

Dr. Duncan Odom  
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Professor Yves Brun,  
Systems Biology/Microbiology Faculty Search,  
Department of Biology,  
Indiana University,  
Jordan Hall 142, 1001 E 3rd St,  
Bloomington IN 47405-7005

October 25, 2005

Dear Professor Brun:

I am a research scientist in Richard Young's laboratory at the Whitehead Institute, and I would like to be considered as a candidate for a tenure-track assistant professor position at the University of Indiana in Systems Biology, as advertised on your website.

During my postdoctoral fellowship, I investigated how the hepatocyte nuclear factor (HNF) family of transcriptional regulators control gene expression in human liver and pancreatic islets. The regulatory circuitry I uncovered suggests how misregulation of HNF4 $\alpha$  can cause the basal transcriptional machinery to be disrupted, thereby disrupting insulin secretion and causing diabetes.

My proposed research plan builds on my postdoctoral work by continuing to explore the regulatory circuitry of human cells and gain insight into development, disease, and tissue specification. Understanding the exact roles master regulators play in defining the beta-cell phenotype would also help guide otherwise haphazard attempts to create beta-cells from other cell types such as embryonic stem cells or hepatocytes.

I have entered my mentors contact information into your application website, and this is also available on my CV. I hope to hear from you soon.

Best Regards,

Duncan Odom

# DUNCAN ODOM

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## EDUCATION

<b>B.A.</b> Chemistry/Mathematics	<i>New College of Florida</i>	<b>6/94</b>
<b>Ph.D.</b> Chemistry	<i>California Institute of Technology</i>	<b>5/01</b>

*Advisor:* Professor Jacqueline K. Barton

## POSITIONS HELD

<b>Postdoctoral Fellow</b>	<i>Whitehead Institute / MIT</i>	<b>7/01 – 2/05</b>
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*Advisor:* Professor Richard A. Young

<b>Research Scientist</b>	<i>Whitehead Institute / MIT</i>	<b>2/05 – present</b>
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## HONORS AND AWARDS

National Merit Scholar	<b>8/88</b>
NRSA Predoctoral Trainee	<b>6/95</b>
Caltech Chemistry Outstanding Teaching Award	<b>6/99</b>
Ralph M. Parsons Research Fellowship	<b>6/99</b>
Sloan Foundation-DOE Postdoctoral Fellowship in Computational Biology	<b>9/01</b>
NIDDK K25 Mentored Quantitative Research Career Development Award	<b>6/05</b>

## PUBLICATIONS

- D. T. Odom**, C. S. Parker, J. K. Barton. "Site-Specific Inhibition of Transcription Factor Binding to DNA by a Metallointercalator," *Biochemistry* **38** (1999) 5155-5163.
- K. E. Erkkila, **D. T. Odom**, J. K. Barton. "Recognition and Reaction of Metallointercalators with DNA," *Chemical Reviews* **99** (1999) 2777-2796.
- D. T. Odom**, C. J. Gramer, S. A. Hildebrand, S. E. Sherman. "Synthesis and Characterization of Magnesium and Zinc Complexes of 1,4,7-Triazacyclononane-N-Acetate. Potential Models for the Active Site of RuBisCo," *Inorganica Chimica Acta* **247** (2000) 404-411.
- D. T. Odom**, E. A. Dill, J. K. Barton. "Robust Charge Transport in DNA Double Crossover Assemblies," *Chemistry & Biology* **7** (2000) 475-481.
- D. A. Vivic, **D. T. Odom**, M. E. Nunez, D. A. Gianolio, L. W. McLaughlin, J. K. Barton. "Oxidative Repair of a Thymine Dimer in DNA from a Distance by a Covalently Linked Organic Intercalator," *J. Am. Chem. Soc.* **122** (2000) 8603-8611.
- T. T. Williams, **D. T. Odom**, J. K. Barton. "Variations in DNA Charge Transport with Nucleotide Composition and Sequence," *J. Am. Chem. Soc.* **122** (2000) 9048-9049.
- D. T. Odom**, E. A. Dill, J. K. Barton. "Charge Transport Through DNA Four-Way Junctions," *Nucleic Acids Research* **29** (2001) 2026-2033.
- D. T. Odom**, J. K. Barton. "Long Range Oxidation of Guanines in RNA/DNA Hybrid Duplexes," *Biochemistry* **40** (2001) 8727-8737.
- T. I. Lee<sup>†</sup>, N. J. Rinaldi<sup>†</sup>, F. Robert<sup>†</sup>, **D. T. Odom**, Z. Bar-Joseph, G. Gerber, N. Hannett, C. Harbison, C. Thompson, I. Simon, J. Zeitlinger, E. Jennings, H. Murray, D. Gordon, B. Ren, J. Wyrick, J. Tagne, T. Volkert, E. Fraenkel, D. Gifford, R. A. Young. "Transcriptional Regulatory Networks in *Saccharomyces cerevisiae*," *Science* **298** (2002) 799-805. <sup>†</sup>Co-first
- Accompanying News and Views:* Z. N. Oltvai, A.-L. Barabasi. "Life's Complexity Pyramid." *Science* **298** (2002) 763-764.

## PUBLICATIONS (cont'd)

- D. T. Odom**, N. Zizlsperger, D. Gordon, G. W. Bell, N. J. Rinaldi, H. Murray, T. Volkert, J. Schreiber, A. Rolfe, D. Gifford, E. Fraenkel, G. I. Bell, R. A. Young. “Control of Pancreas and Liver Gene Expression by HNF Transcription Factors,” *Science* **303** (2004) 1378-1381.  
*Accompanying News and Views*: R. N. Kulkarni, C. R. Kahn. “HNFs--linking the liver and pancreatic islets in diabetes.” *Science* **303** (2004) 1311-1312.
- X. Zhang, **D. T. Odom**, S.-H. Koo, M. Conkright, G. Canettieri, J. Best, H. Chen, R. Jenner, E. Herbolsheimer, E. Jacobsen, S. Kadam, J. Ecker, B. Emerson, J. Hogenesch, T. Unterman, R. Young, M. Montminy. “Genome-wide analysis of CREB occupancy, phosphorylation, and target gene activation in human tissues.” *Proceedings of the National Academy of Sciences USA* **102** (2005) 4459-4464.
- T. Palomero, **D. T. Odom**, J. O’Neil, A. Ferrando, A. Margolin, D. Neuberg, S. Winter, R. Larson, R. Young, A. Look. “Transcriptional Regulatory Networks Downstream of TAL1/SCL in T-cell Acute Lymphoblastic Leukemia,” *Blood* in press.

## MANUSCRIPTS SUBMITTED

- K. MacIsaac, D. Gordon, L. Nekludova, **D. T. Odom**, D. Gifford, R. Young, E. Fraenkel, “A Hypothesis Based Approach for Identifying the Binding Specificity of Regulatory Proteins from Chromatin Immunoprecipitation Data.” *Manuscript submitted*.
- T. Lee<sup>†</sup>, R. Jenner<sup>†</sup>, L. Boyer<sup>†</sup>, M. Guenther<sup>†</sup>, B. Chevalier<sup>†</sup>, S. Levine<sup>†</sup>, R. Kumar, **D. T. Odom**, et al. “The Active and Polycomb-Repressed Genome in Human Embryonic Stem Cells,” *Manuscript submitted*. <sup>†</sup>Co-first

## RESEARCH SUPPORT

- |   |                           |                       |
|---|---------------------------|-----------------------|
| <b>ER63186</b> (1017650-0007226)  | Odom (PI)                 | <b>9/01 - 8/03</b>    |
| Sloan Foundation-DOE Postdoctoral Fellowship: <i>Dynamic Modeling of Heat Shock</i>           |                           |                       |
| <b>R01</b> (DK068655)   | Young (PI) / Odom (Co-PI) | <b>7/04 – present</b> |
| NIH/NIDDK R01 Research Award: <i>Transcriptional Regulatory Networks in Pancreatic Islets</i> |                           |                       |
| <b>K25</b> (DK070813)   | Odom (PI)                 | <b>6/05 – present</b> |
| NIDDK K25 Career Dev. Award: <i>Insulin Regulators and Control of Islet Transcription</i>     |                           |                       |

## REFEREES

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