



Program in Molecular Biology and Biotechnology
CB# 7100, 101 MBBRL Building
Chapel Hill, N.C. 27599-7100

William F. Marzluff, Director
Deborah W. Windham, Manager
Phone (919) 962-8920
Fax (919) 966-6821

Nov. 3, 2005

Jeremy Bennett, Faculty Search Coordinator
Department of Biology
Indiana University
Bloomington, IN 47405-3700
Dear Dr. Bennett,

I am pleased to recommend Dr. Cindy Brabham for a position in your department. I have known Cindy since she started graduate school at UNC in 1994. I was a member of her thesis committee and the lab she was in was down the hall from my office so we interacted regularly. I have kept in touch with Cindy while she has been in Dave McClay's lab since we have an interest in sea urchins, and attend the sea urchin meetings. I have heard Cindy present her work twice at these international meetings.

From the time she arrived in graduate school, it was clear that Cindy was more mature and prepared than the average graduate student, largely because of her experience as a technician prior to coming to graduate school. She was immediately successful and during her Ph.D. work (and two subsequent years in the lab) co-authored 20 papers, 4 of which she was first author on. The large number of publications reflects both the style of that group of researchers (three large groups with different expertise that worked closely together), the ability of Cindy to work with a variety of people, and her technical skill that allowed her to readily contribute key assays of signal transduction pathways to a variety of studies. Her own thesis was focused on signal transduction and the role of different signaling pathways in the liver, and she did the great majority of the work on the four papers from her Ph.D. that she was co-author on.

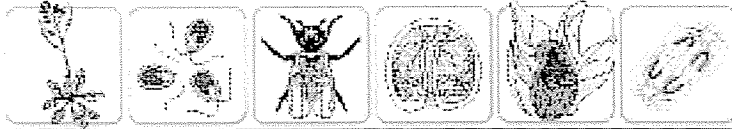
For her postdoctoral work, Cindy chose to study a system where she could examine the role of signaling pathways in early development. She selected Dave McClay who is one of the world leaders in sea urchin development, and has developed the tools to study the role of signal transduction pathways in this organism. Of necessity this required developing a number of reagents. She has published two excellent papers already from this work, and the recent publication in *Development* is a major contribution. With the sea urchin genome having been recently completed, I think it is likely that research in this organism will be rapidly enhanced, since it is clearly one of the best systems for studying and manipulating early embryonic development.

Cindy will be an excellent teacher. She is a good speaker, very well organized, and works well with others. She has become an accomplished scientist and I am confident she has an excellent career ahead of her. I recommend her for a position in your department without any reservations.

Sincerely,

A handwritten signature in cursive script that reads "Bill Marzluff".

William F. Marzluff
Kenan Professor of Biochemistry and Biophysics
Director, Program in Molecular Biology and Biotechnology



Developmental, Cell
and Molecular Biology Group
Department of Biology

USAC Building, Research Center - Box 9,000
Duke University - Durham, NC 27408-1000

Daniel P. Kiehart
Professor of Biology
Room B330G

tel. 919 613-8157--fax 919 613-8177--email dkiehart@Duke.edu

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

11 November 2005

Dear Search Committee:

It is a pleasure to write in support of Cynthia Bradham's application for an Assistant Professorship in your Department. I have known Cyndi as a Postdoc in my friend and colleague, Dave McClay's lab since she joined his lab in 2000. Cyndi is bright, knowledgeable and intellectually aggressive. She is well trained in quantitative science with a B.S. from University of Wisconsin at Madison with a double major in Biology and Chemistry – you know that from reading her *c.v.*, but what may not be clear is that the quality of her training and her ability to integrate that training into thinking about her science. These assets are readily apparent from conversations with her about her research.

She gives excellent, well organized presentations that encourage the audience to think. She answers questions concisely, and with clarity. When I posed a question that I felt her research was not addressing properly, she followed up the remarks (made during a seminar) with a lengthy give and take discussion that made it clear to me that she was knowledgeable about her data and how to interpret it. Moreover, she wanted to be sure to address fully my concerns – *i.e.*, she wanted to get it right not for my sake or her sake, but for the sake of the science.

Cynthia's interests lie in the mechanisms of axis specification and the acquisition of pattern. She has two, quality papers from the McClay lab that address the signaling cascades that mediate specification and pattern formation and three more in the works. In her 2004 Developmental Dynamics paper she showed that PI3K signaling is essential for biomineralization in the sea urchin spicule model system and that this signaling is required in the primary mesenchyme cells. For her Development paper, she cloned sea urchin nodal, then used complementary dominant negative and pharmacological studies to demonstrate that the MAPK p38 functions upstream of it in specifying secondary axis and the skeletogenesis. Dave McClay can put the real significance of those papers in context better than can I.

Overall, she has had an extremely productive career with a large number of solid papers and good evidence of being able to obtain independent funding. A comparatively slow start, paper-wise in the McClay lab (a 4 year drought) very likely reflects her embracing what for her was a completely new field – developmental biology, with sea urchin as a model system. Ultimately, the five paper output she expects is right on target.

At Hopkins, Harvard and Duke, I have had the good fortune of knowing and/or working with some of the most talented grad students and postdocs on the planet, many of whom are research stars with senior, tenured positions in the world's top institutions at this time. Most of them have maintained an effort in fields they chose early in their careers. Cyndi's accomplishments thus far do not compare when adjusted for career stage, to such luminaries. Nevertheless, the conversations I have had with her reflect an intensity that reminds me of the likes of Nick Brown or Daniel St. Johnston. While on raw accomplishment, she is not there yet, I suspect that she will be viewed in the top 10-30% of her cadre once her career in developmental biology reaches log phase – from what I can tell something that is very likely to occur in the near future. The projects she plans that will distinguish her efforts from those of Dave McClay should provide an excellent foundation for her to hit the ground running.

Sincerely yours,

Dan Kiehart