

CURRICULUM VITAE

Name: Edward Victor Prochownik Birthdate: May 13, 1950

Birthplace: Buffalo, NY Citizenship: US

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Personal Data: Married to Denise Charron-Prochownik, 1981
Children: Katherine Prochownik, b.1993

EDUCATION AND TRAINING

Undergraduate:

1968-1972: The Johns Hopkins University BA Biology
Baltimore, MD

Graduate:

1972-1977: The University of Chicago Ph.D. Pathology/Virology
Chicago, IL (Werner H. Kirsten, advisor)

1972-1978: The University of Chicago M.D. Medicine
Pritzker School of Medicine
Chicago, IL

Post-Graduate:

1978-1979: The Children's Hospital Intern in Pediatrics
Boston, MA (Mary Ellen` Avery, Director)

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| 1979-1980: The Children's Hospital Boston, MA | Junior Assistant Resident in Pediatrics (M.E. Avery, Director) |
| 1980-1981: The Children's Hospital and The Dana Farber Cancer Institute Harvard Medical School Boston, MA | Clinical Fellow in Pediatric Hematology/Oncology (David G. Nathan, Director) |
| 1981-1983: The Children's Hospital and The Dana Farber Cancer Institute Harvard Medical School Boston, MA | Research Fellow in Pediatric Hematology/Oncology (Stuart H. Orkin, Advisor) |

APPOINTMENTS AND POSITIONS

1983-1984: Instructor in Pediatrics
The Children's Hospital
Dana Farber Cancer Institute
Harvard Medical School
Boston, MA

1984-1987: Arthur F. Thurnau Assistant Professor of Pediatrics and Communicable Diseases
C.S. Mott Children's Hospital
The Committee on Cellular and Molecular Biology
The University of Michigan Medical School
Ann Arbor, MI

1987-1992: Associate Professor of Pediatrics and Communicable Diseases
C.S. Mott Children's Hospital
The Committee on Cellular and Molecular Biology
The University of Michigan School of Medicine
Ann Arbor, MI

1992-present: Professor of Pediatrics
Professor of Microbiology and Molecular Genetics
University of Pittsburgh School of Medicine
Pittsburgh, PA

1992-present: The Paul C. Gaffney Professor of Pediatrics
University of Pittsburgh
Pittsburgh, PA

1992-present: Director of Oncology Research, UPMC Children's Hospital of Pittsburgh

2017-present: Professor of Clinical and Translational Science, The University of Pittsburgh

CERTIFICATION AND LICENSURE

Specialty Certification

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| 1985 | Certifying Board: General Pediatrics | American Board of Pediatrics #32594 |
| 2005 | Sub-specialty Board in Pediatric Hematology/Oncology | American Board of Pediatrics #001834 |
| 2014 | Recertification Board in Pediatric Hematology/Oncology | |

Medical Licensure

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| Massachusetts License | #49780 (inactive) |
| Michigan License | #47718 (inactive) |
| Pennsylvania License | #46934 |

MEMBERSHIPS IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

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|------|---|
| 1984 | American Association for the Advancement of Science |
| 1985 | American Society of Hematology |
| 1985 | Society for Pediatric Research |
| 1986 | American Society for Microbiology |
| 1989 | American Society for Clinical Investigation |
| 2003 | American Pediatric Society |

HONORS

1972-1978: Medical Scientist Training Program Appointee of the National Institute of General Medical Sciences

1977: Alpha Omega Alpha (AOA) Medical Honor Society (3rd year)

1978: MD with Honors, The University of Chicago Pritzker School of Medicine

1978: The John Van Prohaska Award for outstanding potential in clinical medicine, research and teaching, The University of Chicago Pritzker School of Medicine

1978: Lange Award for outstanding achievement as a medical student, The University of Chicago Pritzker School of Medicine

1978: Sheard-Sanford Award of the American Society of Clinical Pathologists for outstanding student research

1982-1984 : Johnson and Johnson Pediatric Research Fellowship

1982-1984 : National Research Service Award, NIH

1983: Boston Blood Club Young Investigator Award

1984-1987: Arthur F. Thurnau Assistant Professor of Pediatrics, The University of Michigan

1985-1988: Basil O'Connor Starter Research Scholar, The March of Dimes Birth Defects Foundation

1986-1991: Established Investigator, The American Heart Association

1986: Society for Pediatric Research Young Investigator Award

1986: Elected membership: The Society for Pediatric Research
 1989: Elected membership: The American Society of Clinical Investigation
 1992-1996: Member: Hematology II Study Section, National Heart, Lung & Blood Inst., NIH
 2003: Elected membership: The American Pediatric Society
 2007: The University of Pittsburgh Pitt Innovator Award (for the identification of low molecular weight inhibitors of the c-Myc oncoprotein)
 2009: Selection of specific inhibitors of the c-Myc oncoprotein as one of the year's 12 most significant achievements in chemistry by *Chemical & Engineering News*
 2010: Hartwell Foundation nominee The University of Pittsburgh
 2012: Johnson & Johnson/University of Pittsburgh Translational Innovation Partnership Awardee
 2013: Medical Student Research Mentoring Merit Award presented to a Scholarly Project mentor of a graduating University of Pittsburgh medical student.
 2014: University of Pittsburgh Innovator Award
 2015: CureSearch Young Investigator Award to James A. Graves, MD., PhD, E.V. Prochownik, mentor
 2016: University of Pittsburgh Medical Student Research Mentoring Merit Award
 2017: David G. Nathan Research Award from the Society for Pediatric Research presented to Laura Jackson, M.D., third year Neonatal Medicine Fellow UPMC, E.V. Prochownik, M.D., Ph.D, mentor
 2017: Summer Undergraduate Student Research Program of CHP of UPMC: 2nd Place Award to Ari P. Dash, E. V. Prochownik, M.D., Ph.D., mentor
 2017: Best poster presentation, University of Pittsburgh Hillman Cancer Center Annual retreat, presented by James M. Dolezal (4th yr Univ. of Pittsburgh medical student): "Cancer as a Ribosomopathy"
 2018: Finalist for The Phillip Troen, MD Award for Excellence in Medical Student Research Mentoring, The University of Pittsburgh School of Medicine.
 2018: The Allen Humphrey Excellence in Medical Student Mentoring Award. The University of Pittsburgh School of Medicine
 2018: Best poster presentation: Dean's Summer Research Program to Ying Liu, first year University of Pittsburgh Medical Student, E.V. Prochownik, mentor.
 2020: Fullbright Scholarship awarded to Joanna Gorka, mentored University of Pittsburgh undergraduate to study miRNAs in cancer at The University of Poznan, Poland.
 2021: Excellence in Longitudinal Research Project awarded to Ying Liu, 4th year University of Pittsburgh Medical Student, E.V. Prochownik, mentor.

PROFESSIONAL ACTIVITIES

Invited Lectures (selected):

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| 03/82 | The University of Chicago Pritzker School of Medicine and Cancer Center |
| 04/85 | McMaster University, Hamilton, Ontario Canada |
| 12/87 | Subcommittee on Pediatric Hematology, The American Society for Hematology, Washington, DC |
| 09/88 | Role of Antithrombin III in Coagulation Disorders, Symposium Sponsored by Cutter Biologicals, Inc., Boston, MA |
| 03/89 | St. Jude Children's Research Hospital, Memphis, TN |
| 05/89 | The University of Chicago, Chicago, IL, Division of Hematology/Oncology |
| 05/90 | Northern Illinois University, Dekalb, IL |
| 02/91 | Keystone Symposium: Antisense Methodologies, Keystone, CO |
| 06/91 | The Washington Blood Club, Washington, DC |
| 09/91 | Plenary Session (Chairman and Invited Speaker): The American Society of Pediatric Hematology/Oncology, Chicago, IL |

- 10/92 Molecular Biology of Normal Development, Malignancy and Its Suppression: The University of Pennsylvania, School of Medicine, Philadelphia, PA.
- 01/92 Antisense Strategies, The New York Academy of Sciences, Philadelphia, PA.
- 10/93 Wright State University, Dayton, OH
- 02/96 The Johns Hopkins University School of Medicine Cancer Center, Baltimore, MD
- 02/96 The University of Utah School of Medicine, Departments of Pediatrics and Human Genetics, Salt Lake City UT
- 6/97 The Johns Hopkins Hospitals-Molecular Oncology seminar series
- 6/97 Thirteenth Annual Meeting on Oncogenes. Frederick, MD
- 6/98 Fourteenth Annual Meeting on Oncogenes and Tumor Suppressor Genes, The Salk Institute, LaJolla, CA
- 2/00 Mt. Sinai School of Medicine, Dept. of Pediatrics, New York, NY
- 2/00 Temple University School of Medicine/Fels Institute for Cancer Research, Philadelphia, PA
- 6/00 Children's Hospital of Philadelphia and The University of Pennsylvania Leukemia and Stem Cell Biology Scientific Special Interest Group
- 3/01 Keystone Symposium: Invited Speaker: "Recent Advances in the Pathogenesis and Treatment of Leukemia and Lymphoma", Keystone CO.
- 2/05 Scripps Institute-Cancer Affinity Group Seminar series, La Jolla, CA
- 7/05 Gordon Conference: "Molecular Therapeutics of Cancer". Colby Sawyers College, New London, NH. Invited speaker.
- 3/06 The Scripps Research Institute, La Jolla, CA
- 3/06 The Lankenau Institute, Philadelphia, PA
- 7/06 The University of Vermont Comprehensive Cancer Center, Burlington, VT
- 11/06: Children's Hospital of Philadelphia, Philadelphia, PA
- 4/07: The University of Rochester, Department of Pathology and Laboratory Medicine
- 10/08: Science 2008: The University of Pittsburgh Research Highlights Symposium-Invited Speaker
- 11/08: Roswell Park Cancer Institute, Buffalo, NY, Department of Cell Stress Biology
- 2/09: University of Pittsburgh Cancer Institute: Department of Hematology/Oncology
- 10/09: Invited speaker: Children's Hospital of Pittsburgh: Inaugural Symposium for the John G. Rangos, Sr. Research Center
- 3/10: The Department of Biological Sciences, The University of Pittsburgh
- 4/10: The University of Pittsburgh Cancer Institute
- 10/10: Invited speaker, "Science 2010": The University of Pittsburgh
- 11/10: Invited speaker: "Stem Cells in Cancer" symposium, The University of Pittsburgh Cancer Institute
- 12/10 Invited speaker: "Derivation of Tumor Endothelium Directly from Cancer Cells". Dept. of Oncology Research Seminar, Georgetown University School of Medicine
- 4/11: Invited speaker: Translational Approaches to Cancer Therapeutics- U.C. Irvine
- 4/11: Pfizer Inc. LaJolla, CA. Small Molecule Inhibitors of the c-Myc oncoprotein
- 5/11: University of Pittsburgh Dept. of Microbiology and Molecular Genetics
- 5/11: Children's Hospital of Pittsburgh Molecular Medicine Research Seminar: "A Surprising Origin of Human Tumor Endothelial Cells"
- 11/11: Department of Molecular Biology and Biochemistry, Wuhan University, PRC: c-Myc-Mediated Regulation of Mitochondrial Structure and Function
- 11/11: Wuhan University School of Medicine, PRC, Department of Oncology: "A Surprising Origin of Human Tumor Endothelial Cells"
- 12/12: The University of Maryland School of Pharmacy, Dept. of Pharmaceutical Sciences

- 3/13: The University of Pittsburgh Cancer Institute Molecular and Cell Cancer Biology Program Annual Retreat: Invited Speaker “c-Myc and the Control of Mitochondrial Structure and Function”
- 4/13: Invited Speaker: Annual Meeting of The American Chemical Society, New Orleans, LA. Molecular-Based Approaches Towards the Regulation of Gene Transcription. “Efficient inhibition of c-Myc by the naturally-occurring triterpenoid celastrol and its analogs”
- 10/13: Invited speaker: Cambridge Healthtech Institute: “Phenotypic Drug Discovery”, Cambridge, MA
- 10/13: The Karolinska Institute, Stockholm, Sweden: “Small Molecule Inhibitors of the c-Myc Oncoprotein”
- 6/14: Invited speaker: United Mitochondrial Disease Foundation Annual Symposium: Mitochondrial Medicine 2014: “Regulation of Mitochondrial Structure and Function by the c-Myc Oncoprotein and Cross-Talk with Energy-Sensing Pathways”
- 7/14: Invited Speaker, Pediatric Grand Rounds Children’s Hospital of Pittsburgh of UPMC: “Cancer Chemotherapy: the Dismal Past, the Optimistic Present and the Exciting Future”.
- 1/15: Internal Advisory Board: UPMC Drug Discovery Institute
- 2/16: Invited Speaker: Molecular Medicine Research Seminar Series, CHP of UPMC: Distinct Roles for c-Myc in Normal and Neoplastic Liver Metabolism and Proliferation
- 11/16: Pittsburgh Liver Research Center-“Cancer as a Ribosomopathy”
- 2/17: Invited Speaker and Session Chairman: International Conference on Genomic Medicine, Baltimore, MD. “Cancer as a Ribosomopathy”
- 2/17: Invited speaker, The University of Pittsburgh School of Pharmacy; “Cancer as a Ribosomopathy”
- 10/17: Invited speaker: 7th Regional Meeting of Translational Research on Mitochondria Aging and Disease (TriMad), Pittsburgh, PA: Efficient Normal and Neoplastic Proliferation After Genetic Dissociation of Glycolysis and the TCA Cycle
- 5/19: Invited Speaker: CHP of UPMC Molecular Medicine Research Seminar: “Predicting Cancer Survival (and More?) Based on Tumor Transcript Expression Patterns”
- 7/19: Invited Speaker: Carnegie-Mellon University, Computational Biology Program: “Predicting Cancer Survival (and More?) Based on Tumor Transcript Expression Patterns
- 10/19: Invited speaker: “Cancer R&D-2019”, Baltimore, MD: Predicting Cancer Outcome Based on Expression Patterns of Small Numbers of Functionally-Related Transcripts
- 1/20: Magee Women’s Research Institute- Predicting Cancer Survival (and more?) Based on Tumor Transcript Expression Patterns
- 7/20: Invited Speaker: Pittsburgh Liver research Center: A Novel and Potentially Actionable Metabolic Vulnerability in Liver and Other Cancers
- 10/20: Invited Speaker: “Cancer R&D-2020”: Acquired Deficiency of the Peroxisomal Enzyme Enoyl-CoA Hydratase/3-Hydroxyacyl CoA Dehydrogenase (Ehhadh) is a Metabolic Vulnerability in a Mouse Model of Hepatoblastoma

Local, National and International Committees (Select):

1993-1998 Member, Hematology II Study Section, National Heart, Lung & Blood Inst., NIH.
 1996-2005: Member Breast Cancer Research Program Study Section: Dept. of Defense U.S. Army Medical Research and Materiel Command Congressionally Directed Medical Research Program;

1996-present: Member Prostate Cancer Research Program Study Section: Dept. of Defense U.S. Army Medical Research and Materiel Command Congressionally Directed Medical Research Program
2009: Member Mesothelioma Research Program Study Section: Dept. of Defense U.S. Army Medical Research and Materiel Command Congressionally Directed Medical Research Program
2000: Advisory Board www.myc-cancer-gene.org.
2000-present: Concern Foundation for Cancer Research: scientific advisory board
2008: Susan G. Komen for the Cure Scientific Promise Grant Program scientific review panel.
2010: Reviewer: Cancer Research Program, University of Hong Kong
2010: Susan G. Komen for the Cure Era of Hope Scholars program: scientific review panel
2011: Chairman, Pediatric Cancer Panel Study Section: Dept. of Defense U.S. Army Medical Research and Materiel Command Congressionally Directed Medical Research Program
2012: Reviewer: American Institute for Cancer Research
2012: Scientific Reviewer: Deutsche Forschungsgemeinschaft (German Research Foundation)
2012: Scientific Panel Chair, Pediatric Brain Tumor Research Program, Department of Defense, U.S. Army Medical Research and Materiel Command
2013: Reviewer: Cancer Research UK
2016: Reviewer: Austrian Science Fund
2016: Member, Internal Advisory Board: Pittsburgh Liver Research Center
2016: Chairman, Special Interest Group in Cancer: Pittsburgh Liver Research Center
2016: Member, Pediatric Pediatric Brain Tumor Study Section Study Section: Dept. of Defense U.S. Army Medical
2016: Scientific Panel Chair, Pediatric Brain Tumor Research Program, Department of Defense, U.S. Army Medical Research and Materiel Command
2016-present: St. Baldrick's Foundation for Pediatric Cancer Research: Scientific reviewer
2017: Invited Reviewer: NIH FOA on Provocative Questions in Pediatric Oncology.
2018: *ad hoc* Reviewer, NIH Tumor Cell Biology Study Section
2018-present: Invited member: Pediatric Cancer Action Council
2019: Invited Reviewer: NIH U54 applications on Fusion Oncoproteins in Childhood Cancers
2019: *ad hoc* Invited Reviewer, NIH National Cancer Institute, Tumor Biology Study Section
2019: Invited contributor: "What is Hepatoblastoma" St. Baldrick's Foundation blog post
2019-present: Reviewer for University of Pittsburgh School of Medicine Physician-Scientist Training Program
2020: St. Baldrick's Foundation: Scientific Reviewer for New Investigator Awards
2020: Reviewer, NIH Special Emphasis Panel/Scientific Review Group 2020/10 ZCA1 SRB-5 (O1). Clinical and Translational R21 and Omnibus R03 Review
2020: Reviewer: Department of Defense, U.S. Army Medical Research and Materiel Command Prostate Cancer Research Program on the Cell and Molecular Biology - 1 (CMB-1) panel.

TEACHING

1986-1992: Univ. Michigan School of Medicine: Topics in Cancer Biology

1995-present: UPMC-SOM: Advanced Topics in Gene Expression-invited lecturer

1993-present: UPMC-SOM: Eucaryotic Molecular Genetics-invited lecturer

1995-1998: UPMC-SOM: preceptor in problem-based learning for first year medical students

2000: UPMC-SOM: Foundations in Biomedical Sciences: preceptor

2005-2007: UPMC-SOM: 2nd yr course facilitator

1999-2010: Advanced Eukaryotic Molecular Genetics graduate course, The University of Pittsburgh Dept. of Microbiology and Molecular Genetics, lecturer (R. Chaillet, director)

2018: UPMC-SOM: preceptor in problem-based learning for first year medical students

2020: UPMC-SOM: second year medical student facilitator for small group sessions in Hematology Oncology

EDITORIAL/ADVISORY BOARDS

1997-present: Editorial Board: *Frontiers in Bioscience*

2002-present: Advisory Board: *Myc Cancer Gene Hubsite* (www.myc-cancer-gene.org)

2007-present: Editorial Board: *International Journal of Biological Chemistry*

2007-present: Editorial Board: *International Journal of Cancer Research*

2010-present: Editorial Board: *OncoTarget*

2011-present: Editorial Board: *Frontiers in Molecular and Cellular Oncology*

2011-present: Editorial Board: *TheScientificWorldJOURNAL*.

2013-present: Editorial Board: *Journal of Oncobiomarkers*

2015-present: Editorial Board: *Oncoscience*

2017-present: Editorial Board: *Annals of Pediatric Research*

2017-present: Editorial Board: *Cancer & Metastasis Research*

2019-present: Editorial Board: *Cells*

2019-present: Editorial Board: *Journal of Cancer and Oncology*

2020-present: Editorial Board: *Cancers*

2021-present: Editorial Board: *Precision Cancer Medicine*

Ad Hoc Scientific Reviewer-Journals:

Advanced Science

American Journal of Hematology

American Journal of Pathology

American Journal of Physiology-Cell Physiology

Anti-Cancer Drugs

Archives of Biochemistry and Biophysics

Biochemica et Biophysica Acta

Bioscience Reports

Biotechniques

Blood

Cancer Letters

Cancer Research

Cancers

Cell Death & Differentiation

Cells

Cellular and Molecular Gastroenterology and Hepatology

Circulation Research

Clinical and Translational Medicine

Current Biology

European Journal of Cell Biology
Experimental Cell Research
FEBS Letters
Free Radical Biology and Medicine
Frontiers in Molecular and Cellular Oncology
Frontiers in Oncology
Future Oncology
International Journal of Cancer
International Journal of Medical Sciences
Journal of the American Chemical Society
Journal of Biological Chemistry
Journal of Biological Methods
Journal of Biomolecular Structure & Dynamics
Journal of Cell Biology
Journal of Molecular Biology
Journal of Molecular Medicine
Journal of the National Cancer Institute
Medical Science Monitor
Metabolites
Molecular Cancer Research
Molecular Cancer Therapeutics
Molecular and Cellular Biology
Molecular Therapy
Mitochondrion
Nature Communications
Nature Reviews Cancer
Nature Reviews Clinical Oncology
Neoplasia
New Journal of Science
Nucleic Acids Research
Oncogene
Oncotarget
PLoS One
Proceedings of the National Academy of Sciences
Science
Scientific Reports
Scientific World Journal
Tumor Biology
Urology

GRANT SUPPORT

ACTIVE

1. Grant no. 1R01 CA174713

Title: Control of Metabolism and Energy-Sensing Pathways by c-Myc

Funding Agency: NIH

PI: Prochownik

Period: 07/01/14-6/30/19

% effort: 10

Total first year's costs (direct and indirect): \$338,376

Total first year's cost (direct and indirect): \$1,638,864

2. Grant no. 1U54CA199092

Title: Project 1: Pre-Clinical and Clinical Imaging and Treatment of Multiple Myeloma with C-Myc-Max Nanoparticles

Funding Agency: NIH

PI: Gregory Lanza, MD (Washington Univ. School of Medicine)

Period: 9/1/15-8/31/20

% effort: 10

Total first year's costs (direct and indirect): \$105,521

Total amount of award (direct and indirect): \$396,705

3. Grant no. 522000

Title: Ribosomopathy-like properties of Cancers

Funding Agency: Hyundai Hope on Wheels (Hyundai Corp.)

PI: Prochownik

Period: 6/1/17-5/31/19

% effort: 10

Total first year's costs (direct): \$125,000

Total amount of award: \$250,000

4. Grant no. None

Title: Patient-Derived NFE2L2/NRF2 Mutations Promote Aggressive Forms of Hepatoblastoma.

Funding Agency: The V Foundation

PI: Prochownik

Period: 9/1/20-8/31/21

% effort: 10

Total first year's costs (direct and indirect): \$150,000

RECENTLY COMPLETED

1. Grant no.: 5 R01 140624

Title: Structure-based design of novel low molecular weight c-Myc inhibitors

Funding Agency: NIH

PI: Prochownik

Period: 07/01/2009-06/30/2014

% effort: 10

Total first year costs (direct and indirect): \$442,463

2. Grant no: State of Pennsylvania

Title: Studies on Breast Cancer Stem Cells

Funding Agency: State of PA/Tobacco Funds

PI: Prochownik

Period: 01/01/2010-12/31/2013

% effort: 21

Total first year costs (direct and indirect): \$298,239

3. Grant no: NExT-CBC Project ID 562

4. Grant no.: 5 R01 CA078259

Title: C-, N-, and L-MYC effects on hematopoietic cells

Funding Agency: NIH

PI: Prochownik

Period: 04/01/1999-04/30/2010

% effort: 25

Total amount of award: \$1,892,788

5. Grant no: 2R01 CA105033

Title: Regulation of and by the c-Myc oncoprotein

Funding Agency: NIH

PI: Prochownik

Period: 07/01/04-6/30/09

% effort: 20

Total amount of award: \$1,793,750

6. Grant no: BC103217

Title: Why are Breast Cancer Stem Cells Resistant to Radiation?

Funding Agency: Department of Defense

PI: Lee (Prochownik co-I)

Period: 3/1/11-3/31/12

% effort: 5

Total first year cost (direct and indirect): \$75,000

7. Grant ID: KG101468

Title: Identifying Chemosensitivity Nodes and Small Molecules Regulating Breast Cancer Stem Cell Proliferation and Survival

Funding Agency: Susan G. Komen Foundation

PI: Prochownik (Cost share with Lazo)

Period: 8/20/10-8/19/12

% effort: 2. This is a post-doctoral fellowship award to support the efforts of Dr. Fang Zhang

Total first year cost (direct and indirect): \$60,000 (cost Share with Dr. John Lazo)

8. Title: Evaluation of Rationally-Designed Small Molecules Directed Against the c-Myc Oncoprotein

Funding Agency: NIH SAIC-Frederick (NCI contractor)

PI: Prochownik

Period: 11/01/2010-10/31/2012

% effort: 10

Total first year costs (direct and indirect): \$96,200

PREVIOUS SUPPORT

NIH RO1 HL32203 - Human Antithrombin III (ATIII) Genes and the Coagulopathy of ATIII Deficiency; 7/1/84-6/30/87; Total direct cost: \$232,465. PI

Children's Leukemia Foundation of Michigan - Molecular Basis of Friend Leukemia Cell Differentiation; 7/1/86-6/30/88; Total direct cost: \$59,705. PI

American Heart Association of Michigan - Control of Human Antithrombin III Gene Transcription; 7/1/86-6/30/90; Total direct cost: \$71,875. PI

American Heart Association: Established Investigator Award - Studies of the Human Antithrombin III Gene and the Role of Proto-oncogenes in Erythroid Differentiation; 7/1/86- 6/30/91; Total direct cost: \$175,000.

March of Dimes Birth Defects Foundation: Basil O'Connor Starter Research Grant -Molecular Aspects of Erythroid Cell Differentiation; 9/1/86-8/31/88; Total direct cost: \$54,540.

The Council for Tobacco Research - The Role of the Retinoblastoma Gene in Fibroblastic Tumors of BPV-1 Transgenic Mice; 1/1/89-12/31/91; Total direct cost: \$93,812. PI

NIH RO1 HL33741 - Molecular Biology of Hematopoietic Differentiation; 7/1/87-6/30/92; Total direct cost: \$532,471. PI

American Heart Association of Michigan - Genes Regulating Erythroid Development; 7/1/89-6/30/92; Total direct cost: \$68,000. PI

NIH RO1 CA54898 - Signaling Pathways of Transforming Oncogenes; 4/1/92-3/31/97; Total direct cost: \$819,655. PI

NIH RO1 HL33741- Molecular Biology of Hematopoietic Differentiation (Competitive renewal); 7/1/92-6/30/97; Total direct cost: \$1,296,307. PI

NIH RO1 HL33741- "Molecular Biology of Hematopoietic Differentiation" (Competitive renewal); 9/1/97-8/31/01; Total direct cost: \$1,247,964. PI

NIH R33 CA83219-"Technologies for Comprehensive Functional Proteomics". 4/1/00-3/31/03. Jonathan Jarvik, Ph.D., PI (Carnegie Mellon University). Total direct cost \$2,569,343. Subcontract to Edward V. Prochownik, co-PI, total direct cost \$313,325.

PC991016-United States Army Medical Research and Material Command and Department of Defense Prostate Cancer Research Program. "Development of Rapid *In Vivo* and *In Vitro* Assays to Detect and Quantify Myc Network Protein Associations". 10/1/99-9/30/03. Total direct cost \$375,000. PI. Edwin S. Levitan, Co-PI.

W81XWH-04-1-0226-United States Army Medical Research and Material Command and Department of Defense Prostate Cancer Research Program. "Development of Molecular Inhibitors of the c-Myc Oncoprotein. 12/1/03-11/30/06. Total Direct cost: \$496,484

PATENTS

2006: Pharmacologic inhibition of Myc Function. U.S. Patent No. 7,026,343

2009: Cancer Stem Cell Immortalization Pat pend (Assignment PCT/US09/43396)

2010: Small Molecule Inhibitors of Cancer Stem Cells. Pat pend (Assignment 61/176414)

2010: Methods for Selectively Inhibiting Cancer Stem Cells (Provisional Assignment 61/325,108)

2017: A Diagnostic and Prognostic Test for Multiple Cancer Types Based on Ribosomal Protein

Transcript Profiling (Assignment 62/533,293)

SERVICE (SELECTED)

- 1985-1992: Member: Admissions Committee, The Committee on Cellular and Molecular Biology, The University of Michigan Medical School
- 1985-1991: Member: Program Committee, The Committee on Cellular and Molecular Biology, The University of Michigan
- 1986-1991: Member: Executive Committee, Center for Molecular Genetics, The University of Michigan
- 1987-1992: Head, Molecular Mechanisms of Gene Regulation Basic Science Program, University of Michigan Comprehensive Cancer Center
- 1988: Reviewer of Abstracts in Coagulation: The American Society of Hematology
- 1989: Member: Council on Basic Science, American Heart Association
- 1989: Member: Executive Board, The Children's Leukemia Foundation of Michigan
- 1989: Member: Search Committee for Chief of Division of Pediatric Genetics, The University of Michigan
- 1990-1992: Director of Student Admissions, The Committee on Cellular and Molecular Biology, The University of Michigan
- 1991: Member: Search Committee, Department of Human Genetics and Division of Pediatric Genetics, Department of Pediatrics, The University of Michigan
- 1991: Reviewer of Abstracts in Molecular Oncology: American Society of Hematology
- 1991-1992: Director, Core Laboratory, Children's Health Research Center, Department of Pediatrics, The University of Michigan, School of Medicine
- 1990-1993: Member, Hematology 2 Study Section, National Heart, Lung and Blood Institute, National Institutes of Health.
- 1992-1997: Director, Molecular Oncology Basic Research Program, University of Pittsburgh Cancer Institute
- 1993: Reviewer: Program Project Grant, Roswell Park Cancer Institute, Buffalo, NY. J. Huberman, PI
- 1993-2010: Invited lecturer: Graduate Pharmacology Course: "Receptors and Signal Transduction"
- 1994-2012: Invited lecturer: Graduate Molecular Genetics and Biochemistry Course:

"Transcription Factors"

1994-1997: Course Facilitator for first year medical students: "Molecular and Human Genetics", The University of Pittsburgh School of Medicine

1995: Reviewer: Markey Gene Therapy Research Review Committee, Pittsburgh Cancer Institute

1995: *Ad Hoc* Reviewer: National Science Foundation: Biochemical Genetics and Signal Transduction.

1995: Reviewer: Ohio Cancer Research Associates

1995-present: Chairman Children's Hospital of Pittsburgh Dept. of Pediatrics Research Advisory Committee

1995: Reviewer: Molecular and Cell Biology Study Section, California Breast Cancer Research Program

1995-1997: Course facilitator: Genetics Section of Problem-Based Learning curriculum for first year medical students, the University of Pittsburgh School of Medicine.

1996-present: Member: Review Committee for the University of Pittsburgh Medical Center Competitive Medical Research Fund

1996: Member, National Cancer Institute Site Visit Team for continuation of Cancer Center Support Grant at The Wistar Institute, G. Rovera, Director

1997: Member: Search Committee for Associate Director of The University of Pittsburgh Cancer Institute

1997: Member, Search Committee for Scientific Director, University of Pittsburgh Cancer Institute

1997-1999: ASCI Institutional Representative: The University of Pittsburgh Medical Center

1997: Reviewer of Abstracts in Molecular Oncology: American Society of Hematology

1998-2007: Reviewer: Department of Defense/U.S. Army Medical Research and Materiel Command: Prostate Cancer Research Program-Molecular Biology Section

1998-2007: Reviewer: Department of Defense/U.S. Army Medical Research and Materiel Command Breast Cancer Research Program-Molecular Biology Section

1998: Reviewer: Program Project Grant; Jefferson Medical College, Philadelphia, PA, B. Calabretta, PI.

1998: *Ad hoc* reviewer: The Wellcome Trust

1999: Member: Research Strategic Planning Committee, Children's Hospital of Pittsburgh

1999: Member: Research Space Utilization Committee, Children's Hospital of Pittsburgh

2000-present: Member, Scientific Advisory Committee, Concern Foundation, Los Angeles, CA

2000: Reviewer: NHLBI, National Institutes of Health. Specialized Center of Research (SCOR) in Hematopoietic Stem Cell Biology, Fred Hutchinson Cancer Research Center, Irwin Bernstein, PI

2000: Member: Site Visit Team: National Cancer Institute- Medicine Branch: Division of Cell and Cancer Biology. Intramural Review Panel

2002: Committee head to evaluate fellowship training, Children's Hospital of Pittsburgh

2002-2010: Director of T32-funded training program for laboratory training of pediatric fellows in cell and molecular biology (PI: David Perlmutter, M.D.)

2004: Reviewer: Biotechnology and Biological Sciences Research Council of The United Kingdom

2004-present: Children's Hospital of Pittsburgh, Cochrane-Weber Endowment Fund in Diabetes Research: member of oversight committee

2005: *Ad hoc* reviewer: Swiss National Science Foundation

2006: *Ad hoc* reviewer: Cancer Research United Kingdom

2007: *Ad hoc* reviewer: Health Research Board of Ireland

2009-2011: Reviewer: Department of Defense/U.S. Army Medical Research and Materiel Command: Mesothelioma Research Program

2010: Reviewer: Department of Defense/U.S. Army Medical Research and Materiel Command: Era of Hope Scholars in Breast Cancer

2012: Reviewer: Department of Defense/U.S. Army Medical Research and Materiel Command: Pediatric Brain Tumors-Genetic Cancer Research

2015: Reviewer: World-Wide Cancer Research (AICR)

2016: Reviewer: Austrian Science Fund

2016: Chairman: Department of Defense/U.S. Army Medical Research and Materiel Command: Genetic Cancer Research

2017: Study Section member, NIH Special Emphasis Panel: Provocative Questions in Pediatric Cancer Research

2017-2020: Member, University of Pittsburgh School of Medicine Tenure and Promotions Committee

2018-present: Interviewer: UPMC Childrens' Hospital of Pittsburgh, Residency Application

Review Committee

2019: *Ad hoc* member NIH Tumor Cell Biology Study Section

2019-present: Reviewer applications to The University of Pittsburgh School of Medicine Physician Scientist Training Program (PSTP)

PUBLICATIONS

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