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19 September 2005

Yves Brun, Systems Biology Faculty Search
Department of Biology, Indiana University
Jordan Hall 142
1001 E 3rd Street
Bloomington, IN 47405-7005

Dear Search Committee,

This is a letter of reference for Dr. Pablo Jenik, who has applied for the Systems Biology position in your department. I have known Pablo since 1994, when he joined the lab of my colleague Vivian Irish as a graduate student. I served as a member of his dissertation advisory committee. Vivian Irish's lab is across the hall from mine, and our two labs hold weekly joint meetings. In addition, our plant labs at Yale hold a weekly in-house seminar series. I therefore had abundant and regular occasions to hear Pablo discuss his work in both informal and formal settings, and I have a good idea of the quality of his thinking and of his work habits. I have followed Pablo's work since he became a postdoc in Kathy Barton's lab in 2000 at the Carnegie Institution at Stanford, and on two occasions have heard him give talks about that work.

Pablo is a thinker. The strongest impression I have of him as a graduate student here is that of a scholar-scientist, one who takes the time to study thoroughly the literature of an area before investing his time in a problem at the bench. We all aim to do this, but Pablo initially was extreme. One of the challenges that Vivian Irish had as his advisor and that we his committee members had was to encourage him to find an efficient balance of study time and bench time. He has a deep aversion to wasting his time on poorly thought-out experiments, which is great, but of course sometimes it's more time-efficient to try many things and discard the ones that don't work. Pablo tended to seek a higher confidence level that what he tried would work, and to become an expert first through scholarship, thinking, and consulting experts. He was a thoroughly engaged and hard-working grad student, and by the end of his Ph.D. work he had found that balance. We all felt that by his last year, he represented a strong combination of the intellectual and the practical. Still, I believe his preference is to do fewer experiments, but the "right" experiments. He thinks deeply about which problems are worth tackling, and about the significance of the knowledge that could be gained by various strategies. Pablo's strength and rigor as a thinker and his extensive knowledge of the literature of many areas benefited us all here. I know his graduate student colleagues were grateful for many insightful conversations with him about their own projects.

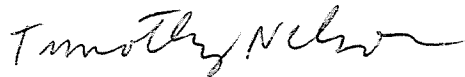
Pablo's project in Vivian's lab included several different approaches to floral development, most of them dependent on immunolocalization and related techniques. He took enormous care to prepare, verify, and characterize antibodies for his studies. In the time since his departure, I think many other workers have come to appreciate just how high in quality were the tools he developed. Just as in his thinking, he insisted on the highest standard for his benchwork and wanted 100% confidence in a finding before he reported it. Pablo has been

similarly rigorous and tenacious as a postdoc working on embryo development. He began with embryo pattern mutants that turned out to be highly challenging to clone and characterize, but the effort was worth it, as evidenced in his most recent findings and papers. From recent discussions with him, it is obvious he is deeply intellectually engaged in the relationships among the regulation of cell size, cell division and embryo morphogenesis. Pablo is already making key contributions to this area, and will be a leader before long.

As a colleague, I anticipate Pablo will be great. He enjoys teaching and is quite good at it. He will certainly do his share of departmental chores—as a grad student he was a reliable seminar host and an initiator and organizer of student activities. He will shine as a person with whom to discuss research ideas and results. I anticipate he will be successful at grant writing, because he writes well, enjoys serious scholarship, thinks logically, and recognizes the right experiments to do. He should be a popular mentor for grad students. He has a gentle touch, but high standards and high expectations.

In summary, I encourage you to consider Pablo Jenik seriously as a future colleague.

Sincerely,

A handwritten signature in black ink that reads "Timothy Nelson". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

Timothy Nelson
Professor, Molecular, Cellular & Developmental Biology
Director, Marsh Botanical Garden

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Applicant: Pablo D. Jenik

September 15, 2005

Yves Brun, Systems Biology Faculty Search
Department of Biology, Indiana University
Jordan Hall 142
1001 E. 3rd Street
Bloomington, IN 47405-7005

Dear Dr. Brun:

I am writing to recommend **Pablo Jenik** most strongly for a faculty position in your department. Pablo carried out his graduate work with me and I have the highest regard for his intellect, abilities, and potential. He has a combination of strengths one would want to see in an independent young scientist, including innate intelligence, motivation, technical skills, and a sophisticated grasp of the wider questions in biology. I have no doubts that he will have a successful independent career in biology.

Pablo joined our doctoral program at Yale in 1994, with the highest recommendations and a superlative record from his undergraduate institution, the University of Buenos Aires. He was among the top two or three students admitted into our program that year, and I was very happy to accept him into my laboratory. My group's major focus is on dissecting the mechanisms governing pattern formation in the Arabidopsis flower. Pablo joined my lab with an expressed interest in exploring questions in developmental biology, and found Arabidopsis to be an excellent model system for addressing critical questions in developmental genetics. Pablo took on the project of developing mosaic analysis techniques for use in Arabidopsis; at the time, no such techniques existed. It is due to Pablo's untiring efforts that he not only developed this sophisticated technology, but also used it to address some very interesting questions in floral patterning.

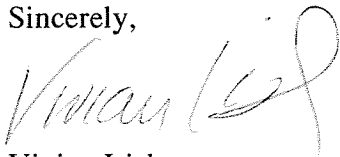
Pablo adapted the Ac/Ds transposable element system from maize for use in Arabidopsis; by transforming Arabidopsis with a modified Ds transposable element containing his gene of interest, he was able to induce sectors of mutant tissue in an otherwise wild type background, as well as adapting this system so as to generate sectors of wild type tissue in an otherwise mutant background. Using this approach, Pablo investigated the role of the Arabidopsis floral homeotic *APETALA3* gene in cell-cell signaling, and showed that it is required for intercellular interactions necessary for the formation of particular organ types. Pablo's work is notable for two reasons. First of all, he developed and carefully

characterized this new mosaic analysis system; it is now, along with a system developed by another lab, the method of choice for carrying out mosaic analyses in Arabidopsis. Second, Pablo showed that the *APETALA3* floral homeotic transcription factor can have a role in cell-cell signaling, a finding that is significant given that most homeotic gene products in *Drosophila* and other species (where genetic approaches are sophisticated enough to carry out these analyses) act exclusively in the cells in which they are expressed. Pablo's accomplishments are reflected in the fact that he has two first author papers in *Development*, and is co-author on a review. Pablo has also given a number of well received public presentations on his graduate work. In addition, Pablo's work has provided the basis for a number of ongoing projects now being carried out in my lab.

Pablo is continuing his investigations into fundamental questions of Arabidopsis pattern formation, by pursuing postdoctoral training with Kathy Barton at the University of Wisconsin. I am sure Kathy will echo my opinion that Pablo is destined to be one of the stars in biology the next few years. He has tackled a very difficult problem in Kathy's lab, of characterizing a gene with a subtle yet interesting mutant phenotype that affects the orientation of cell division during embryogenesis. Pablo's genetic and molecular analyses indicate that this gene, *TILTED*, which encodes a subunit of DNA polymerase, has a role in organizing meristematic domains in the embryo. As such, this gene should provide a useful entry point into assessing the links between cell cycle control and patterning of the embryo. This work is currently in press and provides a valuable starting point for Pablo in his investigations of the cellular basis of embryonic patterning.

This brief summary of Pablo's work should convince you that he has the intelligence, capability and drive to be a successful independent scientist. Furthermore, he thinks quite critically about many areas of biology, and is one of the best read and most thoughtful young scientists I have come across in my twelve years here at Yale. I should add that Pablo is a delightful person; while he is clearly passionate about science, he is well-rounded with many diverse interests. I have encountered many excellent students in the course of my career and I would not hesitate to place Pablo on par with the top students in the country. Pablo has a bright future ahead of him, and I recommend him without reservation.

Sincerely,



Vivian Irish

Professor of Molecular, Cellular and Developmental Biology