BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Joseph T. Nickels, Jr., Ph.D.	Director, Institute of Metabolic Disorders
eRA COMMONS USER NAME nickels1	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Rider University, Lawrenceville, NJ	B.S.	1988	Biochemistry
UMDNJ/Rutgers University, New Brunswick, NJ	Ph.D.	1993	Microbiology and Molecular Genetics
Princeton University	Postdoc	1993-1997	Molecular Biology/Genetics

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

A. PROFESSIONAL POSITIONS:

1993-1997 Postdoctoral Fellow, Department of Molecular Biology, Princeton University
1997-2004 Assistant Professor, Department of Biochemistry, Drexel University College of Medicine
2005-2007 Associate Professor, Department of Biochemistry and Molecular Biology, Drexel University College of Medicine
2007-2010 Research Team Leader, Division of Pharmacogenomics, Medical Diagnostic Laboratories, Hamilton, NJ 08690
2007- Adjunct Associate Professor, Department of Biochemistry, Drexel University College of Medicine
2008-2013 Volunteer Professor, Department of Molecular Biology, UMDNJ-School of Osteopathic Medicine
2009-2010 Scientific Director, Venenum BioDesign L.L.C., Hamilton, NJ 08691
2010-2012 Director, Target Biology, Venenum BioDesign L.L.C., Hamilton, NJ 08691
2012- Member, Rutgers University Center for Lipid Research
2013- Director, IMD, The Institute of Metabolic Disorders, Hamilton, NJ 08691
2013- Volunteer Professor, Department of Molecular Biology, Rowan University School of Medicine
2015- Member, Rutgers University Institute for Food, Nutrition, and Health

PROFESSIONAL AWARDS AND HONORS:

1994-1997 New Jersey Commission on Cancer Research Postdoctoral Fellow
2000-2002 Basil O'Connor Scholar, March of Dimes Foundation
2006- Editorial Board, Analytical Biochemistry
2011- Editorial Board, Journal of Biological Chemistry
2011- ad hoc reviewer, Fungal Genetics and Biology
2011- ad hoc reviewer, Journal of Medical Microbiology
2011- ad hoc reviewer, Journal of Eukaryotic Microbiology
2012- ad hoc reviewer, Nature
2012- reviewer, Health Research Council of New Zealand

2013- ad hoc reviewer, PLOS One
2013- ad hoc reviewer, Nature Chemical Biology
2015- Editorial Board, PLOS ONE
2015- Editorial Board, Nutrition and Metabolism

B. PUBLICATIONS:

1. Buxeda, R.J., Nickels, Jr., J.T., Belunis, C.J., and Carman, G.M. (1991). Phosphatidylinositol 4-kinase from *Saccharomyces cerevisiae*. Kinetic analysis using Triton X-100/ phosphatidylinositol mixed micelles. *J. Biol. Chem.* **266**: 13859-13865.

2. Quinlan, J.J., Nickels, Jr., J.T., Wu, W-I. , Lin, Y.P., Broach, J.R., and Carman, G.M. (1992). The 45-kDa and 104-kDa forms of phosphatidate phosphatase from *Saccharomyces cerevisiae* are regulated differentially by phosphorylation via cAMP-dependent protein kinase. *J. Biol. Chem.* **267**: 18013-18020.

3. Nickels, Jr., J.T., Buxeda, R.J., and Carman, G.M. (1992). Purification, characterization, and kinetic analysis of a 55-kDa form of phosphatidylinositol 4-kinase from *Saccharomyces cerevisiae*. *J. Biol. Chem*. **267**: 16297-16304

4. Buxeda, R.J., Nickels, Jr., J.T. and Carman, G.M. (1993). Regulation of the 45- and 55-kDa forms of phosphatidylinositol 4-kinase from the yeast *Saccharomyces cerevisiae* by nucleotides. *J. Biol. Chem.* **268**: 6248-6255.

5. Nickels, Jr., J.T. and Carman, G.M. (1993). Photoaffinity labeling of the of the 45-kDa and 55-kDa forms of phosphatidylinositol 4-kinase from the yeast *Saccharomyces cerevisiae*. *J. Biol. Chem.* **268**: 24083-24088.

6. Nickels, Jr., J.T., Buxeda, R.J., and Carman, G.M. (1994). Regulation of phosphatidylinositol 4-kinase from the yeast *Saccharomyces cerevisiae* by CDP-diacylglycerol. *J. Biol. Chem.* **269**: 11018-11024

7. Wu, W-I., McDonough, V.M., Nickels, Jr., J.T., Ko, J., Fischl, A.S., Vales, T.R., Merrill, Jr., A.H., and Carman, G.M. (1995). Regulation of lipid biosynthesis in *Saccharomyces cerevisiae* by fumonisin B_1 *J. Biol. Chem*. **270**: 13171-13178

8. Nickels, Jr., J.T., and Broach, J.R. (1996). A ceramide-activated protein phosphatase mediates ceramide-induced G1 arrest of *Saccharomyces cerevisiae*. *Genes & Dev.* **10**: 382-394.

9. Carman, G.M., R.J. Buxeda, and J.T. Nickels, Jr. (1996). Phosphatidylinositol 4-kinases in *Saccharomyces cerevisiae* in *Advances in Lipobiology* (Gross, R.W., ed.). Jai Press. Greenwich CT. 367-385.

10. Mandala, S., Thornton, R., Tu, Z., Kurtz, M., Nickels, Jr., J.T., Broach, J.R., Mendeleev, R., and Spiegel, S. (1998) Sphingosine 1-phosphate phosphatase, a key regulator of sphingoid metabolism and stress response. *Proc. Natl. Acad. Sci.* **95**: 150-155

11. Henry, K.W., Nickels, Jr., J.T., and Edlind, T.D. (2000). Upregulation of *ERG* genes in *Candida* species by azoles and other sterol biosynthesis inhibitors. *Antimicrob. Agents Chemother.* **44**: 2693-2700.

12. Baudry, K., Swain, E., Rahier, A., Germann, M., Batta, A., Henry, K., Rondet, S., Tint, G.S., Edlind, T., Mandala, S., Kurtz, M., and Nickels, Jr., J.T. (2001). The effect of the *erg26-1* mutation on lipid metabolism and regulation. *J. Biol. Chem* **276**: 12702-12711.

13. Swain, E, Stukey, J, McDonough, V, Baudry, K, Germann, M, Allegood, J, Merrill, A, Mandala, S, Kurtz, M, and Nickels, Jr, J.T. (2002). Sterol-dependent regulation of sphingolipid biosynthesis in Saccharomyces cerevisiae*. J. Biol. Chem.* **277** 26177-26184.

14. Swain, E, Stukey, J, McDonough, Germann, Lui, L., Sturley, S. and Nickels, Jr, J.T. (2002). Yeast cells lacking the *ARV1* gene harbor defects in sphingolipid metabolism: Complementation by human *Arv1*. *J. Biol. Chem*. **277** 36152-36160.

15. Mo, C., Valachovic, M., Randall, S.K., Nickels, J.T., and Bard, M. (2002). Protein-protein interactions among C-4 demethylation enzymes involved in yeast sterol biosynthesis. *Proc. Natl. Acad. Sci. USA.* **99** 9739-9744.

16. Edlind, T., Smith, L., Henry, K., Katiyar, S., and Nickels, Jr., J.T. (2002). Antifungal activity in *Saccharomyces cerevisiae* is modulated by calcium signalling. *Mol. Micro.* **46** 257-68.

17. Henry, K., Nickels, Jr., J.T., and Edlind, T. (2002) *ROX1 and ERG* regulation in *Saccharomyces cerevisiae*: implications for antifungal susceptibility. *Eukaryot. Cell* **1** 1041-4

18. Scherbik, N., Zoladek, T., Nickels, J.T., and Haines, D.S. (2003) Rsp5p is required for ER bound Mga2p120 polyubiquitination and release of the processed/tethered transactivator Mga2p90. *Cur. Biol*. **13** 1227-1232

19. Rice, L., Gallo, C., Plakas, C., and Nickels, J.T. (2005) The loss of re-replication block in yeast cells defective for Cdc28 regulation. *Eukaryot. Cell* **4** 55-62

20. Germann, M., Swain, E., Bergman, L., and Nickels, J.T. (2005) Characterizing the sphingolipid signaling pathway that remediates defects associated with loss of the yeast amphiphysin-like orthologs, Rvs161p and Rvs167p. *J. Biol. Chem*. **280** 4270-4278

21. Germann, M., Gallo, C., Donahue, T., Shirzadi, R., Stukey, J., Lang, S., Ruckenstuhl, C., Oliaro-Bosso, S., McDonough, V., Turnowsky, F., Balliano, G., and Nickels, Jr., J.T. (2005) Characterizing sterol defect suppressors uncovers a novel transcriptional signaling pathway regulating zymosterol biosynthesis *J. Biol. Chem*. **280** 35904-35913

22. Fores, O., Arro, M., Pahissa, A., Ferrero, S., Germann, M., Stukey, J., McDonough, V., Nickels, J. T., Campos, N., and Ferrer, A., (2006**)** Arabidopsis thaliana expresses two functional isoforms of Arvp, a protein involved in the regulation of cellular lipid homeostasis. *Biochim Biophys Acta*. **1761** 725-35.

23. McCourt, P., Nickels, J., Ishino, T., and Chaiken, I. (2007) Protein Recognition in Biology. In: *Handbook of Biosensors and Biochips*, Marks, R.S., Cullen, D.C., Karube, I., Lowe, C.R., and Weetall, H.H., Eds., John Wiley and Sons

24. McCourt, P., Morgan, J., and Nickels, Jr., J.T. (2009) Stress-induced ceramide-activated protein phosphatase can compensate for loss of amphiphysin-like activity in Saccharomyces cerevisiae and functions to reinitiate endocytosis. *J. Biol. Chem.* **284** 11930-11941

25. Morgan, J., McCourt, P., Rankin, L., Swain, E., Rice, L.M., and Nickels, Jr., J.T. (2009) Altering sphingolipid metabolism in yeast cells lacking the amphiphysin ortholog, Rvs161, re-initiates sugar transporter endocytosis. *Eukaryot. Cell* **8** 779-789

26. Villasmil, M.L., Ansbach, A., and Nickels, Jr., J.T. (2011) The putative lipid transporter, Arv1, is required for activating pheromone-induced MAP kinase signaling in *Saccharomyces cerevisiae*. *Genetics* **187** 455-465

27. Nolt, J.K., Rice, L.M., Gallo-Ebert, C., Bisher, M.E., and Nickels, Jr., J.T. (2011) $PP2A^{Cdc55}$ is required for multiple events during meiosis I. *Cell Cycle* **10** 1420-1434

28. Villasmil, M.L., and Nickels, Jr., J.T. (2011) Determination of the membrane topology of Arv1 in *Saccharomyces cerevisiae* and the requirement of the ER luminal region for Arv1 function. FEMS Yeast Res. **11** 524-527

29. Gallo-Ebert, C., McCourt, P.C., Donigan, M., Villasmil, M.L., Pandya, D., Franco, J., Chadwick, S.G., Gygax, S.E., and Nickels, Jr., J.T. (2012) Arv1 lipid transporter function is conserved between pathogenic and nonpathogenic fungi. Fungal Genetic. Biol. **49** 101-113

30. McCourt, P., Gallo-Ebert, C., Gonhong, Y., Jiang, Y., and Joseph T. Nickels, Jr. (2013) $PP2A^{Cdc55}$ regulates G_1 cyclin stability. Cell Cycle **12** 1201-1210
*Article featured in Cell Cycle "*News and Views*". Noguchi, E (2013) $PP2A^{Cdc55}$, a possible therapeutic target in cyclin D1-dependent cancers. Cell Cycle **12** 1484

31. Gallo-Ebert, C., Donigan, M., Liu, H-Y., Pascual, F., Manners, M., Pandya, D., Swanson, R., Gallagher, D., Chen, W., Carman, G.M., Nickels, Jr., J.T. (2013) The yeast anaerobic response element $AR1_b$ regulates aerobic antifungal drug-dependent sterol gene expression. J. Biol. Chem. **288** 35466-35477

32. Gallo-Ebert, C., Donigan, M., Stroke, I.L., Swanson, R.N., Manners, M.T., Francisco, J., Toner, G., Gallagher, D., Huang, C-Y., Gygax, S.E., Webb, M., and Nickels, Jr., J.T. (2014) Novel antifungal drug discovery based on targeting pathways regulating the fungal-conserved Upc2 transcription factor. Antimicrob. Agents and Chemother. **58** 258-266

32. Yang, M., Liu, W., Pellicane, C., Sahyoun, C., Joseph, B., Gallo-Ebert, C., Donigan, M., Pandya, D., Giordano, C., Bata, A, and Nickels, Jr., J.T. (2014) Identification of miR-185 as a regulator of *de novo* cholesterol biosynthesis and low-density lipoprotein uptake. J. Lipid Res. **55** 226-238

34. Rice, L. M., Donigan, M., Yang, M., Liu, W., Pandya, D., Joseph, B., Sodi, V., Gearhart, T. L., Yip, J., Bouchard, M. B., and Nickels, Jr., J. T. (2014) Protein phosphatase 2A regulates low-density lipoprotein uptake through regulating SREBP-2 DNA binding J. Biol. Chem. **289** 17268-17279

35. Joseph, B., Liu, H-Y., Francisco, J., Pandya, D., Donigan, M., Gallo-Ebert, C., Giordano, C., Bata, A., Nickels, Jr., J.T. (2015) Inhibition of AMP kinase by the protein phosphatase 2A heterotrimer, $PP2A^{Ppp2r2d}$ J. Biol. Chem. **290** 10588-10598

36. Pallai, R., Bhaskar, A., Burnett-Bernodat, N., Gallo-Ebert, C., Michelle Pusey, Nickels, Jr., J. T., Rice, L. M. (2015) Cancerous inhibitor of protein phosphatase 2A (CIP2A) promotes premature chromosome segregation and aneuploidy in prostate cancer cells through association with shugoshin. Tumor Biol. **36** 6067-6074

37. Pallai, R., Bhaskar, A., Burnett-Bernodat, N., Gallo-Ebert, C., Nickels, Jr., J. T., Rice, L. M. (2015) Leucine rich repeat-containing protein 59 mediates nuclear import of cancerous inhibitor of PP2A in prostate cancer cells. Tumor Biol. **36** 6368-6390

38. Yang, M. and Nickels, Jr., J.T. (2015) MOGAT: A new therapeutic target for metabolic syndrome. Diseases **3** 179-192

39. Villasmil, M. L., Francisco, J., Gallo-Ebert, C., Donigan, M., Liu, H-Y., Brower, M., and Nickels, J. T., Jr. (2016) Ceramide signals for initiation of yeast mating-specific cell cycle arrest. Cell Cycle **15** 441-454
*Article featured in Cell Cycle "*News and Views*". Matmati N, Kitagaki, and Hannun, YA (2016) New role for ceramide in the pheromone response. Cell Cycle **15** 617-618

40. McCourt, P., Liu, Hsing-Yin., Parker, J.E., Gallo-Ebert, C., Donigan, M., Bata, A., Giordano, C., Kelly, SL., and Nickels, JT., Jr. Proper sterol distribution is required for *Candida albicans* hyphal formation and virulence (2016) G3: Genes, Genomes, Genetics (*in press*)

PATENTS

1. Yang, G., Pellicane, C.A., and Nickels, Jr., J.T. (2016) A method of enhancing miR-185 expression to reduce low density lipoprotein/cholesterol accumulation in a cell. Patent # 9,243,250 B2

C. FUNDING

Extramural

1. Title: The regulation of sterol biosynthesis and transport in the yeast *S. cerevisiae*.
P.I.: J. Nickels — Funding Source: American Heart Association (S.E. Penn. Affiliate) #9805529U
Type: Beginning Investigator — Period: 7/01/98 – 6/30/2000

2. Title: Eukaryotic sphingolipid metabolism and function.
P.I.: J. Nickels — Funding Source: March of Dimes
Type: Basil O'Connor Award — Period: 2/01/2000 – 1/31/2002

3. Title: Transcriptional and post-translational mechanisms regulating zymosterol biosynthesis.

P.I.: J. Nickels Funding Source: American Heart Association (Penn/Del Affiliate)
Type: Grant-In-Aid Period: 7/01/2000 – 6/31/2002

4. Title: Signaling pathways in yeast azole response.
P.I.: T. Edlind Funding Source: NIAID
Co-PI: J. Nickels
Type: R01 Period: 07/01/01 – 6/30/06

5. Title: Mechanisms regulating sterol biosynthesis.
P.I.: J. Nickels Funding Source: NHLBI
Type: R01 Period: 12/01/01 – 11/30/05

6. Title: Isolating novel regulators of SRB1 expression.
P.I.: J. Nickels Funding Source: W. W. Smith Charitable Trust
Type: Competitive Period: 1/01/05 – 12/31/06

INTRAMURAL

1. Title: Analyzing the expression patterns of novel genetic markers in various human tumors.
P.I.: J. Nickels Funding Source: Pennsylvania Tobacco Fund
Type: Institutional Period: 7/01/2002 – 6/30/2004

2. Title: Characterization of novel human genes required for nonhomologous endjoining.
P.I.: J. Nickels Funding Source: Pennsylvania Tobacco Fund
Type: Institutional Period: 7/01/2003 – 6/30/2004