### Title of research need:
Specific Population Studies in Dental Age Assessment

### Keywords:
Dental development, chronological age, physiological age, biological age, genetics, ethnicity, ancestry

### Submitting subcommittee(s):
Odontology

### Date Approved:
8/23/2016

(If SAC review identifies additional subcommittees, add them to the box above.)

### Background information:

1. **Description of research need:**

   Rates of dental development vary among individuals, and population groups. These groups are often described in terms of genetics (ethnicity, ancestry, gender) and extrinsic factors (geographic origin). Intrinsic factors, such as disease states and nutritional status have been considered as well. Studies have shown that population-specific data provides for a more accurate assessment of dental age.

   **For consideration:** evaluation of dental age assessment methods for individuals with other genetic conditions that can include, but not be limited to: physiologic growth abnormalities, and congenitally missing teeth.

2. **Key bibliographic references relating to this research need:**


3a. **In what ways would the research results improve current laboratory capabilities?**

   Dental age assessment involves comparison of an individual to a standard reference population commonly described by age, gender, ethnicity, and geographic origin. Unknown are the individual’s chronological age, and the individual’s rate of dental development. Ethnicity or ancestry is an analog for the genetic factors governing rate of development. Accuracy of dental age assessment may be improved when the individual is compared to a reference population that is more similar to the individual as population-specific data becomes available for comparison.
3b. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)?

It should improve our understanding of the role of population-specific data in dental age assessment, as well as provide a basis for guidelines and standards in dental age estimation.

3c. In what ways would the research results improve services to the criminal justice system?

Dental age assessment is an estimation of the chronological age of an individual for whom birth records are unavailable. This age estimate can be a data point to assist with the decision-making process associated with adjudication of a living individual in the criminal justice system. Dental age assessment can serve to describe a deceased individual in the identification process.

4. Status assessment (I, II, III, or IV):

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<tr>
<th>Major gap in current knowledge</th>
<th>Minor gap in current knowledge</th>
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<tbody>
<tr>
<td><strong>No or limited</strong> current research is being conducted</td>
<td><strong>I</strong></td>
</tr>
<tr>
<td><strong>Existing</strong> current research is being conducted</td>
<td><strong>II</strong></td>
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This research need has been identified by one or more subcommittees of OSAC and is being provided as an informational resource to the community.
(Approval is by majority vote of subcommittee. Once approved, forward to SAC.)

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<thead>
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<th>Subcommittee</th>
<th>Approval date:</th>
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1. Does the SAC agree with the research need?  Yes ☑  No ☐

2. Does the SAC agree with the status assessment?  Yes ☑  No ☐

If no, what is the status assessment of the SAC:  

Approval date:  

(Approval is by majority vote of SAC. Once approved, forward to NIST for posting.)