



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

Mail Stop 4631

October 29, 2009

Kim Thompson
Chief Executive Officer
Kraig Biocraft Laboratories, Inc.
120 N. Washington Square
Suite 805
Lansing, MI 48933

**Re: Kraig Biocraft Laboratories, Inc.
Registration Statement on Form S-1
Filed October 2, 2009
File No. 333-162316**

**Annual Report on Form 10-K
Filed April 15, 2009
File No. 333-146316**

Dear Mr. Thompson:

We have reviewed your filings and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Registration Statement on Form S-1

General

1. We note that the number of your currently outstanding shares is 513,377,924, directors and officers own 320,625,500 of these shares, and that approximately

- 88,500,000 shares are being registered for resale by Calm Seas Capital, LLC. Because of the nature and size of the transaction being registered relative to the number of shares outstanding, your offering appears to be an “at the market offering of equity securities by or on behalf of the registrant” under Rule 415(a)(4) of Regulation C. However, it appears that you are not eligible to conduct an offering “at the market.” Therefore, please advise us of the Company’s basis for determining that the transaction is appropriately characterized as a transaction that is eligible to be made under Rule 415(a)(1)(i) or, alternatively, please reduce the amount of shares being registered to an amount that is less than or equal to no more than one-third of the amount of your outstanding securities held by non-affiliates.
2. Your September 14, 2009 letter agreement with Calm Seas Capital states that the investors participating in the equity line transaction consist of “Calm Seas Capital, LLC, as lead investor, and associated entities.” Your registration statement, in contrast, indicates that Calm Seas Capital is the sole investor and selling security holder. Please tell us the names and roles of any additional entities that are participating in the equity line transaction, being sure to describe any relationships among to the entities. If there are additional entities participating in the equity line transaction, please revise the registration statement to disclose their participation in the same manner and to the same extent as the information you have provided for Calm Seas Capital.
 3. To the extent that you have any financial information available for the recently completed quarter, please provide a Recent Developments section to disclose and discuss such information.

Prospectus Cover Page

4. We note your reference to the July 17, 2009 letter agreement. Please revise your disclosure to also refer to the September 14, 2009 letter and memorandum of understanding filed as Exhibit 10.4 to the registration statement. In addition, please provide us with a copy of the July 17, 2009 letter agreement and tell us why you have not filed it as an exhibit to the registration statement. Please confirm to us that all the terms of the equity line agreement that you have negotiated with Calm Seas Capital are set forth in the September 14, 2009 letter and memorandum of understanding. Please note that we may have additional comments based on your response.

Prospectus Summary, page 2

5. In this section, please briefly describe the Company’s current financial situation and disclose that you have received a going concern opinion from your independent registered public accounting firm.

6. In this section and in the Use of Proceeds section, please discuss the likelihood that the Company will receive, or will need, based on the Company's business plans, the full amount of the proceeds available under the equity line agreement. If the Company is not likely to receive the full amount, please explain why the parties chose \$1,000,000 as the equity line dollar amount.

About Our Company, page 2

7. We note that your agreement with the University of Notre Dame has lapsed and that you are attempting to renew the agreement. Please disclose the current status of your efforts to renew the agreement as well as the likely material consequences if you fail to renew the agreement.

The Offering, page 2

8. Please tell us why you believe you can properly issue more than 88,500,000 shares. In this regard, we note that the registration statement covers the issuance of only 88,500,000 shares. You are required to make a good-faith estimate of the maximum number of shares that you may put to the investor under the equity line agreement. If the number of registered shares is less than the actual number issued, you must file a new registration statement to register the additional shares, assuming the investor desires to sell those additional shares.

Risk Factors, page 5

9. Please move the going concern, internal control and patent rights risk factors on page 7 to the beginning of your risk factor disclosure.
10. Please include a risk factor disclosing the dilutive effect of the pricing formula under the Equity Line Agreement.

We may be unable to maintain an effective system of internal controls . . . , page 7

11. We note that you have not yet remediated some or all of the material weaknesses present at the end of your last fiscal year. Please clearly disclose the remaining material weaknesses, the steps you plan to take to remediate them, and when you anticipate that the material weaknesses will be remediated.

We may not have access to the full amount under the Equity Line, page 11

12. Please expand this risk factor to discuss the likelihood that the Company will have access to the full amount available to it under the equity line.

Risk Factors Related to the Equity Line of Credit and This Offering, page 11

We are registering an aggregate of 88,500,000 shares of Class A Common Stock to be issued under the Equity Line of Credit. The sale of such shares could depress the market price of our Class A common stock, page 11

13. Please explain the purpose and context of the reference to two million shares in the first line of this risk factor. If the reference has been made in error, please correct the disclosure.

The selling shareholder may engage in short sales. Significant short sales of our common stock will cause the decline of our share price, page 11

14. This risk factor appears to conflict with the terms of the September 14, 2009 letter and memorandum of understanding, which prohibits the selling shareholder from engaging in short sales during the term of the equity line agreement. Please revise your disclosure accordingly. Please also make conforming revisions to the Plan of Distribution section of the prospectus.

Use of Proceeds, page 12

15. Pursuant to Instruction 1 of Item 504 of Regulation S-K, please prioritize the purposes for the proceeds from the equity line and discuss the Company's plans if substantially less than the maximum proceeds are obtained. Additionally, on page 9 we note that management intends to use the proceeds from the offering to pay off some of the Company's past indebtedness. If any material part of the proceeds is to be used to discharge indebtedness, please disclose the interest rate and maturity of such indebtedness. Please refer to Instruction 4 of Item 504 of Regulation S-K.

Selling Shareholder, page 13

16. In this section and the Sale of Unregistered Securities section, please describe in detail the Bridge Investment that is part of the Equity Line Agreement. In addition, please disclose the following information in the Selling Shareholder section:
 - the discount to market at which the selling shareholder will receive the shares;
 - the likelihood you will ever receive the full amount under the equity line, and why the parties picked the principal amount if it is not likely that you will receive that amount;
 - the effect of sales on the number of outstanding securities, including dilution, effects on trading price and the mechanics of the conversion or issuance formula;

- the full discounted price at which the selling shareholder will buy shares; and
- any fees, commissions or other compensation received by the investor.

Description of Securities, page 15

17. We note your disclosure that there is no par value for the shares of Class A common stock. However, on page 3, you state that the par value for the Class A common stock is \$0.001. Please reconcile.
18. We note your disclosure that you intend to issue preferred stock to Kim Thompson. Contrary to your disclosure, this issuance does not appear to be described in your financial statements. Please provide us with the material terms of this proposed issuance, including a copy of the agreement pursuant to which the securities will be issued. In addition, please disclose whether the selling shareholder has consented to this issuance.

Description of Business, page 17

19. Please revise this section to briefly describe the following:
- All patents, trademarks, licenses, concessions, royalty agreements or labor contracts, including duration; and
 - Estimate of the amount spent during each of the last two fiscal years on research and development activities.
- See Item 101(h)(4)(vii) and (x) of Regulation S-K.

The Product, page 18

20. Please disclose the basis for the statements in the chart comparing the properties of spider silk and steel.

Market For Common Equity and Related Stockholder Matters, page 21

21. We note that your common stock began trading on OTCBB on February 20, 2008. Please include a low and high price for the quarter ended March 31, 2008 pursuant to Item 201(a)(ii) of Regulation S-K.

Financial Statements

(F) Income Taxes, page F-7

22. Please revise to include the applicable disclosures required by SFAS 109.

Note 4. Commitments and Contingencies, page F-12

23. We note that your employment agreement with your CEO appears to allow for unpaid salary to be converted into common stock at a price that may be less than the fair value of the common stock. Please revise to disclose what consideration you have given to the accounting for this potential benefit. Reference FAS 150 and EITF 00-27.
24. We note that you have not made the required payments pursuant to your license agreement. Please revise to specifically disclose your intentions regarding payment, whether your agreement may terminate because of non-payment and how such potential termination may impact your business.

Note 6. Subsequent Events, page F-17

25. Please amend your annual financial statements and related disclosures contained in the registration statement as well as Form 10-K for the fiscal year ended December 31, 2008 to retroactively and consistently present the subsequent stock split in accordance with SAB Topic 4:C.

Note 6. Subsequent Events, page F-33

26. We note that you entered into an agreement with an investor group on July 17, 2009. Please revise to include a specific and comprehensive discussion regarding how you will account for the convertible units, warrants and registration rights within the agreement. Reference FAS 150, EITF 00-19 and EITF 00-27.

Undertakings, page II-5

27. Please revise to delete paragraph (6) from your undertakings, as it does not appear to be relevant to this offering. See Item 512 of Regulation S-K.

Form 10-K for the Fiscal Year Ended December 31, 2009

General

28. To the extent the above comments apply to your Exchange Act filings, please comply with the above comments in future filings.

Description of Property, page 2

29. In future filings, please disclose whether the Company leases or owns this office space. See Item 102 of Regulation S-K.

Management's Annual Report on Internal Control Over Financial Reporting, page 6

30. We note your disclosure in the first paragraph of this section. In future filings, if you chose to define internal control over financial reporting, please use the full definition set forth in Exchange Act Rules 13a-15(f) and 15d-15(f).
31. To the extent that you have material weaknesses in internal control over financial reporting in the future, please disclose when you anticipate remediating the material weaknesses and describe in detail the remediation steps you will take.

Signatures

32. We note that you have only one executive officer, who is also your sole director. In future filings, if you continue to have just one executive officer, please disclose on the signature page that your executive officer is signing the registration individually in the capacities of principal executive officer, principal financial officer and principal accounting officer. Please refer to General Instruction D(2)(a) of Form 10-K and the signature page section of Form 10-K.

Exhibit 31.1 – Section 302 Certification

33. In future filings, please file your certifications exactly as set forth in Item 601(b)(31)(i) of Regulation S-K. We note several discrepancies throughout the certification. For example, the second part of paragraph 4(b) should refer to providing reasonable assurance regarding “the reliability” of financial reporting rather than “their liability.” This comment also applies to the Section 302 certifications contained in your Forms 10-Q for the periods ending March 31, 2009 and June 30, 2009.

* * * *

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Bret Johnson, Staff Accountant, at (202) 551-3753 or Patricia Armelin, Staff Accountant, at (202) 551-3747 if you have questions regarding comments on the financial statements and related matters. Please contact Jessica Kane, Staff Attorney, at (202) 551-3235 or Dieter King, Staff Attorney, at (202) 551-3338 with any other questions.

Sincerely,

Pamela Long
Assistant Director

Kim Thompson
Kraig Biocraft Laboratories, Inc.
October 29, 2009
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cc: Richard C. Fox
Fox Law Offices, P.A.
131 Court Street, #11
Exeter, NH 03833