.D. degrees from the Albert Einstein College of Medicine in New York City. Following clinical training in Internal Medicine and Endocrinology and a postdoctoral fellowship in molecular neurobiology at Harvard Medical School’s Massachusetts General Hospital he joined the faculty of the Albert Einstein College of Medicine. In 1995, Dr. Federoff founded the Division of Molecular Medicine and Gene Therapy in the Department of Neurology at the University of Rochester School of Medicine and Dentistry. In 1997 he was appointed Director of the University’s Neuroscience Program. In 2002 he was appointed Senior Associate Dean for Basic Research. In April 2007 Dr. Federoff joined the Georgetown University School of Medicine as Executive Vice President of Health Sciences and Executive Dean and Professor of Neurology and Neuroscience. Dr. Federoff’s research places particular emphasis on novel treatments for neurodegenerative diseases. He formed and led the national consortium “The Parkinson’s Disease Gene Therapy Study Group” whose mission is to establish a rigorous basis for moving novel gene therapeutics from preclinical studies to clinical trials. He is co-editor-in-chief of Technology and Innovation and serves on four editorial boards, has chaired NIH Study Section BDCN 3, was a member of the Board of Scientific Counselors of NIDCR, is a member of the SMA NINDS Scientific Advisory Committee, and is the Chair of the NIH Recombinant DNA Advisory Committee. He serves on the Board of several foundations: AFAR and BREF. He has published greater than 250 papers, chapters, and editorials. Among the honors bestowed upon Dr. Federoff are the Arthur Kornberg Research Award, a Society for Neuroscience Grass Lectureship, the 2005 Abreu Memorial Lectureship, induction into Alpha Omega Alpha, and the Bernard Sanberg Award from the American Society for Neural Repair and Therapy. Dr. Federoff has cofounded two biotechnology start-up companies and has been awarded numerous patents.

REFERENCES

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- Articles should have a discussion on the process of innovation and invention

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