CURRICULUM VITAE

Richard Daniel Hichwa, Ph.D.

Current Position

Senior Associate Vice President for Research and Economic Development
Professor, Departments of Radiology, Physics and Radiation Oncology

Office Address:

Office of the Vice President for Research
and Economic Development (OVPR&ED)
University of Iowa
2660 University Capitol Centre
Iowa City, IA 52242

Office phone: (319) 335-2106
e-mail: richard-hichwa@uiowa.edu

Home Address:

2320 Banbury St. NE
Iowa City, IA 52240

Cell: (319) 321-3733

Administrative Experience and Responsibilities

2010-present, Senior Associate Vice President for Research and Economic Development, University of Iowa

- oversee the Research Development Office which promotes new research activities
- engage and lead faculty teams for the development of large multidisciplinary program/center research grants
- partner with the Office of the Provost to define, develop and initiate broadly based multidisciplinary faculty cluster hires
- oversee the University of Iowa Research Foundation, tech transfer office, incubator labs, and prototyping facilities
- develop key partnerships with industry to advance faculty research
- recruit faculty and staff for senior leadership positions in OVPR&ED, colleges and departments
- advance the research enterprise and economic development pathway by working with federal, state and local legislators and officials
- work with institutional diversity leadership to specifically incorporate diversity into the campus wide research agenda
- oversee major institutional research centers and core facilities
- develop and oversee faculty start-up packages, retention packages, and bridging grants
- assist in the development and implementation of a campus-wide Iowa Informatics Initiative
- lead major reviews of institutional resources, centers and cores
- budget oversight of key programs and activities

2008-2010, Associate Vice President for Research-Development, University of Iowa

- assist with planning, development and leadership of a state-wide NSF EPSCoR proposal

- integrate, develop and maintain research space through campus wide planning activities
- provide primary liaison with faculty, students and staff to promote and increase new economic development opportunities
- continue to serve as the University of Iowa Research Integrity Officer
- lead effort to create an institution-wide Responsible Conduct of Research (RCR) program in collaboration with the Graduate College

2006-2008, Associate Vice President for Research-Compliance, University of Iowa

- direct the human subjects research protection program including supervision of Association for the Accreditation of Human Research Protection Programs (AAHRPP) accreditation and on-line IRB systems
- direct the Office of Animal Resources (OAR) including all UI animal laboratories and IACUC
- serve as the University Conflict of Interest (COI) in Research Officer
- oversee the Environmental Health and Safety Office
- serve as the University of Iowa Research Integrity Officer (RIO)

2003-2007, Vice Chair for Research, Department of Radiology, University of Iowa College of Medicine

- provide leadership for the Department of Radiology research enterprise to develop innovative research proposals for external funding
- author master research agreements with industrial imaging vendors
- foster the development of patentable IP
- promote and advance interdepartmental imaging research
- oversee research budgets for Radiology research ventures
- assist and mentor junior faculty through the tenure and promotion process
- assist in recruitment and retention of faculty in Radiology and other related departments
- provide departmental leadership in the absence of the chair

2002-2008, Director, Small Animal Imaging Core, University of Iowa Holden Comprehensive Cancer Center

- work with Cancer Center investigators to develop and implement preclinical (small animal) imaging into research protocols for diagnosis of disease and/or assessment of interventions
- acquire instrumentation to support and expand the core
- assist in translating preclinical imaging protocols into routine clinical practice
- train investigators how to become self-sufficient using small animal imaging technologies (PET, SPECT, CT, gamma scintigraphy, US, MRI, optical imaging, and quantitative autoradiography)

1988-2007, Director, Positron Emission Tomography (PET) Imaging Center, University of Iowa Hospitals and Clinics (UIHC)

- design, develop and direct the University of Iowa PET Imaging Center
- integrate multidisciplinary activities involving PET across departments within the College of Medicine, College of Engineering, College of Pharmacy and College of Liberal Arts and Sciences
- support the development of novel radiopharmaceuticals
- educate staff and faculty on PET techniques, technology and methodology

1983-1988, Director, Cyclotron/Positron Emission Tomography (PET) Facility, University of Michigan Medical School

- advance, maintain and support nuclear accelerator operations
- direct all financial, technical and research operations of PET resource
- assist in development of novel radiopharmaceuticals and related PET imaging protocols
- educate staff and faculty on PET techniques, technology and methodology

Education

University of Notre Dame	1971 – 75	Physics	1975 B.S.
Vanderbilt University & Oak Ridge National Laboratory	1975 – 76	Nuclear Physics	
University of Wisconsin-Madison	1976 – 77	Radiological Sciences	1977 M.S.
University of Wisconsin-Madison	1977 – 81	Medical Physics	1981 Ph.D.

Professional and Academic Appointments

Research Assistant	1972 – 1975	Nuclear Physics Laboratory, University of Notre Dame
Research Assistant	1975 – 1976	Cyclotron Facility, Oak Ridge National Laboratory (ORNL)
Graduate Research Assistant	1976 – 1981	Medical Physics, University of Wisconsin-Madison, NIH Fellowship
Assistant Research Scientist	1981 – 1985	Internal Medicine, University of Michigan School of Medicine
Director, Cyclotron/ PET Facility	1983 – 1988	Nuclear Medicine, University of Michigan School of Medicine
Assistant Professor	1983 – 1988	Bioengineering, University of Michigan
Assistant Professor	1985 – 1988	Internal Medicine, University of Michigan School of Medicine
Computing Coordinator	1986 – 1988	School of Medicine, University of Michigan
Associate Professor (tenured)	1988 – 2003	Radiology, University of Iowa College of Medicine
Director, PET Imaging Center	1988 – 2007	Radiology, University of Iowa College of Medicine/UIHC
Adjunct Associate Professor	1997 – 2003	Physics, University of Iowa College of Liberal Arts and Sciences
Director, Small Animal Imaging Core	2002 – 2008	Holden Comprehensive Cancer Center University of Iowa
Professor	2003 – present	Radiology, University of Iowa College of Medicine
Adjunct Professor	2003 – present	Physics, University of Iowa, College of Liberal Arts and Sciences
Adjunct Professor	2003 – present	Radiation Oncology, University of Iowa

Vice-Chair for Research	2003 – 2007	College of Medicine Radiology, University of Iowa
Associate Vice President for Research	2006 – 2010	College of Medicine University of Iowa
Senior Associate Vice President for Research and Economic Development	2010-present	University of Iowa
Interim Associate Vice President for Research Compliance	2015 - 2016	University of Iowa
Interim Director of the UI Research Foundation	2017	University of Iowa

Administrative Education/Training

Association of University Radiologists (AUR) Leadership Training Course	2004
PRIM&R Institutional Official (IO) Workshop	2007
CIC Research Integrity Officer (RIO) Workshop	2007
AAHRPP Working with Social Scientists Program	2008
PRIM&R Institutional Official IACUC Workshop	2008
Iowa LEAD (Senior Leadership Training)	2009

Journal Reviews

The Journal of Nuclear Medicine	1987-present
IEEE Transactions in Medical Imaging	1988-present
IEEE Transactions in Nuclear Science	1988-present
Nuclear Instruments and Methods	1988-present
Health Physics	1991-present
The Journal of Applied Physiology	1999-present
American Journal of Psychiatry	2000-present
American Journal of Roentgenology	2000-present
Medical Physics	2002-present

Grant Review Panels

NIH Special Study Sections (ad hoc)	1991-present
NIH SBIR (ad hoc)	1992-present
DOE Nuclear Instruments (ad hoc)	1992-present
University of Iowa Internal Funding Initiatives	1996-2006
Whittaker Foundation	1996-2000
Carver Scientific Research Initiative at Iowa	1997-2008
NIH Bioengineering Partnerships (ad hoc)	1999-2006
NIH Member DMG (Diagnostic Imaging) Study Section	1999-2004
NIH MEDI (Surgical Sciences, Biomedical Imaging, & Bioengineering) (ad hoc)	1999-present

State of Florida Research Programs	2000-present
NCI Cancer Center Site Reviewer-Imaging (ad hoc)	2000-present
NIH Member and Chair, CSR Fellowships (Diversity & Disabilities)	2002-2011
Research Council of Netherlands	2003-2016
NIH NIBIB Member and Chair, Training Grants	2003-2006
Austrian National Research Council	2004-2016
NIH Member Manpower and Training Study Section	2007-2012
NIH S10 Instrumentation Study Section (ad hoc)	2009-present
NIH BMIT-A Biomedical Imaging Study Section (ad hoc)	2010-present
NIH BMIT-B Biomedical Imaging Study Section (ad hoc)	2017-present
NIH LRP-Loan Repayment Program (ad hoc)	2016-present

Honors and Awards

Bristol Brass Foundation Scholarship
John and Mary Boyle Dailey Memorial Scholarship
Reader's Digest Scholarship
Ford Foundation Scholarship
NIH Fellowship for graduate studies
Received B.S. in physics Magna Cum Laude

Professional Affiliations

American Physical Society	1974-present
Nuclear Physics	
Instrument and Measurement Science Group	
Biological Physics	
Industrial Physics	
Society of Nuclear Medicine	1977-present
Radiopharmaceutical Science Council	
Computer Council	
Brain Imaging Council-Member, Board of Directors	
Instrumentation Council-PET Instrumentation Committee	
Institute of Electronic and Electrical Engineers	1982-present
Nuclear and Plasma Society	
Medical Imaging Society	
Clinical Brain Imaging Society	1989-2005
International Nuclear Target Development Society	1990-2008
Academy of Molecular Imaging	1991-2009
Association of University Radiologists	2004-2008
Radiology Research Alliance (RRA)	

Departmental, Collegiate, University, State and National Committees

Chairman, University of Michigan Medical School Computer Advisory Committee	1985-1988
University of Michigan Campus Network Advisory Committee	1986-1988
Executive Committee, University of Michigan P.E.T. Activities	1984-1988
Biotechnology/Biomedical Committee, Michigan Technology Council	1985-1988
University of Michigan Laser Safety Committee	1985-1988
University of Michigan Task Force on TCP/IP Network	1987-1988
Integrated Information Systems for the University of Michigan Medical Center, Core Planning Group	1987-1988
University of Michigan FDDI Fiber Network Committee	1988-1988
Radiology Computer Advisory Committee, University of Iowa	1989-1991
Executive Committee, Image Analysis Facility University of Iowa	1989-1992
Radiology Research Advisory Committee University of Iowa	1989-1996
Board of Directors, Brain Imaging Council Society of Nuclear Medicine	1989-1996
PET Instrumentation Committee, Society of Nuclear Medicine	1990-1996
Chairman, AAPM Task Group for PET Site Planning	1990-1995
Certificate-of-Need Committee, State of Iowa	1991-1992
Academic Computing Services Committee University of Iowa	1991-1994
Executive Committee, Iowa Consortium of Cardiac Imaging, University of Iowa	1991-1995
PET Advisory Committee, University of Iowa	1992-1996
SubChairman, International Conference on Accelerators in Research and Industry	1992-2006
Chairman, Academic Computing Services Committee, University of Iowa	1993-1994
Office of Information Technology Transition Committee, University of Iowa	1993-1994
Research Council, University of Iowa	1996-1999
Advisory Committee in the Physical and Mathematical Sciences, University of Iowa	1997-1998
Advisory Committee, Iowa COM NMR Research Core	1997-2008
Advisory Committee, Iowa COM ESR Research Core	1999-2008

Chair, Medical Radiation Protection Committee University of Iowa	2000-2006
Chair, UI Hospital Radiation Safety Review Group University of Iowa	2000-2006
Chair, Radioactive Drug Research Committee (RDRC)	2000-2006
Institutional Review Board (IRB), University of Iowa	2000-2007
Program Committee, Society of Nuclear Medicine	2000-2007
Research Committee, COM University of Iowa	2001-2006
Research Council, University of Iowa	2001-2005
Chair, Research Council, University of Iowa	2002-2005
Full Member, Holden Comprehensive Cancer Center	2002-present
Animal Imaging Facility Advisory Committee, University of Iowa	2003-2009
Co-Chair, Organizing Committee, International Workshop on Targetry and Target Chemistry	2004
Image Response Assessment Team, NCI, Executive Committee	2005-2009
Co-Chair, Organizing Committee, International Symposium on Radiopharmaceutical Chemistry	2005
Program Committee, IEEE Nuclear Science Symposium and Medical Imaging Conference	2005-2015
CIC Research Integrity Officers (RIOs)	2006-present
Chair, Conflict of Interest in Research Committee, University of Iowa	2006-2008
Chair, Radiation Safety Executive Committee, University of Iowa	2007-2008
Green Power Task Group, University of Iowa	2007-2009
Pandemic Flu and Disaster Preparedness, University of Iowa	2007-2009
College of Medicine Conflict of Interest Task Force, University of Iowa	2007-2009
State of Iowa Radiation Committee	2008-2012
Iowa Energy Center Advisory Board, State of Iowa	2008-2013
Member, Internal Advisory Board, Holden Comprehensive Cancer Center	2008-2016
Member, Advisory Board, State Archeologists Office State of Iowa	2008-2012
Member, CTSA National Imaging Working Group	2009-2012
Department of Radiology Faculty Review Committee University of Iowa	2010-2016
Member, Board of Directors, Books Without Borders	2010-2012
Member, Board of Directors, University of Iowa Research Foundation (UIRF)	2010-present
CIC Data Storage Committee	2012-present
Member, State Hygienic Laboratory Advisory Board	2012-present
CIC Core Resources Committee	2013-2015

University of Iowa Sustainability Charter Committee	2013-present
Member, Advisory Committee for Campus-Wide Informatics Initiative	2013-present
University-Industry Demonstration Partnership (UIDP)	2013-present
Chair, Center for Biocatalysis and Bioprocessing (CBB) review and reorganization committee	2013-2016
Digital Manufacturing & Design Innovation Institute (DMDII) liaison	2013-2017
Chair, State Hygienics Laboratory (SHL) review and reorganization committee	2014-2016
Member, State of Iowa Technology Commercialization Council	2015-present
Member, State of Iowa Innovation Council	2016-present
Member, State of Iowa Innovation Corporation	2016-present
Member, State of Iowa Biosciences Workgroup	2016-present
Member, Executive Committee, University of Iowa Research Foundation (UIRF)	2017-present
Member, University of Iowa Research Park (UIRP) Board of Directors	2017-present
Chair, Unmanned Aerial Systems (UAS) Committee	2017-present

Visiting Professorships

Research Visiting Professor, CTI, Knoxville, TN	1993
Visiting Professor, IBA, Louvain-La Neuve, Belgium	1993
Asia Luminary Scholar and Visiting Professor, Seoul, South Korea (Samsung Medical Center, Asan Medical Center and Korea Cancer Center); Taipei, Taiwan (Taipei Veterans General Hospital, Tri-Service General Hospital, Veterans General Hospital Taichung and National Taiwan University Hospital and Medical College); Beijing, People's Republic of China (Beijing Medical University, Tianjin Medical University and Shanghai Medical University)	1993
Visiting Professor, Creighton University	1996
Visiting Professor, Drake University	1996
Visiting Professor, Agustana College	1996
Visiting Professor, Heccepta University, Ankara, Turkey	2001

Classroom Teaching

Cyclotron/PET Lecture series*, University of Michigan	1983-1987
NE-481 Diagnostic Imaging, Nuclear Engineering, University of Michigan	1984-1988
Neurology Residents PET Seminars*, University of Michigan	1986-1988
RSNA Refresher Course on PET and SPECT	1986-1990

PET Lecture Series*, Psychiatry, University of Iowa	1989-1992
AAPM Summer School	1990
51-185 Physics and Analysis of Biomedical Images, University of Iowa	1993
2-221 Computational Neurobiology, University of Iowa	1993
51-91 Biomedical Engineering Seminar, University of Iowa	1994
77-211 Physics of Radiobiology, University of Iowa	1994
29:240 & 77:211 Medical Physics*+, University of Iowa	1996
51:091 & 51:191 Biomedical Engineering Seminar, University of Iowa	1997
29:240 & 77:211 Medical Physics*+, University of Iowa	1998
29:240 & 77:211 Physics of Medicine*+, University of Iowa	2000
29:240 & 77:211 Medical Physics*+, University of Iowa	2002
29:240 & 77:211 Medical Physics*+, University of Iowa	2004
650:270 Responsible Conduct in Research	2005-present
173:295 Clinical Research Ethics, University of Iowa	2010-present
29:240 & 77:211 Medical Imaging Physics*+, University of Iowa	2006
Course Director, Radiology Resident Physics*, University of Iowa	2006
RSNA Resident Research Fundamentals	2005-present

* semester course taught by Hichwa
\+ 4 graduate credit hours

Clinical Teaching

Instruction on technique, methodology and image interpretation for faculty, fellows, residents and medical students from Radiology, Nuclear Medicine, Psychiatry, Neurology, Oncology and Cardiology.	1991-2007

Teaching Committees

Radiation Biology curriculum, Department of Radiation Oncology, University of Iowa	1993-2007
Undergraduate Physics laboratory program Department of Physics, University of Iowa	2000-2007

Primary Ph.D. Advisor

Elizabeth Hugel	Chemistry	Aug 84-Jul 88	Ph.D.
Raymond Raylman	Physics	Sep 86-Aug 88	- - -

Gregg Cohen	Radiation Biology	May 90-Jan 93	Ph.D.
Shalini Narayana	Radiation Biology	Jan 92-Jul 96	Ph.D.
Scott Wollenweber	Physics	Jan 92-Dec 96	Ph.D.
Joe Modrick	Physics	Jan 96-Jun 96	- - -
Mehmet Aykac	Physics	Aug 96-Oct 00	Ph.D.
Iman Amad	Radiation Biology	Aug 99-May 00	- - -
Karthikayan Balakrishnan	Physics	Aug 00-May 05	Ph.D.
Arda Konik	Physics	Jun 06-Jul 10	Ph.D.

Primary M.S. Advisor

Chi Tsan	Bioengineering	Sep 81-Aug 83	M.S.
Ralph Raichle	Chemical Engineering	May 82-Sep 84	M.S.
Judy Clark	Bioengineering	Mar 83-Aug 85	M.S.
Daniel Kadrmas	Physics & Rad Biology	Sep 91-Aug 93	M.S.
Donald Wick	Radiation Biology	Jan 94-Aug 94	M.S.
Sudha Maniam	Electrical Engineering	Jan 93-Feb 95	M.S.
Deniz Bilgen	Physics	May 96-Aug 98	M.S.
Arda Konik	Biomedical Engineering	May 05-May 06	M.S.
Thomas Idstein	Electrical Engineering	Jul 04-Jul 06	M.S.
Lifiana Somantri	Physics	Jun 04-Aug 07	- - -

Fellows Supervised

Ester Argenyi, MD	Nuclear Medicine/PET	1992-1993
Semih Dogan, MD	Nuclear Medicine/PET	1993-1994
Gulay Uygur, MD	Nuclear Medicine/PET	1994-1995
Yusuf Menda, MD	Nuclear Medicine/PET	2000-2001
Harbinder Toor, MD	Nuclear Medicine/PET	2001-2002
Joseph Floresca, MD	Nuclear Medicine/PET	2002-2003
Bruce Higginbotham, MD	Nuclear Medicine/PET	2003-2004
Twyla Bartel, DO	Nuclear Medicine/PET	2004-2005
Feng Qing, MD	Nuclear Medicine/PET	2005-2006
Luke Bolek, MD	Nuclear Medicine/PET	2006-2007

Student Counseling

Medical Student Mentor

Debra Johnston	Independent Research	Sep 91-May 93
Chad Osborne	M4	Aug 93-Feb 94
Joseph Toulouse	M2	Jun 95-Aug 95

Graduate Student mentor

Brian Davis	Physics	Jun 00-Aug 00
Tatsuki Matsui	Physics	Jun 01-Aug 01

Undergraduate Honors Mentor

Laura Wollenweber	Chemical Engineering	Jul 92-Dec 92
Joseph Toulouse	Physics	Aug 93-Aug 94
Anthony Krivanek	Biomedical Engineering	Jan 95-May 95
Kirk Miller	Biomedical Engineering	Sep 95-Jul 96

Undergraduate Mentor

Paul Schultz	Electrical Engineering	Sep 91-May 93
Mark Schultz	Mechanical Engineering	Sep 92-Dec 92
Richard Dawson	Electrical Engineering	May 93-May 94
Benjamin Bender	Biomedical Engineering	May 93-Sep 95
Anthony Krivanek	Biomedical Engineering	May 94-May 96
Kirk Miller	Biomedical Engineering	Aug 94-May 96
Alexandra Ramsden	Physics	Aug 96-Dec 96
Nadia Sifri	Physics	Aug 96-Aug 97
Asa Rickard	Electrical Engineering	July 02-Aug 04
Thomas Idstein	Electrical Engineering	Jun 02-Aug 04

Undergraduate Advisor

Eric Mobley	Physics	Sep 97-May 99
Michael Dayton	Physics	Sep 97-May 99

Current Research Interests and Projects

- Broad development of technology and methodology for biochemical and physiological investigation of human cellular/system function using Positron Emission Tomography.
- Development of scientific visualization methodologies for analyzing medical and physical image based data.
- Development of nuclear targets to produce positron emitting radionuclides.
- Design of new radiation detector systems.
- Investigation of neuro-cognitive function from focused stimulation using PET imaging.
- Reduction and containment of radioactive waste products (International Atomic Energy Agency).
- Development of institutional Responsible Conduct of Research (RCR) programs.

Grant Funding

Active

Title: **University of Iowa I-Corps Program Site: Building an Integrated**

	Innovation and Entrepreneurial Ecosystem in America's Heartland
Source of Funds:	NSF
Direct Funds:	$299,991
Funding Period:	8/15-7/18
Co-PIs:	David Hensley, MBA and Richard Hichwa, PhD
Percent Effort:	0.6 calendar months
Salary Support:	5%
Role:	Co-PI. Assist in the development and implementation of NSF I-Corps principles and training for entrepreneurial faculty and students. Build collaborations and partnerships between academia and industry.

Title:	**Iowa EPSCoR: Harnessing Energy Flows in the Biosphere to Build Sustainable Energy Systems**
Source of Funds:	NSF
Direct Funds:	$20,000,000
Funding Period:	8/11-9/17
PI:	Ted Heindel, PhD (Iowa State University)
U Iowa PI:	Richard Hichwa, PhD (current)
Percent Effort:	0.5 calendar months
Salary Support:	0%
Role:	Co-Investigator. Serve as University of Iowa lead for all EPSCoR Broader Impacts (BI) including diversity, external engagement, workforce development, outreach, and education/training.

Recently Completed

Title:	**IINspire LSAMP-An Alliance Modeling How to Broaden Participation in Changing Midwest Demographics**
Source of Funds:	NSF
Direct Funds:	$498,491
Funding Period:	3/11-2/16
PI:	David K. Holger, PhD (Iowa State University)
Percent Effort:	0.5 calendar months
Salary Support:	0%
Role:	PI at University of Iowa. Lead activities for increasing diversity within graduate research education. Connect undergraduates with research faculty. Integrate LSAMP students with other diversity and research functions on campus.

Title:	**The Use of 2-Deoxyglucose in Head and Neck Cancer Therapy**
Source of Funds:	NIH
Direct Funds:	$1,007,500
Funding Period:	12/08-11/13

PI: Douglas Spitz, PhD
Percent Effort: 0.5 calendar months
Salary Support: 4%
Role: Co-Investigator. Develop preclinical and clinical imaging protocols. Assist with IRB submissions and reviews. Perform data analysis.

Title: **Carotid Occlusion Surgical Study**
Source of Funds: University of North Carolina
Direct Funds: $136,000/yr
Funding Period: 11/07-10/12
PI: William Powers, MD (UNC)
PI: Patricia Davis, MD (Iowa)
Percent Effort: 0.12 calendar months
Salary Support: 1%
Role: Co-Investigator. Develop technology to image brain function using short-lived radioactive tracers and positron emission tomography. Conduct clinical trials. Analyze image data and confer with overall multicenter team on findings.

Title: **Inveon Preclinical PET, CT, and SPECT Scanning System**
Source of Funds: NIH
Direct Funds: $1,511,268
Funding Period: 3/09-2/11
PI: Richard Hichwa, PhD
Percent Effort: 0 calendar months
Salary Support: 0%
Role: PI. Acquire preclinical multimodality imaging system in support of expansion of Cancer Center small animal imaging core through shared instrumentation grant mechanism.

Title: **Cancer Center Support Grant (CCSG)**
Source of Funds: NIH
Direct Funds: $13,185,132
Funding Period: 7/00 – 6/10
PI: George Weiner, MD
Percent Effort: 0.4 calendar months
Salary Support: 3%
Role: Director. Small Animal Imaging Core and CCSG Co-Investigator. Assist all investigators with protocol development, data acquisition, data analysis and interpretation of results. Integrate outcomes with translational imaging of human subjects.

Title: **Iowa Imaging Response Assessment Team (IRAT); CCSG**

Supplement
Source of Funds: NIH
Direct Funds: $137,000/yr
Funding Period: 7/05 – 6/10
PI: George Weiner, MD
Percent Effort: 0.6 calendar months
Salary Support: 5%
Role: Co-Investigator. Develop routine but quantitative methodology for assessing noninvasive imaging procedures of PET and other related modalities for cancer research. Integrate procedures for all imaging performed through the CCSG program.

Title: **Training grant in Free Radical and Radiation Biology**
Source of Funds: NIH
Direct Funds: $155,000/yr
Funding Period: 7/05-6/10
PI: Douglas Spitz, PhD
Percent Effort: 5%
Salary Support: 0%
Role: Co-investigator and graduate student mentor. Mentor students in the Radiation Biology program that have an interest in biomedical imaging. Assist in data acquisition, analysis and evaluation.

Title: **Brain Development of Adolescent Marijuana Users**
Source of Funds: NIH
Direct Funds: $1,730,925
Funding Period: 9/04 – 8/08
PI: Robert Block, PhD
Percent Effort: 0.60 calendar months
Salary Support: 5%
Role: Co-Investigator. Develop protocols for cognitive evaluation of chronic and acute marijuana usage with positron emission tomography. Perform data analysis.

Title: **Innovative Neuroimaging Technologies Training Program**
Source of Funds: NIH
Direct Funds: $506,545
Funding Period: 9/00-8/06
PI: Richard D. Hichwa, PhD
Percent Effort: 0.60 calendar months
Salary Support: 5%
Role: PI. Direct program and coordinate all mentor and trainee activities.

Title:	**Research Experience for Undergraduates (REU) Site: Undergraduate Research in Physics and Astronomy at the University of Iowa**
Source of Funds:	NSF
Funding Period:	4/04-3/07
PI:	Mary Hall Reno, PhD
Percent Effort:	5%
Salary Support:	0%
Role:	Mentor. Undergraduate mentor for summer research projects in Medical Physics.

Peer Reviewed Publications

1. Jolivette PL, Goss JD, Bieszk JA, Hichwa RD, Browne CP. Charged particle Q-value measurements in the iron region. Physiol Rev C 13:439, 1976.

2. Nickles RJ, Gatley SJ, Hichwa RD, Simpkin DJ, Martin JL. The synthesis of nitrogen-13 labeled nitrous oxide. Int J Appl Radiat Isot 29:225-227, 1979.

3. Nickles RJ, Hichwa RD. A digital leaky integrator. Nucl Instr Metho 158:609-610, 1979.

4. Nickles RJ, Gatley SJ, Madsen MT, Hichwa RD, Simpkin DJ, Martin JL. High yield synthesis of the sequence $^{13}N_2$, $^{13}N_2O$, $^{11}C_2H_2$, $H_2{}^{15}O$ and ^{17}F- for RCFB studies. J Label Comp Radiopharm 16:90-91, 1979.

5. Gatley SJ, Crawford JC, Halama JR, Hichwa RD, Martin JL, Nickles RJ, Simpkin DJ. Synthesis of C-11 hippuric acid from C-11 benzoic acid and glycine using rat liver mitochondria. J Label Comp Radiopharm 16:182-184, 1979.

6. Hichwa RD, Nickles RJ. The tuned pipeline - A link between small accelerators and nuclear medical needs. IEEE Trans Nucl Sci NS-26:1707-1709, 1979.

7. Yates SW, Lee IY, Johnson NR, Eichler E, Reidinger LL, Guidry MW, Kahler AC, Cline D, Simon RS, Butler PA, Colombani P, Stephens FS, Diamons RM, Ronningen RM, Hichwa RD, Hamilton JS, Robinson EI. High spin properties of Er-164 in the multiple band crossing region. Physiol Rev C 21:2366-2384, 1980.

8. Shaughnessy WJ, Gatley SJ, Hichwa RD, Lieberman LM, Nickles RJ. Aspects of the production of ^{18}F 2-Deoxy-2-Fluoro-Glucose via $^{18}F_2$ with a tandem Van de Graaff accelerator. Int J Appl Rad Isot 32:23-29, 1981.

9. Gatley SJ, Hichwa RD, Shaughnessy WJ, Nickles RJ. F-18 labeled lower fluoroalkanes:

reactor-produced gaseous physiological tracers. Int J Appl Radiat Isot 32:211-214, 1981.

10. Madsen MT, Hichwa RD, Nickles RJ. An investigation of ^{11}C-methane, ^{13}N-nitrous oxide and ^{11}C-acetylene as regional cerebral blood flow agents. Phys Med Biol 26:875-882, 1981.

11. Hichwa RD, Daube ME, Nickles RJ. Small-scale targetry for the production of ^{81}Rb and ^{51}Mn. J Label Comp Radiopharm 18:227-228, 1981.

12. Hichwa RD, Nickles RJ. Targetry for the production of medical isotopes. IEEE Trans Nucl Sci NS-28:1924-1927, 1981.

13. Holden JE, Gatley SJ, Hichwa RD, Ip WR, Shaughnessy WJ, Nickles RJ, Polcyn RE. Cerebral blood flow using PET measurements of fluoromethane kinetics. J Nucl Med 22:1084-1088, 1981.

14. Hichwa RD, Tsang C. A positron detector suitable for automated radiopharmaceutical production. J Label Comp Radiopharm 19:1346, 1982.

15. Hichwa RD. Positron production and PET scanning. IEEE Trans Nucl Sci NS-30:1688-1692, 1983.

16. Nickles RJ, Hichwa RD, Daube ME, Hutchins GD, Congdon DD. An $^{18}O_2$ target for the high yield production of ^{18}F-fluoride. Int J Appl Radiat Isot 34:625-629, 1983.

17. Hichwa RD. Positron emission tomography: Use of short-lived radionuclides for neurological research. Nucl Instr Metho B10/11:1072-1076, 1985.

18. Frey KA, Hichwa RD, Ehrenkaufer RLE, Agranoff BW. Quantitative in vivo receptor binding III: tracer kinetic modeling of muscarinic cholinergic receptor binding. Proc Natl Acad Sci USA 82:6711-6715, 1985.

19. Frey KA, Agranoff BW, Young AB, Hichwa RD, Ehrenkaufer RLE. Human brain receptor distribution. Science 232:1269-1271, 1986.

20. Hugel EA, Griffin HC, Hichwa RD. Simulation of beam-target interactions for isotope production. Supplement to Nuclei Off the Line of Stability. R Meyer and D Brennor, ed., 570-575, 1986.

21. Hutchins GD, Hichwa RD, Koeppe RA. A continuous flow input function detector for $H_2{}^{15}O$ blood flow studies in PET. IEEE Trans Nucl Sci NS-33:546-549, 1986.

22. Hutchins GD, Rogers WL, Clinthorne NH, Koeppe RA, Hichwa RD. Constrained least

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